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RESIDENTIAL PREFERENCES MEETING SUSTAINABLE URBAN GOALS
An Analysis of the Variability of Urban and Suburban Preferences

by

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To my Mother and Father who started it all and

to Saša, Miko, Nina and Ivan who will continue…

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Abstract

Current planning policy in the UK, following the EU recommendations and sustainable development path, suggests a return to a more compact and less land consumptive urban pattern that places greater emphasis on higher densities, mixed uses, quality shared space and facilities, and public transport. Despite all the promotion of urban living, in reality people most commonly remain conservative in their residential choices and tend to prefer the type of living which offers them certain amenities and values they either cannot find or cannot afford within compact cities.

Within the context of Glasgow, which has a steadily declining urban population, the research was focused on sustainability of neighbourhoods rather than on compact city as a sustainable solution. The assumption of this thesis was that sustainability of urban/suburban neighbourhoods is strongly related to their attraction to residents.

The aim of the research was to determine the underlying factors that influence residents in their choice of preferred neighbourhood of either urban or suburban type and to point out which (if any) of dimensions of urban/suburban preferences appear to be changeable.

The empirical study involved a comprehensive questionnaire survey, which was conducted on the sample of 246 residents in the two comparable neighbourhoods in terms of high preference: the West End of Glasgow and Bearsden (Glasgow's suburban neighbourhood).

The findings suggest that although there is a strong attachment to the residential neighbourhood in both case study areas, suburban residents in general place higher disfavour towards any residential mobility. The main contribution regards the development of a model for prediction of resident's total neighbourhood satisfaction, which may serve as an indicator of what people require from a sustainable residential environment.

Table of Contents

List of Figures

List of Tables

List of Equations

1 Introduction

The topic for dissertation on residential preferences meeting sustainable urban goals was initiated by the challenge of confronting the long-standing problem of Britain's urban exodus driven by lifestyle aspirations that have prioritised suburban environments.

Urban sustainability, which presumes reurbanisation and the pursuit of more compact settlement structures, may well be justified and supported by the current urban policy, yet if such policy is out of tune with public opinion, it will never be effective. Therefore, a much clearer understanding of factors which influence people's preferences to both urban and suburban areas is needed, so that we are better placed to use these factors to encourage suburban residents to consider urban living and to retain the present urban population in cities.

The setting for the research on residential preferences in this study is placed in Glasgow, where the loss of population in the city and its decanting to suburban areas or smaller urban centres in the region has been apparent for many years. Within this context, the actual focus is on the two neighbourhoods in the Greater Glasgow area that are each attractive for the residents who are able to exercise their residential choice.

The primary research questions this study addresses are: 1) what influences current residential preferences of suburban residents who are attracted by their neighbourhood and is there any reason to believe that their prevailing preference can be changed towards the neighbourhood of urban type; and 2) what influences current residential preferences of urban residents who are attracted by their neighbourhood and which aspect of prevailing urban preference appears to be most changeable in favour of suburban living.

In order to find out more about residential preferences of urban and suburban residents, the search requires an exploration of underlying components, or the dimensions of residential preference (neighbourhood attachment, social and environmental context, physical planning issues and residential mobility).

Furthermore, it is important to analyse urban and suburban residential preference components in their flexibility and adaptability in support of suburban and urban life.

The specific outcomes this research aims is to obtain residential preference profiles of urban and suburban neighbourhoods that are residentially attractive, and to use them to gain an understanding of the problems and possibilities when attempting to re-engineer the residential preferences of people in favour of more sustainable forms of the living environment.

The structure of this thesis is given in four main sections: opening sections (introduction and context of the study), methodological approach (research method), results of the analyses (preliminary analyses, findings on the relationships among variables of the residential preference components in the two types of neighbourhoods), and concluding sections (discussion of the results and conclusion).

In the Context of the study, the reader will be presented with the two main concepts for this research: sustainability and residential preferences. This chapter provides a summary of the theoretical views and other researchers' experiences regarding the two underlying concepts of this study. It also synthesizes the findings of residential preference studies of other researchers that will be tested in this research's analyses. Finally, in this chapter, the main features of the two neighbourhoods (the West End of Glasgow and Bearsden) as the case study areas of this research will also be presented.

The Chapter on Research method guides the reader through all the stages of social science research that are followed in the study on residential preferences. It starts from the basic elements of the research, i.e. problems, variables, relations and hypotheses; then it continues with the research design and data collection; and finishes with an overview of statistical procedures to be applied in this research.

In the Preliminary analyses, one will be presented with the descriptive statistics for all the variables employed in the research on residential preferences in the two case study neighbourhoods. These results describe the basic features of the data in the study and they provide simple summaries about the sample, indicating which methods of statistical analyses can be applied in testing the relationships among certain variables.

The Chapter on Findings on the relationships among variables of the residential preference components in the two types of neighbourhoods presents all the results of statistical analyses, showing whether the tested relationships are statistically significant or not for the population of each neighbourhood as a whole.

The Discussion of the statistical analyses results on residential preferences in the two neighbourhoods presents the summaries of interpretations for the results of both descriptive and inferential statistics, and it provides the answers to the research questions of the study on residential preference profiles in the two neighbourhoods.

Finally, the Conclusion defines the extent to which the research aims are achieved and provides the recommendations and agenda for further research.

2 Context of the Study

This chapter explores two concepts: sustainable development and residential preferences. In the first part, it is presented how the concept of sustainability entered a prominent position in both global and local discourse and policy over the past two decades, to approach possible pathways of communities. Secondly, residential preferences are explored in their underlying dimensions, and the two case study neighbourhoods of urban and suburban type are presented as a context for further analyses on residential preferences meeting the sustainable urban goals.

2.1 Sustainable Development from global to local vision

2.1.1 The Meanings of Sustainability

The definition of the term ‘sustainable’ is derived from the verb ‘to sustain’ which means ‘to endure without giving way, continue indefinitely’ (Johnson, 1991).

Sustainable development does imply limits, which are not absolute but are ‘limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities’ (WCED, 1987:8).

2.1.1.1 Environmentalism and Sustainability

Clearly, the idea of ‘sustainable development’ is affiliated with ecocentrism (ecological environmentalism), which views humankind as part of a global ecosystem and therefore, subject to ecological laws. Regarding the present environmental crisis, this infers a new way of life and new scales in the growth, production, consumption and attitude towards nature and its resources. Technocentrism, which is another mode of environmentalism, recognises environmental problems but believes that our current society will always solve them. As O’Riordan (1976) puts it, the ideology of technocentrism is based on progress, efficiency, rationality and control, while senses of wonder, reverence, and moral obligation are the hallmarks of the ecocentric mode.

Modern concern for the environment arose from reaction to the threats to it, particularly in the second half of twentieth century. Pepper (1984) points out that mass protests over concerns that can be broadly interpreted as environmental started with big anti-nuclear-bomb protests in the late 1950s in Britain. In decades that followed, perceived ecological catastrophes all over the world showed only that in reality there was no retardation of environmental problems. Representing the ecocentric views, 'Greens' often stressed that our domineering and exploitative attitudes towards nature were at the heart of the world's problems of pollution, resource depletion and environmental deterioration. They have mainly blamed 'industrial' society because it has been led by profit maximisation, and hence it has encouraged overconsumption. In reality, technocentrists tended to be far more 'politically influential' in forming the opinion of those who were economically and politically powerful.

Before the 'sustainable development' concept was launched, the principal ideas of modern environmentalism were elaborated in three key publications: 'The Limits to Growth', 'Blueprint for Survival', and 'Small is Beautiful'. For all three publications, it is common that they had appeared at the same period and were ecocentric in essence, although 'The Limits to Growth' had also technocentric characteristics since its ideological background was in the ideas of 1930s MIT technocratic group of system analysts (O'Riordan, 1976).

Many interpreted 'The Limits to Growth' as prediction of doom, but it was actually about a choice and not about a preordained future. It contained a warning that in case that the growth of population, industry, pollution and resource depletion continues unchanged, the limits to growth on this planet will be reached within the next 100 years and would result in a sudden and incontrollable decline in both population and industrial capacity (Meadows et al., 1972).

'Blueprint for survival' wanted to do more than to scare people. It presented a detailed picture of what an ecological society would be like, almost resembling a planning report. This publication set out a future geography of Britain based on ideals of decentralisation and smallness of scale. The main compensation for the

deterioration in material standard would be an enhanced quality of life (Goldsmith, 1977; Pepper, 1984).

Published in 1973, 'Small is Beautiful' had a message that we must change our value system and look to our education to find the way out of the wrong economic thinking that has caused ecological 'crisis'. Schumacher, who was the author of this publication, emphasized the quality of work as a part of improved the quality of life and he rejected the notion that 'high' technology is of merit for its own sake (Pepper,1984:26).

Sustainable development, following the thoughts expressed in these three publications made a step forward. It has achieved a very high popularity in slightly over one decade, becoming 'the always-present element' in any conversation on environmental issues worldwide. In fact, the term has been used so often, and even without knowing what it really implies, that its meaning has grown dangerously weak.

The World Conservation Union (IUCN) introduced the concept of 'sustainable development' in 1980 through *The World Conservation Strategy,* defining it as 'maintenance of essential ecological processes and life support systems, the preservation of genetic diversity, and the sustainable utilization of species and ecosystems'. But it was only after the Brundtland Report ('Our Common Future') in 1987 that the notion of sustainable development started being immensely popularised. By publishing this report, the World Commission on Environment and Development recognised that development, as it was understood and pursued so far, was not sustainable. One of the mostly quoted definitions of sustainable development comes from this report:

> Sustainable development is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.
>
> (WCED, 1987:43)

In its essence, sustainable development is not a fixed state of harmony. It is rather a *process of change* in which changes in exploitation of resources as well as institutional, fiscal and technological changes will support both needs of present and future generations.

Another definition of sustainable development given by IUCN, UNEP, and WWF in 1991 states that 'sustainable development means improving the quality of life while living within the carrying capacity of supporting ecosystems' (see: Jacobs, 1993). Humans are an integral part of the ecosystem and in order 'to develop sustainability, people need to improve their relationship with each other and with the ecosystems that support them' (Carew-Reid et al., 1994). Economic growth is a part of development, but it cannot be a goal in itself nor can it increase indefinitely.

The growing international concern for environmental issues and sustainable development at the international level, which was encouraged by the Brundtland Report, led to the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992. The outputs from UNCED included the Rio Declaration of sustainable development principles, three agreements on global environment issues and 'Agenda 21' which is intended to provide a basis – an Agenda – for the achievement of sustainable development in the 21st century (see: United Nations, 1993). This document was agreed by 178 governments and, although it was not legally binding it represented political commitment at the highest level. The principles of Rio Declaration define the rights of people to development and their responsibilities to safeguard the common environment.

Although achievements of the Rio Conference were emphasized by National governments as a success, ecocentrists expressed scepticism towards the whole approach of Agenda 21. Since they had the experience of the past as their guide, the question for ecocentrists was not 'how the environment should be managed but who will manage it and in whose interest' (Goldsmith et al., 1992, quoted in Pepper, 1996:103).

The same kind of scepticism stays 10 years later, following the latest World Summit on Sustainable Development, which was held in Johannesburg at the end of August and beginning of September 2002. This Summit produced three types of outcomes: the 'Johannesburg Declaration on Sustainable Development', which was agreed by 100 Heads of State and Government who attended the Summit; the 'Johannesburg Plan of Implementation', which introduced new action themes such as globalisation and corporate accountability; and the 'Type II Commitments by governments and

other stakeholders', which consists of activities that will implement sustainable development at the national, regional and international level (see: Doran, 2002).

The action plan agreed in Johannesburg is less visionary than Agenda 21. It misses a sense of urgency and it 'reflects perhaps the feeling among many nations that they no longer want to promise the Earth and fail – that they would rather step forward than run too fast' (Jan Pronk, UN secretary general's special envoy, in Kirby, 2002).

There were some undeniable gains of the Johannesburg Summit, namely the agreement to halve the number of people without proper sanitation by 2015. There were valuable agreements on chemicals but only some encouraging talks on renewable energy, endangered species, and tighter links between trade, environment and development. Reality is that in 10 years since Rio Conference, the global environment, on many factors though not all, has worsened. The rich and the secure do not need urgency, and any change, if it is to come, can be incremental for them. But the time is neither on the side of the planet, nor on the side of the poor.

Generally, people find it difficult to live in a sustainable way since present values, knowledge systems, technologies and institutions make it easier to live unsustainably (Carew-Reid, 1994). Another great obstacle for implementation of sustainable development is that many people feel threatened by change, especially when viable alternatives are not clear.

2.1.1.2 Finitude Problems and Distributional Effects

The sustainability paradigm is a modern reply to problems of *finitude*. Both environmentalists and economists have recognised that there is a finitude (i.e. a condition of being finite) of natural environment's resources. The acknowledgement of this finitude is what puts us under obligation to change our present behaviour towards the environment which is mainly led by material gain through economic activity.

Generally, the problems of finitude can be observed from two perspectives, which are coming out of ecocentric and technocentric approaches to the environmental problems.

One way of looking at these problems starts from the *stock of resources,* i.e. 'a finite amount of resources on which we are dependent for our life and luxuries' (Needham, 1999). This view has been based on non-renewable resources, which (in a human time scale) cannot be regenerated by natural processes. Then, the more one uses, the less will be left for others, and if the rate of use is greater, the depletion is more noticed. However, this way of looking at finitude issues is criticised as too static because of the existence of two other types of resources: *continuing resources* which are inexhaustible since they come from the sun and gravity force, and *renewable resources* which, through natural regeneration processes, can continue in supply despite being used by humankind. However, if renewable resources are exploited faster than they can regenerate, their stock will decline.

The more dynamic view of looking at finitude concentrates on the *carrying capacity* of the environment. Carrying capacity is 'the maximum rate of resource consumption and waste that can be sustained indefinitely in a region without impairing ecological productivity and integrity' (Carley & Christie, 2000). This presumes that exploitation of renewable resources should equal their regeneration rates and that waste emission rates should not exceed the natural assimilative capacity of the ecosystem. However, this way of looking at finitude issues has its limitations since it pays little attention to non-renewable resources.

Distributional choices that people might take depend on the approach towards the finitude of resources. If there is a focus on the stock of resources approach, all consumption *today* depletes the availability of resources *tomorrow* (see: Needham, 1999).

On the other hand, if the choice is to rely completely on the environment's carrying capacity or to take into account the possibility that technology will find alternatives for non-renewable resources, people can use resources *today* without reducing the availability *tomorrow*, as long as they do not over-exceed that use.

In any case, we cannot ignore the problems of finitude, most notably with the first approach where the stress is on non-renewable resources, but also when considering only the second approach, where we have a very vague idea of what is meant by an over-exceeding use of resources.

What is certain is that 'the age of innocence' is long behind our generation and that in the past two centuries people have managed to transform our planet in ways that 'natural processes and previous civilisations would have taken millennia to achieve' (Carley & Christie, 2000). It is not unreasonable to think that for the first time in the history of humanity we may destroy all life on this planet not only because of the impact of nuclear weapons but because of the lack of control in production which, if it continues like up today, will definitely take us from a 'production mode' to a 'destruction mode' (Gadotti, 2000).

The 'environmental crisis' results from the finitude of the environment's abundance and, as we are a part of the environment, we cannot think of ourselves as being protected under a bell-jar. To use the same metaphor, we are more likely to experience that the glass is closing down on us.

According to Needham (1999), 'with all respect to sustainability, whenever finitude is in matter, it is necessary to choose and consequently, there are going to be gainers and losers'. Distributional effects can vary between different generations, within the same generation and between different countries.

Regarding inter-generational effects, the path for sustainable development is, by its definition, that we choose to 'lose' by reducing our consumption *today* so the *future* generations will benefit. On the other hand, there are many contemporaries who are not interested to consume less just for the sake of some 'abstract' future generations.[1]

For the better understanding of *inter-generational effects*, the question that we have to ask ourselves is: What kind of environment do we want our posterity to grow up in? In addition to this, there is a favourite 'Green' adage, which puts a moral obligation on us: we do not inherit the world from our parents, we borrow it from our children. Future generations may be richer financially but for the price of inheriting an environment which is severely degraded. As Jacobs (1991:71) points out 'it is true

[1] 'There is the story of the farmer in the American mid-west who exploited his land in a non-sustainable way ('dust bowl farming'). He was told that he should change his practices 'for the sake of posterity'. 'What did posterity ever do for me?' he replied' (source: Needham,1999).

that we cannot know what value future generations will place on the environment, and in particular what view they will take of those aspects of our current environmental behaviour which will affect them but it is not unreasonable to try and guess'.

However, there are many distributional choices that exist even within one generation. If we (as present generation in one country) choose to lose for the sake of future generations, that doesn't imply everybody in one country will equally reduce his or her own consumption. In one generation, those who reduce their resource consumption more than others will 'lose' in comparison to the others who basically 'gain' in this relation. This type of distributional effects is called *intra-generational effects*.

There are also the *trans-frontier effects*, which exist because of a difference in resources' consumption between rich and poor countries.[2] 'The richest 20% of the world's population are responsible for 80% of the present consumption of scarce environmental resources' (Needham, 1999). According to the same author, if poor countries were to use resources to the same amount as rich countries do, rich countries would have to reduce their resource consumption to 12.5% of their present level. 'The problem for the world's environment is that only a small minority of the world's population is in any position to adopt a post-materialistic perspective, and only a minority of these choose to do so' (Carley & Spapens, 1998).

The '*ecological footprint*' is a term which is strongly linked to trans-frontier distributional effects and which also may be an ultimate indicator of sustainability, a tool that helps interpreting what sustainability really means. According to the *RTPI Introductory Guide to Planning & Environmental Protection* (2001), the *ecological footprint* is used 'in relation to resource consumption, and aims to express the

[2] Some authors use instead the distinction between 'North' and 'South' (see Carley & Spapens, 1998; Reid, 1995) which is adopted from the Brandt Commission (the Independent Commission on International Development Issues, set up in 1977). Terms 'North' and 'South' are used to refer to industrialized countries with a high average GNP and countries with little industrialization and/or low GNP respectively.

quantity of resources consumed in terms of the land surface required to generate them.' Usually, in advanced industrial countries, the land surface required to generate resources consumed by their population exceeds the surface area they actually occupy because they claim more ecological capacity than there is within their boundaries. For example, a country, which imports resources from another country, makes a claim on the surface area in that other country and spreads its ecological footprint.

> The ecological footprint of a given population (household, community, country) is the total area of ecologically productive land and water occupied exclusively to produce all the resources (food, fuel, fibre) consumed and to assimilate all the wastes generated by that population using prevailing technology.
>
> (Craig,URL: http://www.olywa.net/roundtable/footprint/index.html)

Figure 2-1: The Ecological Footprint. Image from Sustainable Community Roundtable, Online available URL: http://www.olywa.net/roundtable/footprint/index.html [26 October 2001]

A recent study (UNEP, 2000) suggests that the United States, the United Arab Emirates and Singapore have the world's greatest ecological footprint. It has been calculated that the 'ecological footprint' of the average American is about 10.3 hectares. In the UK, for example, the ecological footprint (4.6 ha/cap) is more than twice as big than what is set up as a sustainable goal for the average footprint. 'Countries with ecological footprints lower than 1.7 hectares per person have a global impact that could be replicated by everybody without putting the planet's

ecological long-term capacity at risk' (Wackernagel et al., 1997). If every nation had the same rate of consumption and waste production as the three countries with biggest ecological footprints, at least another two earths would be needed.

According to Mathis Wackernagel who is one of the 'inventors' of the ecological footprint, this term is 'a yardstick for measuring the ecological bottom line of sustainability for securing people's quality of life.' In the context of growing populations with rising material expectations, the question of how to provide everybody with essential resources becomes a major challenge. The right thing would be that those with biggest ecological footprint adopt an ethic of 'voluntary simplicity' and radically reduce their consumption and waste production. Or like Rees (1995a) stresses: 'unless the wealthy nations act to reduce their growing ecological deficits global sustainability will remain a receding dream'.

In order to reduce our ecological footprint, the first step would be to 'recognise that present environmental circumstances are less an environmental and technical problem than a human behavioural and social one' (Flint, 2000). Same author suggests that people who live on ecological goods imported from afar, are spatially and psychologically disconnected from the resources that sustain them. They do not take a part in the management of distant sources of supply and at the same time they lose any direct incentive to conserve their own resources used by others.

The ecological footprint challenges common assumptions about economy, society and nature. It also reveals the sustainability gap confronting society – the difference between ecological production and human over-consumption.

2.1.2 Public and Individual Interests in Sustainability

The term 'sustainable development' has been around for about 30 years but has only recently been popularised. It derives originally from the biological concept of 'sustainable yield' - that is to say, the rate at which certain species may be harvested without depleting their population (see: *Sustainable development network*, 2002).

Starting in the late 1980s, environmentalists and government officials began applying the terms 'sustainability' and 'sustainable development' when discussing environmental policy. Consequently, the term has become an integral part of the language not only of individuals but also of wider groups of the public and of the media. As Devall (2001) notices, the word sustainable ‘has been slapped onto everything from sustainable forestry to sustainable agriculture, sustainable economic growth, sustainable development, sustainable communities and sustainable energy production’.

The concept of ‘sustainable development’ arose out of need to define what is meant by ‘environmental protection’. Whilst achieving high popularity and becoming one of the buzzwords of conversation on environmental issues, the term ‘sustainable development’ was thrown around so often that its meaning has grown dangerously weak.

Since there is a large number of definitions and interpretations of the term, which are circulating in various literature sources, one of the critical points about sustainable development is how different people, groups or individuals apprehend it.

2.1.2.1 Interpretations of Sustainable Development

The vagueness and ambiguity of the term ‘sustainable development’ has its pros and cons. Even the most quoted definition of sustainable development, given in the Brundtland Report, has a character of ‘imprecision’, but despite its vagueness – indeed, perhaps because of it – this definition makes an important statement. It seems to strike two important chords: ‘first, it touches on our sense of guilt about what we have done to our planet, and second, on a very deeply-rooted human desire to make sure our children’s futures are provided for’ (Reid, 1995: *xvi*). However, it may be argued that this definition doesn’t say anything about inequities that exist within one

generation while equity between present and future generations is implicitly given in 'meeting needs'.

Another negative connotation of the ambiguity of 'sustainable development' stems from the fact that it allows a possible abuse of the term by those wishing to cloak their (unsustainable) activity with this respectable goal. Some fear that 'the term is now in danger of becoming an empty shibboleth' (Daly, 1992a:249) or that 'it has come to mean whatever suits the particular advocacy of the individual concerned' (Pearce et al.,1989:1).

On the other hand, some proponents of sustainability argue that we don't need a theory of sustainability, or 'we already know what it is and even if we didn't know, it is a motivating slogan for a social change' (Devall, 2001).

Although 'sustainable development' was coined to bridge the gap between environmentalists and economists, the imprecision of the term helped a deterioration of its meaning. With both sides being able to evoke it as a slogan in support of their diametrically opposed points of view, we can notice that sustainable development begins to 'wear thin' after a while.

Despite this attack on sustainable development's palatableness to everybody, some authors like Skolimowski (1995) emphasize this as its greatest virtue – for being radical and not yet offensive.

By linking environmental protection to economic development, 'sustainable development' appears to smooth the conflicts between these two aims – it entrenches environmental considerations in economic policy-making. It also stands for commitment to *equity* and fair distribution of resources on inter-generational, intra-generational and transnational (trans-frontier) levels. Another strong point of this concept is in its intuitive meaning: sustainability is the *capacity* to *last* and *continue*. Even the use of the word 'development' instead of economic 'growth' is more appropriate since it brings a notion of economic welfare that includes non-economical components as well.

Up to a certain degree, the meaning of *development* is captured 'by the economist's concept of utility, or, more familiarly, well-being' (Pearce et al., 1989). Development is a value word representing a set of desirable goals or objectives for a society, which

encompass the natural environment, social relations, education, production, consumption and well-being. It has been used over a wide range of contexts and, in fact, an imprecision and multiple use of the word ‘development’ also contributes to a vagueness of ‘sustainable development’ term.

As Jacobs (1991) points out, sustainable development is a ‘contestable concept’: one that affords a variety of competing interpretations or conceptions. That is not a unique case since all general objectives (e.g. democracy or justice) have their basic meanings and everyone is in favour of them, but deep conflicts remain how they should be understood and what they imply for policy. There is nobody who would be in favour of ‘unsustainable development’ as nobody would stand for non-democracy or injustice. Nevertheless, if people themselves are not too directly or too drastically affected by injustice for example, generally they tolerate it in society at large. The same can be deduced for ‘unsustainability’, which is tolerated unless it affects people in a very direct way.

There is an argument that some of what currently gets called ‘sustainable development’ is no such thing, but it does not mean the concept should be dismissed, any more than the concept of democracy should be dismissed when it is misappropriated by a dictatorship.

2.1.2.2 Criticism on Sustainable Development

Long before the sustainable development concept started being popularised, it was the Green movement that was trying to show how industrial expansion causes environmental damage. Just at the moment when the extent of environmental crisis produced a final argument for the Greens’ concept of ‘zero growth’, sustainable development was coined as a way-out of the problem, smoothing a conflict between the Greens and traditional economists.

In the Greens’ opinion, sustainable development is too mild in defining the degree of environmental protection required, and therefore it offers ‘governments and industry a means of embracing environmentalism without commitment’ (Jacobs, 1991:59).

The Greens also argue that 'it is economic growth which is the primary cause of environmental degradation; therefore the objective of policy should be - no growth' (Jacobs, 1991:53). However, zero growth does not take in account uneven distributional effects of economic activity in the world, and therefore it is not a helpful objective.

On the other side of the critics to sustainable development are the traditional economists. In their opinion, economic growth is considered to be the main value - *summum bonum* and *panacea* for all the problems including the environmental ones. Daly (1992b) labels this obsession with 'growthmania'. Obviously, the concept of 'zero growth', which is propagated by the Greens, is totally unacceptable for the traditional economists and is considered as a 'return to regulated caveman culture'.

Criticism on sustainable development, which comes from traditional economists, maintains that sustainable development necessarily implies a reduction of living standards (Jacobs, 1991). In traditional economist's view, the environmental protection involves falls in consumption, which brings a decrease in living standards. Standard of living is here often equated with disposable income, and the more money people have for spending (after allowing for inflation) they are considered to be better off.

This reasoning apparently takes into account only the private consumption. In this respect many other things that are collectively consumed (e.g. public services and environment) are not regarded as influential on the standard of living. And indeed, it is a collective consumption that influences quality of life, which together with a real disposable income forms a standard of living[3].

2.1.2.3 Quality of Life

Quality of Life (*QoL*) was established in the 1960s as a social indicator of the standard of living. The main reason for introducing this indicator was that, despite the rising prosperity and growth in the standard of living measured by economic indicators such as GNP (Gross National Product) per capita, groups of people continued to be dissatisfied with their social well-being. As it is elaborated by Smith

[3] The definition of 'standard of living' is taken from Jacobs, 1991:244

(1974), Nussbaum and Sen (1993), Sen (1999), and Massam et al. (2000), there is a need to move beyond economic indicators to define well-being and the quality of life on a variety of indicators relating to social, environmental, political and personal dimensions.

There is a tight link between sustainable development and *QoL*. In fact, the definition of sustainable development, which is used by the UK Government, encompasses the term of quality of life.[4] However, like sustainable development, *QoL* has not achieved a universally accepted definition. As Burton (1978) (quoted in Masnavi 1998:64) puts it, quality of life is an elusive concept which relates to something transcending the material concerns of everyday life. Factors such as culture, belief, religion, history etc. influence *QoL*, and that brings even more difficulties in reaching a consensus over either *QoL*'s definition or measurement.

Regarding *QoL*, researchers mainly agree that, for understanding of this concept, both 'objective approaches' and 'subjective analysis' are equally important since an objective condition can provoke myriad responses from different individuals as much as similar responses to different objective conditions can be obtained from different individuals. As Rogerson (1997) points out, when evaluating *QoL*, one has to consider both the attributes of the environment in which people are living and their own personal characteristics, because *QoL* relates to individuals, their preferences, attitudes and behaviour but also to the attributes of places in which they live their daily lives.

Quality of life is an all-encompassing concept that attempts to capture well-being. In order to incorporate *QoL*, traditional economists define all the components of standard of living as 'wants'. They assume that 'if something is good, that is, if it satisfies a want, then more of it is better- in economics you cannot have too much of a good thing' (Ekins et al. 1992:30). According to this definition, there is no end to our potential needs.

[4] In May 1999, the UK Government published *Sustainable development factsheets: A better quality of life, a strategy for sustainable development for the UK*. At the heart of sustainable development is the simple idea of ensuring **a better quality of life for everyone, now and for generations to come**.

In a modern society when marketing forces act in full power, people are often made to "need" certain products. This 'provoking of needs' is a basis of consumerism which can be summed up as 'a cluster of attitudes and habits that associate success, happiness, status and self-esteem primarily with the acquisition of a steadily rising income and access to high quality goods and services' (Carley and Christie, 2000). Nowadays, consumerism has developed to a 'traditional way of life: everything is reduced to a price and things which cannot be priced are often marginalized' (Carley and Spappens, 1998).

Beside traditional economics' views on standard of living, human needs and sustainable development, there is the Green economics (or ecological economics) approach. Ekins et al. (1992) describe Green economics as 'economics of enough'.

> Green economics is the economics of the real world - the world of work, human needs, the Earth's materials, and how they mesh together most harmoniously. It is primarily about "use-value", not "exchange-value" or money. It is about *quality*, not quantity for the sake of it. It is about *regeneration* - of individuals, communities and ecosystems - not about *accumulation*, of either money or material.
>
> ('What is Green Economics?', URL: http://www.greeneconomics.net/what2f.htm)

What makes a great difference between traditional economics and green economics is that green economics draws a distinction between wants and needs. By making this distinction, green economists stress that welfare creation is not simply the increasing satisfaction of an expanding number of wants. One way of satisfying wants is to fulfil them all, but apart from that we can also reach satisfaction by stopping wanting all of them.

When addressing human needs, it is important to refer to *Human Scale Development Theory* by one of the main advocates of 'ecological economics' - Max-Neef[5].

[5] Manfred Max-Neef is the Founder and Executive Director of the Development Alternatives Centre (CEPAUR), in Santiago, Chile. He is the author of many books, essays and papers on alternative economic policies. His main contribution is in creating the principles of "Barefoot Economics" and Theory of Human Scale Development in 1986.

The main postulate of Human Scale Development is that 'development is about people and not about objects' (Max-Neef, 1991). If development is to serve people, Max-Neef argues that it must aim not only to raise material standards but also to improve the quality of people's lives, the latter being ultimately dependent on the possibilities people have to adequately satisfy their *fundamental* rather than *basic* human needs. Fundamental human needs, unlike wants, are finite, few and classifiable; they are the same in all cultures and have been virtually the same throughout history, changing only in 'the way or the means by which they are satisfied' (Max-Neef, 1991).

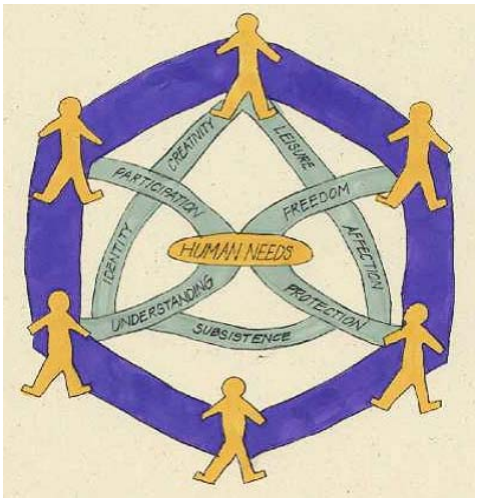


Figure 2-2: Fundamental human needs according to Max-Neef (1991). Online available URL: http://www.holocene.net/sustainability/human_needs.htm

Unlike Maslow[6] who proposed a hierarchy of human needs, Max-Neef lists nine fundamental human needs (subsistence, protection, affection, understanding, participation, idleness, creation, identity and freedom) and understands them as a system with no hierarchies apart from the sole exception of the need for subsistence (or to remain alive), which he accepts has priority over others.

[6] Abraham Maslow's Hierarchical Theory of Human Needs (1960) in which the basic needs are at the bottom, and the needs concerned with man's highest potential are at the top of the pyramid is usually the starting point in studying human needs. At the bottom of this pyramid, there are Physiological Needs, followed by Safety Needs, Belonging Needs, Esteem Needs and the upper point represents the need for Self-actualisation. According to Maslow's theory each level of the pyramid is dependent on the previous level.

In order to fulfil our needs we use “satisfiers”, which depend on place and time in which they appear. It is also important to say that despite their name, not all satisfiers satisfy needs or by satisfying one need may induce other needs. Satisfiers cannot be simplified to available economic goods. Because satisfiers have various characteristics, Max-Neef classifies them into five types, four of which are unsatisfactory and are imposed from above or from outside (violators or destroyers, pseudo-satisfiers, inhibiting satisfiers and singular satisfiers). It is only a fifth - synergic type of satisfier that satisfies not only one need, but also contributes to the fulfilment of other needs. This type of satisfiers works most effectively in a “bottom up” approach, which assumes that local people have a lot to contribute to the development process. Max-Neef (in Reid, 1995:87) concludes that needs begin to be met from the moment true (liberating and not imposed or excessively materialistic) development starts.

When addressing the issue of *QoL*, the same author states that *QoL* combines the concepts of efficiency and sufficiency. As a consequence of a consumerism-driven society, people have developed a psychological attitude that more and more is better and when having started to lose their sense of what is ‘enough’, ‘they stop ‘being’ and become ‘having’ robots, which is pathological and impacts on quality of life’ (Max-Neef, 1998).

For green economists, all human activity including consumerism is to be guided by ethical considerations, although ‘ethical norms will change in response to economic, social, and ecological influences’ (Ekins et al., 1992). The economy is regarded only as one of the four dimensions of welfare which influences, and is also influenced by, three other dimensions: society, ecology and ethics. From what green economics is advocating for, one can notice an overlapping and strong consistency between the principles of green economics and sustainable development.

The recognition of ecological constraints automatically initiates the debate on the meaning of sustainability, alternative approaches for societies and individuals to “live within the means”, and most importantly, stimulates thinking on real human needs and the meaning of ‘quality of life’. These issues ‘cannot be addressed through legislation but must be dealt with through each individual’s decision to seek

sustainable lifestyle' (Flint, 2000). As Hack notices, one of the most underdeveloped of all natural resources is the power of individuals to shape the course of history. In achieving sustainability, the interest and responsibility of all parties involved cannot be denied. Yet the power of individuals, which is effectuated through their simply daily choices, can make a difference regardless of scale (ibid.). And to conclude with words of Max-Neef:

> We want to change the world, but we are confronted with a great paradox. At this stage of my life, I have reached the conclusion that I lack the power to change the world or any significant part of it. I only have the power to change myself. And the fascinating thing is that if I decide to change myself, there is no police force in the world that can prevent me from doing so. It is just my decision and if I want to do it, I can do it. Now, the point is that if I change myself, something may happen as a consequence that may lead to a change of the world. But we are afraid of changing ourselves. It is always easier to try to change others.
>
> ('Human Scale Development', 1991:113)

2.1.3 How does Sustainability address Residential Areas

> The overall human settlement objective is to improve the social, economic and environmental quality of human settlements and the living and working environments of all people.
>
> (Agenda 21, 1992: Chapter 7)

Sustainability requires a paradigm shift in our thinking, the one which will integrate technical, economic, social, and political factors holistically with aim to produce viable, sustainable urban systems. According to Flint (2002) 'these systems will find expression in regions (urban zones and supporting hinterlands) which link industries, residential areas, energy production, agriculture, transportation, and other sectors in ways that minimize the throughput of resources and the waste of materials and energy'. The problem, which is recognised by Agenda 21 (Chapter 7.1) is that 'in industrialized countries, the consumption patterns of cities are severely stressing the global ecosystem while settlements in the developing world need more raw material, energy, and economic development simply to overcome basic economic and social problems'.

Like in the case of wealthy countries, wealthy cities 'prosper by appropriating the carrying capacity of an area vastly larger than the spaces they (cities) physically occupy' (Rees, 1995b). As cities in the developed world have increased the share of service activities in their economic base, previously established industrial activities have often been exported, in some cases to the periphery of the urban region and in other cases to locations in the developing world (Center for Urban Policy Research, 2000:12).

Many cities tend to be large consumers of goods and services, while draining resources out of external regions they depend on. As a result of increasing consumption of resources, and growing dependencies on trade, the ecological impact ('ecological footprint) of cities extends beyond their geographical locations. To illustrate it with an example, the UK's International Institute of Environment and Development estimates that 'London's ecological footprint for food, forest products, and carbon assimilation to be 120 times the surface area of the city proper' (source: Rees, 1995b).

The idea of working towards sustainable cities suggests the need of a value system different from the one that predominates in the world today. An important issue is that sustainable development must be planned for and that market forces alone cannot achieve the integration of environmental, social, cultural and economic concerns.

At national level, this integration means assessing trade-offs between different dimensions of sustainable development and dealing with choices. Although many sustainability issues are global or national in scope, we relate most directly to what is happening in places where we live, and the majority of us lives in residential areas 'in which most of our wealth is tied and where we spend most of our income' (UDAL, 2000:1).

Urban sustainability can be marked by two polar extremes: 1) *a global-scale big players' version* in which sustainability is synonymous to sustainable development and its management, embracing the agenda of the market, top-down planning, and scientific, technological, and/or design-based solutions (Pugh, 1996), and 2) *a local-scale version* in which sustainability is synonymous to sustainable livelihoods and in which the local context can lead to different and locally contingent perspectives on the meaning of and conditions for sustainability and the means to achieve it (Sachs,1993; Douglass and Zoghlin,1994; Drakakis-Smith,1995).

In the light of these antagonistic definitions of sustainability, which bound a continuum that embraces the multiplicity of perspectives, there is a proposal for a definition of sustainability that focuses on sustaining lives and livelihoods rather than on the question of sustaining development (Center for Urban Policy Research, 2000:7).

The concept of sustainable lives and livelihoods, constructed through localities, is more sensitive to diverse contexts and it rejects the idea of universal solutions to local problems. This also means recognising localities as sources of diverse knowledge and practices that must be drawn upon in addressing questions of sustainability (Cline –Cole, 1998).

Understanding urban sustainability requires engaging with the particular kind of locality associated with urbanisation and the urban. A focus on the urban level

implies that urban localities induce certain challenges and opportunities for achieving sustainability. As a part of global sustainability, urban sustainability entails examining urbanisation within the context of dynamic and complex place-specific social, economic, political, and ecological processes producing urban growth.

Original concerns over modern urbanism arose in the context of 19th century urbanisation and industrialisation in Europe and North America when it was 'only Britain, North-West of Europe and the USA that had more than 25 percent of urban residents' (Pacione, 2001:67). Since that time, a world in which most people lived in rural areas has been transformed into a predominantly urban world. One-third of the world's population lived in urban areas in 1960. By 1999, that number had increased to 47 percent. The urban population continues to grow at a rapid pace and there is estimation that in year 2030, more than 60 percent of world population will live in urban areas (Peters et al., 2000). In countries like the United Kingdom, current circumstances are that almost 90 percent of the population is urban, and in the EU 80 percent of the population is urban. Urban populations are having and will continue to have a growing impact on the earth's environment through their increasing numbers and their rising per capita resource demands. Characteristics of urban places such as high population density, energy consumption, and agglomeration and scale economies have direct implications for the economy-environment relationship, and vice versa.

Urbanisation on a vast scale typically is associated with overwhelmingly negative environmental impacts. But large dense urban agglomerations also offer the opportunity to achieve scale economies in the provision of services such as water, sanitation, electricity, and transportation.

Some conventional notions on urban sustainability (e.g., the EcoCity approach) view the city as a self-contained, bounded territorial unit and the sustainable city as the one that is self-sufficient and self-reliant. However, city cannot exist without its hinterland, and that hinterland can encompass the globe. Ignoring interdependencies among cities and their hinterland, overlooks questions about whether one locality is becoming "more sustainable" by making other places less sustainable, e.g., by

exporting waste or by maintaining levels of material consumption necessitating degenerative production in other locations (Lake, 2000).

Despite the differences between rural and urban areas, they are closely inter-related and each has much to offer the other. Whether people live in urban or rural areas, their livelihood and well-being depend on both. As it is stated in the Urban White Paper (DETR, 2000:14) 'improving the quality of urban life so that people want to stay in and return to central areas of our cities and major conurbations is important not just to the health of those areas, but it is also vital if we are to relieve the pressure for development in the countryside and preserve the essential qualities of rural communities'.

Discussion on urban sustainability initiates coming to terms with the effect of increasing levels of consumption on stimulating new urban forms as well as changing landscapes within urban places. The sheer variety of different urban forms is increasing throughout the world, with the advent of the mega-city, the extended urban region, the post-industrial city, and other forms (Center for Urban Policy Research, 2000:12-13). It is also that rural areas throughout the world are becoming "urban" in the sense of mimicking occupations, income, consumption, and lifestyles characteristics of urban areas (Kelly, 1999; McGee, 1994).

Wherever they are, cities are pulse points of nations and sources of vibrant energy: art, culture, business, and government. At the same time, cities are increasingly a nexus for environmental challenges. As Rudlin and Dodd (2003) point out 'it can be argued that while cities may be environmentally damaging and therefore influencing the quality of life of citizens, they are a fact of life and must be reformed'.

As it is stated in the European Sustainable City Report[7] the challenge of urban sustainability is 'to solve both the problems experienced within cities and the problems caused by cities, recognising that cities themselves provide many potential solutions'. The same Report also states that social and economic needs of urban residents should be met while respecting local, regional and global natural systems,

[7] "The European Sustainable City Report" has been prepared by an independent body, the Urban Expert Group. This document was reached via electronic source URL: http://europa.eu.int /comm/ environment/urban/home_en.htm [20 February 03]

through solving problems locally where possible, rather than shifting them to other spatial locations or passing them on to the future.

Regardless whether people are living in towns, cities, suburbs or rural areas, they want the same things: jobs, a healthy economy, decent houses, good public services and an attractive and safe environment (DETR, 2000:13). These goals are also basic conceptions of economic and ecological sustainability.

A large number and variety of actors engage in policymaking that affects economic and ecological sustainability at different spatial scales. As a consequence, different groups and organizations hold different knowledge about processes related to economic and ecological sustainability. The compartmentalization of knowledge is only partial, however, as various groups work across scales to achieve their ends (Cline-Cole, 1998). Government plays a key part in establishing a vision for the future of our residential areas. As stated in the Urban White Paper (DETR, 2000:20), 'Government's vision must recognise the complexity of our urban areas and the dynamic nature of our towns and cities. It must address the key issues that have shaped their recent past in order to ensure a healthy and sustainable future which complements and reinforces the revival in the countryside'.

2.1.4 Views on Ideal Urban Forms

> A map of the World that does not include Utopia is not worth even glancing at.
>
> Oscar Wilde

Before addressing ideal urban forms, it is inevitable to look back to the roots of utopian thought. What Sir Thomas More described as the imaginary island in his 16th century book *Utopia*, is often referred to as a place of ideal perfection, 'especially in laws, government, and social conditions' (Masnavi, 1998:33). As defined in The Green Dictionary, utopia is 'an imaginary place with perfect social and political system; ideally perfect place or state of things…, best seen as model of possibility, as expression of potential' (Johnson, 1991:326).

There is a difference between the urban form envisaged by Utopians and the Utopias envisaged by planners and architects. This difference is pointed out by Lewis (1987:109) who argues that 'the interface between the two deserves the closest examination, both on theoretical grounds and because it contains these Utopian concepts which have had the greatest influence upon the buildings and towns of the real world'.

Utopias are but one of many visionary constructs which affect discussions, negotiations - and eventually result in our urban settings. As Reiner (2003) points out, 'among others are ideologies such as notions of efficiency, social justice, a particular aesthetic' and so on.

There is a long history of the decentrists' and centrists' views on urban form, albeit, like Breheny (1996:14) notices, 'that the motives for their promotion in the past have been somewhat different from those driving the current debate'.

The beginning of the debate on urban form between the two camps reflected utopian ideas 'of protest against society as it is' (Spate, 1987:25), and 'negating reality by offering a preferable alternative as fiction' (Stephens, 1987:8).

A 'guide through the maze' of twentieth century city planning in Europe and North America starts as a reaction to the squalor of the towns and cities imposed by the Industrial Revolution. The first initiatives or reactions to the problem of deterioration

of life due to disease and congestion of the industrial cities spawned a conscious alternative to centripetal urbanisation.

In reviewing the history of discussion about appropriate urban forms, the main reference sources are Fishman's *Urban Utopias in the Twentieth Century* (1977) and Hall's *Cities of Tomorrow* (1988) (see: Breheny, 1996:15).

Broadly speaking, in the twentieth-century planning, it can be discerned just 'a few key proposals, which re-echo and recycle and reconnect, and each of these proposals comes from either one key individual or small groups of such' (Hall, 1988:7).

Indeed, the views on ideal urban forms coming from individuals such as Howard, Wright and Le Corbusier, who were representatives of the most important period in the history of the debate about urban form (1898-1935), have not been pushed aside by more up-to-date solutions. Although their plans differ, all three planner's inspiration stemmed from their recognition that there needed to be a contentious effort to improve the quality of the urban environment.

> And, while the old order endured, Howard, Wright, and Le Corbusier refused to adapt themselves to what planning commissions, bankers, politicians, and all the other authorities of their time believed to be desirable and attainable. They consistently rejected the idea that a planner's imagination must work within the system. Instead, they regarded the physical structure of the cities in which they lived, and the economic structure of the society in which they worked, as temporary aberrations which mankind would soon overcome. The three planners looked beyond their own troubled time to a new age each believed was imminent, a new age each labored to define and build.
>
> (Fishman, 1977:5-6)

Those three theorists of urbanism shaped out the boundaries of debate, where on two extremes were the standpoints of Frank Lloyd Wright with his extremely decentralised proposal, and Le Corbusier as arch-centrist. Despite their extreme differences, both views are reflected on the work of Ebenezer Howard, in terms of his ideas published for the first time in 1898 under the title *To-morrow: A Peaceful Path to Real Reform,* and their attempted practical application (Breheny, 1996:15).

Being influenced by the social ideals of the radicals in the 1870s and 1880s (e.g. Edward Bellamy and Peter Kropotkin), Howard formed his vision for 'solving, or at least ameliorating, the problem of Victorian city by exporting a goodly proportion of

its people and its jobs to new, self-contained constellations of new towns built in open countryside, far from slums and the smoke – and, most importantly, from the overblown land values – of the giant city' (Hall, 1988:8). Between 1889 and 1892 Howard created the basic plan for his ideal community, which he envisaged as Garden City with the fundamental principle that 'radical hopes for a cooperative civilization could be fulfilled only in small communities embedded in decentralized society' (Fishman, 1977:37). In his concept of Garden City, Howard presents 'a new pattern of city development, that of self-contained and self-sufficient but linked centres, separated by agricultural land that supports them and provides the opportunity of a symbiosis with the natural environment' (Frey, 1999:49). This model rejects the suburb as unacceptable compromise (ibid.:49). The garden city would have a fixed limit – Howard suggested 58,000 people in the Central City of the 'city cluster' and, 32,000 people, living on 1,000 acres of land in the Garden city, which is surrounded by a much larger area of permanent green belt – Howard proposed 5,000 acres – containing not merely farms, but also all kinds of urban institutions (e.g. reformatories and convalescent homes), that could benefit from a rural location (see: Frey, 1999:49; Hall, 1988:93). According to Howard and his Social City vision, once the garden city would reach its planned limit, another would be started a short distance away and, 'over time, there would develop a vast planned agglomeration, extending almost without limit; within it, each garden city would offer a wide range of jobs and services, but each would also be connected to the others by a rapid transit system, thus providing all the economic and social opportunities of the giant city' (Hall, 1988:93).

Although conceived more than a century ago, Howard's concept responds to many of the modern issues raised about the sustainability of urban areas, in views such as: decentralisation of the core city's functions to generate all needed local services and facilities in each Garden City, and in the farmland surrounding it; decentralisation of responsibility and participation of the communities in the process of shaping and building their own cities according to their needs and aspirations; a symbiotic relationship with the countryside; a considerable degree of open-endedness and flexibility of development; and virtually limitless growth of the pattern to any metropolitan size (Frey, 1999:49-50).

The critics of Howard usually misinterpreted almost everything he stood for. He was a social visionary whose garden cities were meant to be 'the vehicles for a progressive reconstruction of capitalist society into an infinity of co-operative commonwealths' and not 'a physical planner' who wanted to consign people to small isolated towns in the deep countryside as the critics' accusations would say (see Hall, 1988:87). Regarding the significance of Howard's ideas, two points should be made: first, Howard's ideas have been turned into a new profession of town planning, and second, the misinterpretation of his original city cluster model was greatly influential in the development of low density suburban areas and in the New Towns movement which emerged in Britain after World War II (see: Masnavi, 1998, Wannop, 1999).

Wright and Le Corbusier represented antidotes to Howard's influential views. The Garden City seems to hold a middle ground when compared to the extremes of La Ville Radieuse and Broadacre City. Despite commentators like Jane Jacobs who portrayed Howard as the 'decentrist villain', his Garden City model, in fact, had the characteristics of decentralised concentration 'that would overcome the spatial limitations of the historic city, even that of the boundless expansion and random diffusion of the conurbation' (Mumford, 1984, in Frey 1999:49).

Exhibited for the first time in the 1935, Frank Lloyd Wright's model of Broadacre, his ideal city, advocated decentralisation through which, Wright hoped, 'the social value he prized most highly – individuality would be preserved' (Masnavi, 1998:48). The Jeffersonian tradition in American thought, which 'celebrated the self-reliant rural proprietor', inspired Wright in his vision that all citizens and their family should have the permission 'to live their own lives in their own ground' (Fishman, 1977:94). The idea behind Broadacre was to take decentralisation beyond the small community (Howard's ideal) to the individual family home. In his ideal city, Wright made the family the central institution of his new society.

Like so many Americans of his time, Wright was fascinated by the use of the automobile and its potential, being at the same time blind to all of its limitations. With the use of the motor car and electricity, Wright saw the enabling force for cities to spread into the countryside, giving the opportunity to people to 'reclaim their native birthright', i.e. to be emancipated from ties with the city (Breheny, 1996:17).

This ‘emancipation’ presumed each citizen would have ‘all forms of production, distribution, self-improvement, enjoyment within the radius of, say, ten to twenty miles of his own home’ (Wright, 1945, quoted in Hall, 1988:288).

In contrast to Howard, who promoted the power of cooperation to change the world, Wright relied instead on an “appeal to imagination” (Fishman, 1977:95). His Broadacres vision also relied on planning. However, like Breheny (1996:17) notices: ‘despite Wright being correct in anticipating the popularity of his decentralised vision, he was wrong that it would be planned’.

As opposite extreme to Wright’s views on ideal urban form, one can certainly distinguish Le Corbusier’s arch-centrist standpoint. Being very much a maverick like Howard and Wright in tackling the same problems of the Victorian city, Le Corbusier proposed a new town planning approach in the 1920s, which was based on his distinct brand of functionalism. He developed his principles of planning most fully in *La Ville Contemporaine* (1922) and *La Ville Radieuse* (1933).

Le Corbusier’s Contemporary City was a twentieth century incarnation of the utopia Saint-Simon envisaged in the nineteenth century. As Fishman (1977:195) says: ‘in the Contemporary City the structures devoted to government had literally withered away. They stood on the outskirts of the business centre, in the shadow of the great towers of administration. These towers were the headquarters of Le Corbusier’s elite of industrialists, scientists, and artists – the exact same three categories that constituted Saint-Simon’s *industriels*.’

Unlike Wright, Le Corbusier believed that the existing cities are not dense enough. The key paradox of ‘decongesting the centres of our cities by increasing their density’ he proposed to be resolved by building high on a small part of the total ground area (Le Corbusier, 1929).

Le Corbusier compared his task to that of a ‘scientist in his laboratory…constructing a rigorous theoretical principles of urbanism’ (Fishman, 1977:190). His idea of high tower blocks would increase open space and improve circulation, and that would all to be done by total clearance: the ‘urban surgery’, was taken up with such vigour across the world in the 1960s, and the outcomes of it were ‘at best questionable and at worst catastrophic’ (Hall, 1988:204).

Apart from critics on Le Corbusier's high-rises in terms of their failure to fulfil many of human needs, his zoning idea, and the separation of housing and commercial activities, is heavily criticised by the advocates of mixed-use developments, e.g. in the work of Jane Jacobs (1961).

In the course of the twentieth century, the views on ideal urban form continued to be developed either as being based on ideas of Howard, Wright, and Le Corbusier, or on the transformation and challenge of those ideas. Certainly, there have been other new ideas, among which are: Mumford's *cultural city*, Jane Jacob's *liveable city*, de Wofle's *Civilia,* Kevin Lynch's *Good City*, Christopher Alexander's *Biologic city*, Peter Calthorpe's *Ecologic Metropolis*, etc. However, as Breheny (1996:14) points out: 'in the post-1945 period, with the cities appearing to be rather less evil and the problems being increasingly of the 20th century origin, planning motives became more diverse, more specific and less visionary'.

The lack of visionary ideas emerged in particular after the 1960s, with the public losing its confidence in planners, followed by planners losing confidence in themselves, which opened a wider space for the rule of pragmatism (Breheny, 1996:13). Now that a great challenge – sustainable development – and a big solution – the compact city- have become the banner of much discussion on urban form, 'the old fractions have been re-formed and are presenting their cases with as much vigour as was the case sixty years ago' (ibid.: 29).

There is an argument that in countering sprawl with compact cities, there is no 'raise in the level of the game' between centrists and decentrists (see: Neuman, 2003). Deriving from John McPhee's *Level of the Game* (1969) and his observation how champion athletes were able to raise the level of their game, i.e. to improve their performance to whatever level necessary to win, in language of urban practitioners, rising of the level of the game denotes 'an occasion in which practitioner rises above and beyond the current level of practice to an entirely new level' (Neuman, 2003:26). Whether the compact city idea is progressive or is actually reverting back to an old game of centrists and decentrists, it can be denoted as one of the contemporary views on ideal urban form.

2.1.5 Compact form – Sustainable City?

> We need a vision that will drive the urban renaissance. We believe that cities should be well designed, be more compact and connected…allowing people to live, work and enjoy themselves at close quarters within a sustainable urban environment which is well integrated with public transport and adaptable to change.
>
> Lord Rogers of Riverside, in DETR (2000:48)

There is a strong link between urban form and sustainable development since nearly every facet of the sustainable development movement has its expression in the urban environment, but the link is neither simple nor straightforward (Jenks et al., 1996:5; Welbank, 1996:74).

Sustainability is a starting point for the debate about how to live. It calls for rethinking our relationship to the cultural construct we call "nature", to the earth, and to each other (Schama, 1995). In this sense sustainability refers to the way things ought to be, how we ought to live and relate to our environment. Therefore, it has a strong moral connotation and as such, with all moral arguments, it carries a danger of stepping into dogmatic thinking.

Like previously argued, there is no single accepted image of sustainability and indeed, this ‘fuzziness’ of the term contributes to its appeal, but on the other hand, there is not one way of putting sustainability into practice.

The compact city is a term, which is internationally used as the opposite of urban sprawl. Sprawl is perceived to be, and has been proven to be, a less sustainable form of living and compact city has been seen as an antidote to it (Neuman, 2003). The compact city is seen as ‘more energy efficient and less polluting because compact city dwellers live closer to shops and work, and can walk, bike, or take transit’ (ibid.:3). Apart from environmental benefits they are perceived to induce, the compact cities with high population densities as one of their major attributes, are argued to encourage social mix and people’s interaction.

The compact city idea highly resembles of traditional cities and is certainly influenced by the fact that many historic European towns and cities have ‘densely developed cores which are seen as ideal places to live and to work (mostly by those

coming to visit these places for a short time, not necessarily by their inhabitants)' (Frey, 1999:24).

With a reopening of the debate on urban form and looking for a sustainable solution, urban compaction has become 'the order of the day' that is driven by the sustainability imperative (Breheny, 1996:20).

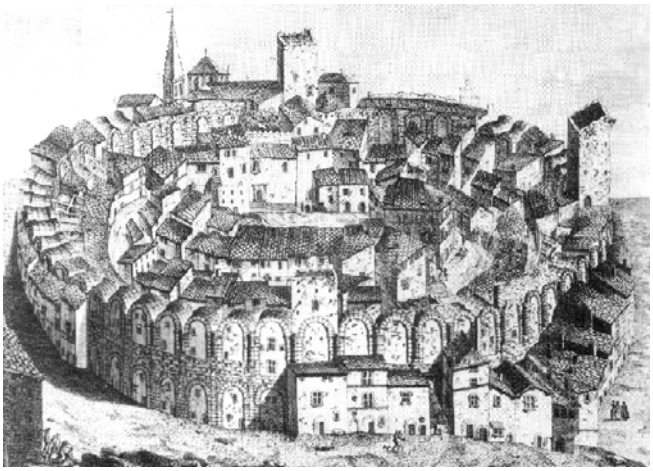


Figure 2-3: Personification of the compact city – The amphitheatre at Arles, as converted into fortified enclave in the Middle Ages and later. From an engraving after J.B. Guilbert (British Museum), source: Girouard (1985:36)

Figure 2-4: Lucca as an example of the compact city, source: URL: http//www.tuscanytraveller.com/Places/Lucca_Place.htm [27 March 2003]

The Commission of the European Communities *Green Paper on the Urban Environment* (CEC, 1990), which puts forward objectives and directives towards a more sustainable urban environment, leads a strong advocacy of the compact city.

This advocacy is based on the aim to ‘avoid escaping the problems of the city, by extending its periphery; (to) solve its problems within existing boundaries’ (CEC, 1990:45).

Beside CEC (1990), the main proponents of the compact city include: Elkin et al. (1991); Engwicht (1992); Jacobs (1961); McLaren (1992); Newman and Kenworthy (1989); Owens and Rickaby (1992) and Sherlock (1991). Their support is based on claim that compact city has environmental and energy advantages and social benefits (see: Hillman, 1996:36-44; Thomas and Cousins, 1996:56).

There are many perceived benefits of the compact city over ‘urban sprawl’, which include: less car dependency thus lower emissions, reduced energy consumption, better public transport services, increased overall accessibility, a high degree of containment of urban development and the potential of social mix as a result of high population densities, the re-use of infrastructure and previously developed land, the rejuvenation of existing urban areas and consequently urban vitality, viability of mixed-uses, a higher quality of life, the preservation of green space, and the creation of a *milieu* for enhanced business and trading activities (Thomas and Cousins, 1996; Frey, 1999).

However, there is a debate about the very definition of a ‘compact city’, and in particular what policies need to be undertaken to achieve urban compaction, let alone whether these particular policies in fact do contribute to sustainability. According to Breheny (2001:39), ‘policies of urban compaction involve the promotion of urban regeneration, the revitalisation of town centres, restraint on development in rural areas, higher densities, mixed-use development, promotion of public transport and the concentration of urban development at public transport nodes’.

On the other hand, many of these policies are renounced as being uneconomic, and against the wishes of the general population who have characterised the twentieth century by a rejection of inner city living, and the invention of suburbia (see: Gordon and Richardson, 1997).

The first thing, which comes to one’s mind when mentioning ‘compact city’, is population density. Also, some other characteristics (i.e. mixed land uses and public transportation) are tightly connected to the compact city notion. Researchers tend to

use density alone as the defining variable (Burton, 2000). Planners and designers tend to use physical characteristics such as density, street widths, setbacks, lot size, sidewalks, porches, and so on (Duany, Plater-Zyberk, and Speck, 2001). Despite extensive literature on compact cities, surprisingly there exists no definition, or most often, the compact city is not rigorously defined (Neuman, 2003).

Although the discussions on compact cities are complex and not limited to population density only (see: Dantzig and Saaty, 1973; Breheny, 1992; Beatley, 1995; Jenks et al., 1996; Burton, 2000), population density emerges as the operational measure of the compact city. As Neuman (2003:24) points out: 'tendency to reduce a complex entity – the city – to one criterion – density – constrains research and biases action'. The same author continues that 'as a representation of urban form, average density does not address variations in density within aggregated areas, nor does it addresses differences in land use patterns, physical design, social characteristics, and ecological conditions among places with the same overall density'.

Compact forms reflect certain (dis)functionalities in respect to sustainability. Like previously mentioned, the positive side of compactness regard lower land consumption, cheaper infrastructure and utility costs, and resource protection (Burchell et al., 2002; Beatley, 2000; Daniels, 1999). On the negative side, 'developments may be compact themselves but still predominantly residential, still distant from the city centres; therefore necessitating daily travel for shopping, work, schools, and entertainment. Thus they contribute to sprawl although they are compact themselves' (Neuman, 2003:24).

The compact city paradox lies in the inverse relation of the sustainability of cities and their liveability (Wiersinga, 1997), or the advocacy of centralisation in the face of deep-seated counterurbanisation trends (Breheny, 1992:143). As Neuman (2003:12) points out, the paradox is that in order to have a city that is sustainable, functions and population must be concentrated at higher densities; yet there is an argument that for a city to be liveable, functions and population have to be dispersed, at lower densities. It should be emphasized that qualities referring to liveability can

exist in different urban forms (i.e. in suburbs as well as in the densest cities), and liveability is also a matter of personal preference.

The UK government largely adopts the view of the European Commission in support of compact cities and this causes tensions with 'the English ideal of suburban living' (Frey, 1999:24). British cities, which are territorially dispersed, lag some way behind the more enterprising, regionally devolved cities of Germany and France 'that are compact in territorial terms because of twin historical traditions of apartment living and outdoor public activity' (Scoffham and Vale, 1996:70). However, it would be wrong to catch up simply by translating some physical continental solutions to Britain.

In order to achieve qualities that compact city ideal represents, it is necessary to understand the ways people might want to live, or how they might be induced for a change in support of more sustainable practices. Ultimately, it is not the physical environment but an anti-urban attitude that is the obstruction to encompass a pattern of living that could be described as sustainable.

If we support the thesis that urban form is only sustainable if it is acceptable to its inhabitants, this means that the city needs to be adaptable to changing requirements of its population over the time (Scoffham and Marat-Mendes, 2000:97). One might say "different strokes for different folks"- some prefer suburbs, others prefer cities (Neuman, 2003:14). Anyhow, the policy desire and rush to make all places compact raises the questions of how compact those places should be, and can those places be liveable, reviewing the trend that people who have the means to do so have long been voting for and moving from the central city to the outskirts and that the housing market has deemed lower density places outside of cities more desirable (ibid.:13).

In answering the question whether the compact city is sustainable, it is not possible to move forward if the existing modes of thinking about, acting on, and living in the city are applied. Actually, instead of asking a question whether compact urban form is sustainable (see: Jenks et al., 1996), the question should be 'whether the processes of building cities, and the processes of living, consuming, and producing in cities, are sustainable' (Neuman, 2003:26).

Form should be regarded as both the structure that shapes processes and the structure that emerges from processes. It is argued that form is not measurable in terms of sustainability because the form is a snapshot of process – a static condition at any point of time (Neuman, 2003:27). Concluding in words of Kostof (1992:305) 'if the city is to survive, process must have the final word. In the end, urban truth is in the flow.'

2.1.6 Key Indicators and Target Values on Sustainable Urban Development

From the previous discussion on compact cities and urban sustainability, and continuing with the viewpoints of New Urbanists and Urban villages' advocates, it is possible to substantiate certain number of key indicators and measures that these groups suggest for sustainable types of settlements.

Regarding the relevance and influence of the New Urbanism movement in the USA and Urban Villages programme in the UK, as well as their wider application to sustainable urban neighbourhoods, the concepts of these groups will here be reviewed.

2.1.6.1 The New Urbanism

New Urbanism is the most talked about trend in planning and community design in the last decade, which 'strives for the bigger picture, addressing issues of central city-decline, sprawl, and separation by race and income as one interrelated community-building challenge' (Leccese and McCormick, 2000:5).

Similarly to compact city movement, the New Urbanism is a reaction to sprawl. A growing number of architects, planners and developers, the New Urbanism is based on the belief that a return to traditional neighbourhood patterns is essential to restoring functional, sustainable communities. It is a set of development practices to create more attractive and efficient communities, which can significantly improve access and reduce per capita automobile travel (see: TDM Encyclopedia).

The New Urbanism trend goes by other names, e.g. *Neotraditional Design*, *Traditional Neighborhood Development*, *Location Efficient Development*, and *Transit Oriented Development.*

Borrowing from urban design concepts throughout history, the New Urbanism does not merely replicate old communities. Successful New Urbanism performs a difficult balancing act by 'maintaining the integrity of a walkable, human-scale neighbourhood while offering the modern residential and commercial "product" to compete conventional suburban development' (Steuteville, 2000).

The heart of the New Urbanism is in the design of neighbourhoods, which can be described by the key principles as defined by Duany and Plater-Zyberk (1991) and Calthorpe (1993):

- Approximate size of neighbourhood is 80 ha, with distance from edge to centre of about 600m or 10 minutes' walk, and population between 3,000 and 6,000.

- The neighbourhood has a discernible centre where different modes of transportation convene. This neighbourhood node can be a green space or a landmark building.

- A central area operates as the focus of the community activities, with a public transport stop, shops, restaurants, services, some small businesses, a community, a local library and other facilities; towards the edge of the core area there may also be a primary school, which is close enough so that most children can walk from their home.

- There is a fine grain of different land uses: in an urban neighbourhood two-thirds of the area would be housing, one-third commercial and workplaces. Residential area may include a mix of small lot single-family homes with ancillary units (30 dwelling units per hectare), townhouses (37.5 dwelling units per hectare) and apartments (62.5 dwelling units per hectare) combined to meet an average density requirement of 45 dwelling units per hectare.

- Residential development in the central area would be in the form of high-density low-rise apartments or town houses, beyond that in the form of lower-density

terraces or row houses, all within 10 minutes' walk of the centre and a few minutes' walk only from a local playground.

- The neighbourhood is organised to be self-governing. A formal association debates and decides matters of maintenance, security and physical change. Taxation is the responsibility of the larger community.

Although New Urbanism projects are mostly known as 'master planned communities', New Urbanism features can be designed into new neighbourhoods or implemented incrementally in existing neighbourhoods. It usually requires changes to street design standards, and to zoning laws to allow higher densities and mixed land use. New Urbanism design features are appropriate in any urban or suburban area, particularly those experiencing high levels of growth and problems associated with housing unaffordability and sprawl. They are implemented primarily by regional and local governments, and developers.

The first new urbanism town was Seaside, Florida, which was initiated back in 1981 on 80 acres of Panhandle coastline. Since Seaside gained recognition, other towns have been designed according to the New Urbanism principles: Harbor Town in Memphis, Tennessee; Kentlands in Gaithersburg, Maryland. Also, New Urbanism principles have been build in historic cities and towns in the USA, including Crewford Square in Pittsburgh, Pleasant View Gardens in Baltimore, and the downtown of Port Royal, South Carolina (see: Steuteville, 2000).

2.1.6.2 Urban Villages

The urban village idea was developed by the Urban Villages Group as a solution to the problem of poor quality design and build of new dwellings and lack of regard for the environment and social facilities for the new communities. Increasing interest in the concept of sustainable environment and community support with good design as key constituents of new building led to the reconstruction of the Group as the Urban Villages Forum with its criteria for the endorsement of developments as urban villages (see: Urban Villages Forum, 1992).

An urban village is a concept of a settlement, which is 'small enough to create a community in the truest sense of the word – a group of people who support each

other, but big enough to maintain a reasonable cross section of facilities' (Urban Villages Forum, 1998). Echoing many earlier movements working for different kinds of environmental improvement, the urban villages concept also sets out its own answer to unsatisfactory urban conditions.

At first glance, urban village is the term that might seem an oxymoron because the two words – *urban* and *village* - are filled with opposing emotions, reflecting our feelings about each environment. However, the phrase drew attention and praise because people want to feel both sensations (see: Sucher, 1994).

An urban village is a settlement created on greenfield or derelict land where no communities currently exist, or within existing development, by incremental change and progressive redevelopment. Its features are:

- High density – 75 to125 people per hectare, with the area size of approximately 40 hectares (600m by 600m) or 10 minutes to walk across, and population between 3,000 and 5,000. Small enough to enable people to recognize each other and to encourage neighbourliness.

- Mixed use within buildings, e.g. shops below, residents above. Full range of types and sizes of buildings, where higher densities are achieved towards the centre of the village. Housing types: flats, retirement homes, buildings suitable for work from home, student housing etc. Mixed tenure for both residential and business accommodation. 1:1 ratio between jobs and residents.

- Facilities: daily shopping, basic health, primary schools, some recreational and cultural facilities, employment, greenspace that is increasing towards periphery of the urban village. Facilities which are to be used by other communities should be sited on squares, boulevards or on the edge of the urban village.

- Pedestrian friendly environment. Walking is encouraged through layout of streets and buildings. Catering for cars without encouraging car use.

Each urban village is planned and developed through a Master Plan, backed by a series of codes, and an environment action plan covering how the environmental impact of the village is to be managed and minimised. Residents and users need to be supportive of their urban village. Their opinion is invaluable on: mix of uses;

layout of the village; conservation of existing features; facilities/ amenities to be provided; and how the village will relate to the surrounding area.

The UK Government's 1998 policy statement on housing refers to urban villages as an option for the future specifically mentioning the Millennium Village at Greenwich. Other examples of urban villages in the UK are: Ancoats and Hulme in Manchester; West Silvertown in London; and Crown Street in Glasgow (see: Urban Villages Forum, 1998).

From the key concepts set up by the Compact City, New Urbanism, and Urban Villages promoters, it is possible to draw a summary of the major characteristics they acknowledge as those of sustainable environments:

1) There is an emphasis on sustainable neighbourhoods with size of 500m to 600m from the edge to centre, or 10 minutes to walk across the neighbourhood.

2) High densities, which support full range of types and sizes of buildings: single-family homes, townhouses, and apartments. There is an emphasis on mixed-uses, mixed tenure, and open spaces. As the density is increased to the proposed level of 35-60 dwellings/ha, the land-intake diminishes rapidly: more people are close enough to communal facilities to walk, there is a reduction of the need to travel, and reduction of the waste of land (see: Urban Task Force, 1999:60).

3) Well-organised public transport system, which is supported by higher residential densities. Possibility to walk and use efficient public transport instead of private car dependency.

4) Provision of local services and facilities, e.g. daily shopping; basic health and educational facilities; some recreational and cultural facilities; and employment. Local facilities enable better access for the less mobile (e.g. older population or those who don't use a private car).

5) Community involvement in decision-making regarding their residential environment (e.g. mix of uses; conservation of existing features; provision of certain facilities/ amenities; links to other residential areas).

2.2 Residential Areas seen through Residential Preferences

The appearance of our residential areas and the overall physical patterns of these areas are the product of the complex interaction between natural growth, the impact of changing transport, people's preferences and planning (Urban White Paper, 2000). The quality of people's living environment has a direct impact on their physical, mental and emotional health. Therefore, places can either be harsh and impersonal enhancing the feel of discomfort with its residents, or they can encourage people to feel at ease and foster a sense of community for its residents. In line with the approach of the *Urban White Paper* (DETR, 2000), which points out that people must come first, their residential preferences are seen as the key factor which affects the quality of life and sustainable living.

2.2.1 Urban or Suburban Life?

No matter where people live (towns, cities, suburbs or rural areas), they virtually aim for the same things: jobs, a healthy economy, decent houses, good public services and an attractive and safe environment (see: Urban White Paper, 2000:13). It is of great importance to know what people look for in an ideal place to live and where people can come closest to finding a place with these desirable characteristics (Seo, 2002). Also, from the dynamic point of view, the places in which people live have to be adaptable to the changes they require.

Today, it is sustainability which drives the new planning agenda, and in that respect urban compaction is a tall order. In turn, a major feature of sustainable development is the need for community involvement in decisions that will affect their lives.

Despite all the publicity for compact cities, the evidence for the UK, suggests that the process of population diffusion still continues. This trend implies that strict containment policies are likely to be very unpopular within the UK context especially with the continuing anti-urban movement and concerns about the effects of so-called 'town cramming' or 'urban intensification' (Breheny, 1992; 1996).

The deep-rooted anti-urban sentiments in the British public remain strong as ever and according to studies done for the Urban Task Force and DETR, such sentiments are driven by the three main elements: 1) Residential preference of suburban house types in suburban (or preferably rural) locations; 2) Migration patterns and the phenomena of *counterurbanisation*, and 3) Push and pull factors or the reasons why people move between areas (URBED, MORI and SPS, 1999).

In dealing with the problem of decline in English towns and cities, the UK Department of the Environment, Transport and the Regions (DETR) has commissioned in the 1998 the Urban Task Force under Lord Rogers to recommend practical solutions to bring people back into urban neighbourhoods. The Urban Task Force recognised that in comparison to their Continental counterparts, English cities have shown the diminishing quality of life for a very long time.

The public's loss of confidence in planners to achieve specific development objectives in urban areas has existed for more than 20 years. Firstly, because of the development mistakes of the 1960s and 1970s, and then because of the dominance of laissez-faire economic policies which characterised the 1980s when the planning system was accused of 'being able to do little more than tinker with the market', it is only now that we start to recognise that our towns and cities have suffered from a lack of strategic planning and the positive action that needs to follow from it (Urban Task Force, 1999:192; Breheny, 1996:21).

In broad overview, the urban population in the UK has stayed relatively stable throughout most of the 20th century. However, this broad overview hides a much more complex story of the loss of population from larger urban settlements. In Britain since the 1960s, there has been official recognition of the existence of an inner city problem expressed by the concentration of deprived or disadvantaged people in inner city residential areas while those who could have exercised their choice were leaving the city. As the Urban Task Force (1999:34) points out 'outward migration, fuelled by housing and economic policies spanning most of this century, has seen significant transfers of population from the city centre cores to outer suburban rings, and to smaller towns within a widening commuter hinterland'.

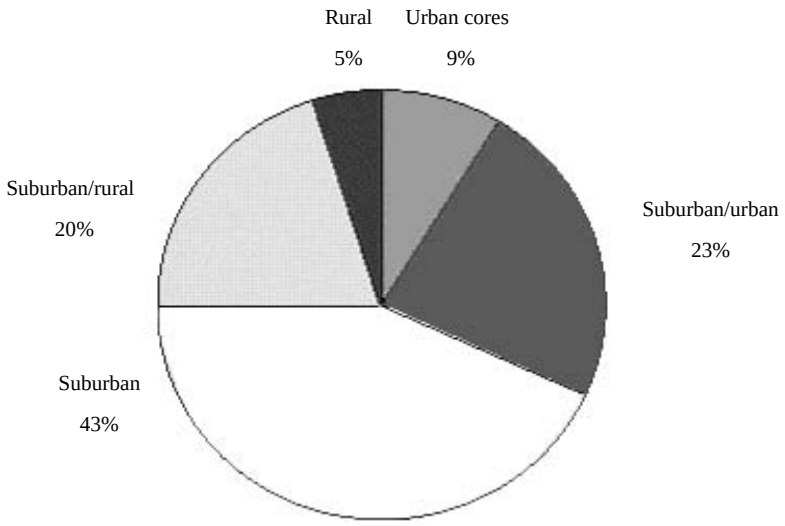


Figure 2-5: Percent of population by urban, suburban and rural areas based on analysis from Living in Urban England: Attitudes and Aspirations, DETR, 2000.
(source: Urban White Paper, 2000: 17)

On the other hand, it is also important to acknowledge that there are certain niches that researchers found to be developing within a fragmenting housing market that the sustainable city lobby might find encouraging (ESRC Press Release, 2001). In the last few years, a certain number of cities in the UK (e.g. Leeds, Newcastle, Manchester, Glasgow) could register the population growth in their urban centres, which has been due to an influx of new residents attracted by the 'competitive package of goods' offered by both homes and neighbourhoods in the city (Urban Task Force, 1999:35).

In Glasgow, for example, the population loss has slowed down from the mid-1980s, and the central city areas actually gained a number of residents as housing schemes were built, or unused warehouses and office buildings were adapted for residential use. Culture-led urban regeneration has led to a rejection of older industrial images of the city, and the establishment of a more positive image that attracts people to live in it (Seo, 2002). However, it is important to stress that although there has been a gain in population in certain areas of Glasgow (e.g. Merchant City), according to the 2001 Census data, the city overall is still facing a population loss.

As Webster and Senior point out, 'all levels of political decision making in the UK are supporting the notion of the dense city with mixed-use neighbourhoods, which

will significantly contribute to emissions and energy consumption reduction via shorter and possibly less frequent intra-urban car-based trips and will raise the vitality and viability of urban areas'. The Urban Task Force (1999) also argues that the multy-centred city of mixed uses which favours walking, cycling and public transport, is the most sustainable urban form.

Much of the debate about sustainable city policy implies that the property market will follow strategic policy guidance, with households assumingly being happy to live in more compact and diverse urban environments, developers being willing to build them, and financiers being prepared to invest in them. Yet, so far these assumptions have not necessarily been well founded. In fact, there is a little evidence to suggest that the majority of the better off will do anything other than continue to seek that security in the comfort of lower densities (see: Webster and Senior).

In a study conducted by URBED, MORI and SPS (1999:32), people were asked what they understood by terms mixed-use and density. While mixed-use wasn't really understood and it therefore carried few positive or negative connotations, most people (excluding Bristol and London groups) recognised density as a negative feature meaning there will be more people and houses crammed in an area and associated it with congestion, parking problems, and noisy neighbours.

A more recent research found that most home-movers remain conservative in their choice of traditional preference for semi-detached and detached houses, private garden and parking space (ESRC Press Release, 2001). Therefore, instead of having an un-substantiated belief that 'people will at best want to, and at worst have to, learn to live in more dense and heterogeneous neighbourhoods' (ibid.), one should seek a better understanding of citizens' aspirations, preferences and trade-offs.

People prioritise the quality of life aspirations such as: areas with low crime, good healthcare facilities, low levels of pollution, low cost of living, good shopping and good race relations. These aspirations are not particularly anti-urban because, although urban areas tend to have higher crime levels and pollution, they may also have a lower cost of living, and better facilities (URBED, MORI and SPS, 1999:6).

In the mass market view (which is generally regarded as the young families' view), there is an anti-urban attitude, but this tells us very little about the views of so-called

'niche markets' (e.g. households without children which are three in every four households, and more than half of those are below retirement age) showing the potential to be attracted back to urban areas (ibid.). This becomes even more important knowing that the number of households in the UK grows at much a higher rate than the population, and among households the biggest increase (some 70%) is in the number of single-person households (DETR, 2000).

2.2.1.1 Family life-cycle approach to residential mobility

People's propensity towards urban living (either as their wish to remain city residents or to reconsider moving back to it from suburbs) is often analysed through the typical family life-cycle. Traditionally, in empirical analyses, residential choice (Deurloo et al, 1987) and residential mobility (Clark and Withers, 1999; Clark et al., 1986) have been linked to stages in the family life-cycle. Life-cycle stages involve change of people's affluence, job changes, moving from renting to owning and from being single to starting a family. However, changes in households are probably the most important reason why families move (van der Vlist et al., 2002). As Troy (1996:159) points out 'the typical family life-cycle is seen as one in which a couple sets up a home together, often in rented, multi-dwelling accommodation, until the first child is born when they move out to a house which they have usually bought in the suburbs'. As noted by the Urban Task Force (1999:35), for many people, the crunch comes with having children when an urban environment, previously perceived as diverse and stimulating, starts to appear unsafe. Schools and health services become more important, which means that in order to persuading more people in this stage to stay in the city, 'it should be looked beyond the design, planning and building of the urban environment at the role played by health, education, security and social services, amongst others' (ibid.: 36). However, some other researchers (see: Shlay, 1985 in URBED, MORI and SPS, 1999:5) suggest that life changes which tend to prompt a move away from urban areas and towards the sort of area and housing that has become associated with middle-class family life are driven more by aspiration for this type of lifestyle than by the attractions of a particular environment.

Just as it is important to find the ways for persuading people not to leave the city, it is important to encourage those who have already moved out to suburbs to return to the

city. Following the sequential life-cycle approach, it is hypothesised that once children have left the parental home, the household occupies a house which is too large for it. As pointed out by Troy (1996:159), the further assumption is made that when household members retire they will have a reduced need for housing and when one partner dies the need will again be reduced. However, a direct correlation between smaller households and smaller living spaces cannot be established.

The simple assumption that, because the children have left home the remaining household does not need so much space, ignores the way households actually use the space. Childless or empty-nester households will want high quality living accommodation and space for return visits by the children, grandchildren, friends and relatives and miscellaneous activities in the spare time, which increases after the retirement age.

Regarding preferences of single households, especially those with economic choice, the Urban Task Force (1999:36) notices that they exhibit many of the same characteristics in terms of their preferred homes and neighbourhoods as larger households. In support of this, the research on preferences of single people shows that ‘singles like families wish to have internal and external space, to live in ‘good’ area, and they prefer houses to flats’ (Hooper et al., 1998 in URBED, MORI and SPS, 1999:5). However, the same researchers point out that ‘certain types of single person household, particularly but not exclusively the young, may be much more open to the idea of living in urban locations than other types of households’ (ibid.).

2.2.1.2 Trade-offs between urban and suburban living

Perhaps the strongest pointer towards a workable sustainable city policy comes from households’ dual preference for suburban living and for accessibility to urban services. The researchers found several causes for optimism in respect of the future growth of niche demand for sustainable living where many respondents would be open to inner city living if risks (relating to services, neighbours and environment) were reduced (ESRC Press Release, 2001). City living has many attractions, including easy access to modern shopping facilities or proximity to leisure activities, such as cinema and theatres. However, an interesting point from a study done by Seo (2002:118) is that *practical factors of everyday life* (e.g. “value for money”, “close to

work" and "central city location") are more important reasons for city residence than "the availability of cultural and leisure facilities", the latter usually considered by the city authorities as a catalyst for drawing in potential residents to the city. As the Urban Task Force (1999) points out, we need to look more closely at where trade-offs can be made in terms of the demand for private space and the benefits of the urban living environment.

> Towns and cities can offer a range of different types of urban living, to satisfy a very varied range of needs. They allow people different 'trade-offs': between, say, liveliness and calm; mix and uniformity; high and low density; private gardens and nearby parks. The people who can exercise choice do so. They move to the 'best' bits of town, to enjoy the possibilities that are offered. Our task is to widen that choice – so that many more people can have the opportunity to live in lively, successful, enjoyable towns, built to the standards and qualities of the best.
>
> Urban Task Force (1999:70)

Even suburbs, when they offer a high quality living environment with a mixture of uses, good local services and excellent public transport connections to the city centre, provide opportunities to strengthen and integrate our towns and cities. Such examples exist on the Continent (e.g. suburbs of Stockholm or the German town of Freiburg) while there is also another scenario coming from the US showing the extreme forms of social isolation of many suburbs, and city centres flourishing only behind security gates and private armed police, the future which is already in the making in some of the UK urban heartlands (Urban Task Force, 1999).

In the same report by the Urban Task Force, it is underlined that 'the neighbourhood is the basic building block of the town and city and the way in which we define relationships within a neighbourhood, and between neighbourhoods, determines whether or not the city functions efficiently and harmoniously'. Following this emphasis on the neighbourhood level, the Urban Task Force also concludes that major reconstructions of the built environment are most likely to meet with objections by local resistants while 'small scale intervention in suburban areas for example will mean that such areas can function as entities in their own right with places for people to meet, shop and enjoy leisure facilities' (ibid:40). This view is consistent with the compromisers' standpoint in the sustainable urban debate on

dealing with decentralisation problem by 'going with the tide and trying to reshape it rather than trying to swim against it' (Breheny, 1992:143). Ultimately, residential areas have to be 'places for people' – inclusive communities, which 'achieve a product mix that citizens (of various types) will 'buy' and that is in line with government's overall goals towards the sustainable city' (Webster and Senior).

2.2.1.3 Housing preferences in Scotland

Housing systems are by their nature local; the inheritance of provision and the balance of supply and demand vary from place to place and the policy variety also means local variety. The British housing system is distinctive within Europe, but it is also that Scottish housing policy has often differed from the English one (see: *Review of Scotland's Cities*, 2002:91).

There is often, in public debate, a presumption that the Scottish housing sector is in some state of permanent or pervasive crisis (ibid: 90). In response, there is a growing view that there needs to be a holistic approach to housing quality with sustainability as a key dimension. Much of the future challenge in Scottish housing is for the cities themselves and that it is for the cities to respond, to develop coherent visions, to involve tenants and communities and to be imaginative in securing and using resources.

The historic connections of Scotland to Western Europe have influenced traditions of housing design and the framework of property law. From early stages of urbanisation, high land values induced tenement rather than back to back terraced building (as in England). In consequence, Scotland has a higher proportion of its housing stock as flats than England and Wales, and this is particularly marked in the cities (e.g. in 1999, Glasgow had almost three-quarters of the housing stock consisting of flats) (see: *Review of Scotland's Cities*, 2002:93).

However, much of the built environment that was constructed during the 20th Century has usually been accompanied by critical disapproval and public acceptance (Scottish Executive Central Research Unit, 2001). As early as the 1930s, suburbs were criticised as uniform and monotonous but they were 'popular and thanks to the speculative builders, people got largely what they wanted: the basic semi, with a garden and often quite different architectural treatment from its neighbours' (ibid.).

The bungalow, particularly popular in Scotland, was also criticised by conservationists and architects from the time of its appearance.

Apart from looking at policy and academic perspectives on housing in Scotland, it is instructive to review the issue through the investigation of consumer preferences in housing.

Consumer preference and choice is an under-researched area with only a few relevant studies having been carried out in Scotland. Public views are, of course, critical in the debate about future housing requirements and are all too often missing from the equation. But housing preferences are difficult to substantiate without detailed and comprehensive surveys, given differences in areas, income groups, age, etc.

According to the *Scottish House Condition Survey* (Scottish Homes, 1997:285), two-thirds of all Scottish households wished to live in either a detached house or a bungalow. A further 10% would choose a semi-detached property and 5% a terraced house. However, almost two fifths thought it unlikely that they would be able to achieve their preferred type of dwelling, mainly on financial grounds. The percentages of dwelling type where people actually lived included only 17% in detached houses or bungalows, and 39% in flats of all kinds (Scottish Homes, 1997:34).

It should be recognised that aspirations are one thing and that most households (94%) were presently ‘very’ or ‘fairly’ satisfied with the current house or flat while only 6% were dissatisfied. The highest satisfaction is recorded among owner-occupiers (see: Scottish Homes, 1997: 334-5).

Looking at the neighbourhood, 88% of respondents were ‘very’ or ‘fairly’ satisfied with theirs and only 8% were dissatisfied (ibid: 330). Among the reasons for neighbourhood dissatisfaction, the most common were: neighbour related (19%) and pollution (12%), followed by a lack of amenities (7%), crime (5%) and other environmental factors (8%). Dissatisfaction with the neighbourhood was 4% in areas of detached houses but 21% in tenemental areas (ibid: 34).

Figures of the 1997 Scottish House Condition Survey are backed up by the Fourth Survey of Consumer Preference in Housing (1997), carried out for Scottish Homes.

According to Chapman Hendy Associates and Market Research Scotland (1997:vi), 95% of respondents were satisfied with their home and the surrounding area, with owner-occupiers 98% satisfied.

Regarding Scottish households' wishes to move, 'about 18% of households were very likely to move in the future – mostly young people, single parents, single adults and renters in private furnished accommodation' (Scottish Homes, 1997:30). Again, this figure is supported by Chapman Hendy Assoc. survey (1997:15), which found out that 'one in five households expects to move within the next 3 years; nearly a quarter of all moves is households in flats or maisonettes who intended to move to houses; but a high percentage will stay within their region'.

The key features that people look for when they move home is the number of rooms, then locational variables. Property type is less important. The most frequently expressed desire is to move to a larger home (Chapman Hendy Assoc., 1997:vii). When asked if they had a particular preference for the type of area, 47% said they did not. Of those expressing a preference, 48% sought a town or city location, 28% were looking for an outlying neighbourhood of a town or city, and 24% wanted to live in a village or rural area. In terms of location, 82% bought the property in their first choice area; of those who didn't, two-thirds cited lack of suitable accommodation and a third mentioned cost (ibid:18-19).

Part of the Greater Glasgow Housing Choice face to face survey (Market Information Team, 1997a), probed why people wanted to move away from Glasgow, to see whether the decision was influenced by housing factors alone or other considerations. Most purchasers were already homeowners, looking for a larger home, bigger rooms and a garden. They were mainly in the second hand housing market; quality of the environment and schools were of key importance. They saw the Glasgow market as too limited and expensive. People who had left the city were very satisfied with their house and the area; few wanted to return to Glasgow (ibid:3).

Glasgow Council also undertook a postal survey of people who had recently moved (Market Information Team, 1997b). For people who moved to new-build houses, the most important factors were: 67% liked the choice of houses, 41% liked the local

environment, 41% wanted to be close to relatives or friends, 38% wanted to be convenient to work (ibid:20). First time buyers had these priorities (in order): close to relatives and friends, convenient for work, liked choice of houses, close to shops, liked local environment. Choice of houses was especially important for people buying in outer areas; closeness to shops for people within Glasgow; local environment and schools for people in suburban districts (Market Information Team, 1997b:21). Families with children were most likely to want to leave the city, with single people or couples with no children wanting to move into Glasgow in larger proportions (ibid:32).

2.2.2 Residential Preferences in research

It has been previously argued that within the UK context people's behaviour in broad terms still abates urban policymakers' wish for reducing suburban sprawl. In convincing suburban residents to return to urban living, and moreover to retain the present urban population, it is necessary to comprehend residential preferences towards urban and suburban living, analyse their components and especially their flexibility and adaptability in support of suburban and urban life.

Regarding the existing research on residential preferences, in particular studies of individual people's housing and neighbourhood preferences rather than image or visual evaluation, Talen (2001) distinguishes two broad categories of research: 1) substantive assessments of the residential preferences of people in different circumstances, and 2) investigations to uncover the variables that affect the level of satisfaction.

In the first group of research on residential preferences, the focus is mainly on the connection between the residential environments with socio-psychological factors, family life-cycle, length of residence etc. Although, in broad terms it is safe to state that overall the British, like Americans, prefer suburban over urban life, the preference structure is much more complex and often modified by factors previously mentioned. Additionally, many residents who prefer low densities "could do well without the rest of suburban package" (Ewing, 1997; Baldassare and Wilson, 1995).

The second group of research on residential preferences concentrates on variables that influence satisfaction with a residential environment. One domain, or environment, which has received a great deal of attention, is the neighbourhood (Morrissy and Handal, 1981). The focus of this type of research is to find out which qualities residents themselves associate with good places (good neighbourhoods) to live in. These qualities can cover a very broad spectrum, but Brower (1996) distinguishes 33 different qualities which he considers most important attributes of a 'good neighbourhood', and he classifies them in three groups: 1) qualities associated with ambience (e.g. good maintenance, quietness), 2) qualities associated with engagement (e.g. safety and security, friendly neighbours), and 3) qualities associated with choicefulness (e.g. desirable place to live, similar life-style). These qualities can also be categorised in other ways, for example: social variables (friendliness or neighbourliness, similarity among residents), physical variables (maintenance, noise levels, safety, and convenience) and a combination of both sets of variables (see: Morrissy and Handal, 1981:125).

Like Talen (2001) points out, several relevant observations can be made about the second type of research on residential preferences: there is a great variability in residential preferences, they are difficult to generalise and often conflict. Moreover, residential preferences also change over time, which makes them even more difficult to generalise.

In approaching ideal urban forms according to planners, it is the research on the variability of residential preference (or the ideal residential environments according to residents) that makes an important contribution. Recent studies in the USA regarding the variability of suburban preference (Audirac, 1999; Talen, 2001) show the willingness of a core group of suburban population to trade the lot size for proximity to certain community facilities, but the trade-off varied by the type of facility, regional location, socio-economic, demographic variables and the acquaintance with the impacts of low-density suburban type of development.

Reflecting on Talen's (2001) research on relationship between residential preference of affluent suburban residents and planner's concept on ideal urban form, this research goes one step further by investigating also on the variability in residential

preference of urban residents who are able to exercise their residential choice. This part of investigation was aimed to see how well an urban environment would be able to retain its present population in comparison to the suburban neighbourhood.

In order to find out more about residential preferences of urban and suburban residents, the search requires an exploration of underlying components, or the *dimensions of residential preference*.

2.2.3 Dimensions of Residential Preference

The dimensions of residential preference are derived from the existing theory about ideal urban form and current residential preference research.

In her research related to residential preferences of affluent suburban residents in one of the Dallas (Texas) suburbs, Talen (2001) postulated 3 dimensions of residential preference, which may be related to dissatisfaction with suburban living. These dimensions are: *attachment*, *social and environmental context* and *physical planning*.

In addition to these dimensions, this research compares the neighbourhoods of urban and suburban type in terms of residential preference variability, i.e. their residents' willingness to remain in the present neighbourhood or to leave it for another neighbourhood of similar or different type; the *residential mobility* is analysed as the fourth dimension of residential preference structure.

2.2.3.1 Attachment

Among all dimensions of residential preference, attachment is regarded as the most personal one. Like Fischer et al. (1977) argue, 'attachment to place is multidimensional and different types of people are attached to places for different reasons'. As people not only choose to live in places that match their preferences (if they can afford it), but they also tend to adjust their view to favour current circumstances, attachment is seen as one of the resident's adapting mechanisms to the neighbourhood (Talen, 2001; Brower, 1988).

This dimension of residential preference concerns residents' emotional attachment to the neighbourhood in which they reside, and their satisfaction with the neighbourhood in meeting individual needs. In this respect, authors like Adams

(1992a) and Hunter (1974; 1978) distinguish two aspects of attachment: *community sentiment* (related to overall emotional attachment to the neighbourhood) and *community evaluation* (related to rational assessment of the relative advantages and disadvantages of living in a particular neighbourhood).

As Adams (1992a: 219) points out: 'on the surface, community sentiments and community evaluation may appear to be quite similar (as) for instance, both are seen as outcomes of participation and integration within the local community'. However, what makes a clear distinction between the two is the way in which residents assess the local community: either by emotions only (community sentiment) or by involving rational judgment (community evaluation).

In sociological research, from the Chicago school of urban sociology to the present days, the majority of studies has focused on the neighbourhood as a social unit and the assessments of residential preference have pivoted on the role of neighbourhood attachment, mainly regarded through the aspect of community sentiment (Wekerle, 1985; Talen, 2001).

Including both aspects of neighbourhood attachment, present empirical research on residential preference aims to determine how community sentiment and community evaluation vary by socio-economic characteristics of residents as well as by different types of physical environments (Talen, 2001).

Hunter (1974; 1978), Kasarda and Janowitz (1974), Wellman (1979) argue that *local statuses* (e.g. age, length of residence, children living in the home, marital status and religion) have their primary impact on community sentiment. According to them, it is these local statuses that affect the kinds of people we meet, the friends we make, and our sentimental feelings toward the neighbourhood itself. Fischer (1982) states that people's gender also relates to community sentiment as 'women traditionally are more responsible for childcare, shopping and other household tasks performed in the local community, … (therefore), they are more likely to have locally-based social network ties and strong community sentiments when compared to men'. A more recent study of Lee et al. (1991) concludes that beside age and length of residence, it is also the homeownership that affects feelings of sentimental attachment to the residential neighbourhood. Other studies emphasize the importance, but not a

distinctive priority, of interpersonal ties (social interaction with one's neighbours) as determinants of emotional attachment to the neighbourhood (Campbell et al., 1976; Zehner, 1972; Adams, 1992a). Despite the diversity of these findings, they all reflect the position that 'the local residential environment remains a meaningful unit for participation, investment, and commitment in modern societies' (Fried, 1982).

In studies on community evaluation, it is argued that individual social statues, different cultural values and desired goals, influence this aspect of neighbourhood attachment. According to Hunter (1974; 1978) cultural values, which are best captured by examining race and social class have a strong affect on community evaluation. Several studies also suggest that the length of residence as a measure of neighbourhood stability influences community evaluation (Litwak, 1961; Fischer, 1982; Lee et al., 1991; Adams, 1992a). There are, however, studies, which underlie that in general, 'the effects of background variables such as race, income and tenure on community evaluation are small relative to the effects of perceived neighbourhood attributes such as friendliness of neighbours, noise, safety or quality of shops and schools' (see: Campbell et al., 1976; Fried, 1982; Lee and Guest, 1983; Spain, 1988). Similar conclusions are drawn in the recent UK research done by Parkes et al. (2002:23), where results showed that 'perceived neighbourhood attributes are a much better guide than personal and housing background variables to understanding neighbourhood satisfaction'.

As Adams (1992a) suggests, community life affects community evaluation in ways which are both similar to and different from community sentiments. Objective characteristics of the local community, perceptions of those conditions, social statues, and the interactions community members have with each other may affect both community sentiment and community evaluation. Community evaluation, however, is more sensitive to the local conditions such as crime and environmental problems than to participation in local communities via social network (Guest and Lee, 1983). In sum, the ordering and strength of factors affecting neighbourhood attachment differ depending on whether one focuses on community sentiment or community evaluation.

In the research on the relationship between the type of physical environment and neighbourhood attachment, there are two models that are most influential. The first model is called *linear* or *density-dependent* model and it follows the approach of Louis Wirth (1938), arguing that high-density living, coupled with relative anonymity of the individual and increased social disorder, puts greater tensions on daily life than smaller, longer-established and more homogeneous rural communities. This model predicted that neighbourhood satisfaction was inversely related to size of the neighbourhood and to the density and heterogeneity of the population (see: Adams, 1992b; Parkes et al., 2002).

In contrast to the linear model, the *systematic* model is based on the length of residence rather than on population size and density. The systematic model, as proposed by Kasarda and Janowitz (1974), suggests that satisfaction with the residential neighbourhood depends more on social factors linked to an individual respondent's length of residence, system of friendship and kinship networks, and formal and informal associational ties. Therefore, it is possible to have increased attachment towards relatively crowded urban neighbourhoods in which residents have established good social networks over time (Parkes et al, 2002).

Even though traditional urbanism advocates and other sustainable city supporters suggest that 'suburbanities are unattached', research mainly shows the lack of a relationship between attachment and acceptance of traditional urban principles. Moreover, it is suggested that residents who are less attached or even unattached to suburbia are not necessarily more likely or willing to be attached to a different residential environment (Talen, 2001).

In this research, following the steps of people who have already worked on this topic, both aspects of attachment (i.e. community sentiment and community evaluation) were explored, firstly in their relation to the neighbourhood type, which was either urban or suburban. Secondly, community sentiments and community evaluations in each neighbourhood type were analysed in their relationship to certain independent variables. For example, independent variables of residents' characteristics (household type; children living in a household; age; gender; marital status; education; job situation; and occupation), or independent variables of environmental

context (type of home; home ownership; duration of living in a present home and neighbourhood; type of neighbourhood in childhood; type of garden; importance of having a private garden; neighbours; safety; pollution; and facilities) were analysed in relation to community sentiment in each neighbourhood type. For the analyses on community evaluation in each neighbourhood, the following independent variables were incorporated in this research: variables of ecological conditions (duration of living in a present home and home ownership), and variables of perception of ecological conditions (similarities with neighbours; contacts with neighbours; safety; satisfaction with the public transport system; overall facilities; and lack of facilities).

2.2.3.2 Social and Environmental Context

This dimension of residential preference has to do with the overall social and environmental context of the suburban and urban type of neighbourhood. It includes the larger significance and meaning of a particular type of development in terms of social and environmental factors, which again, are derived from a normative ways of thinking and the emphasis on a more compact urban pattern.

The research, which is focused on suburban developments, mainly raises the following issues of social and environmental context of such neighbourhoods: social exclusion of groups, environmental costs, traffic congestion, lack of residential choice, and population dispersion (Talen, 2001:205).

As one of the major criticisms of sprawl, Burchell et al. (2002) point out that 'low density development weakens households' connections to both their immediate neighbours and to the larger metropolitan community, and encourages unsociable values'. The theoretical underpinning of this criticism stems from the arguments made by New Urbanists. On the other hand, the arguments of New Town advocates, classical urban sociologists, and environmental behaviourists suggest that very high densities can also have 'a dampening effect on neighbourhood social ties' (Freeman, 2001; Brown and Cropper, 2001). In summary, whereas very low densities may undermine neighbourhood social ties, as we move up the density scale, at some point higher densities start to have the same effect. The literature, however, does not suggest the points at which increasing density switches from having a positive to a negative effect on neighbourhood social ties.

Some other aspects of the predominant suburban social and environmental context, consisting of mainly single-family detached, semi-detached or terraced homes and relatively larger lots, the lack of local facilities, excessive use of the private cars, are also seen as a negative feature by the New Urbanists and other natural allies of traditional urbanism (advocates of sustainable development, growth management, environmentalism, visual quality, public transport etc.).

Although suburban residents are most likely to favour their social and environmental context, thus not seeing it negatively at all, at the same time research in the US shows that, when suburban residents are at least aware of the problems pointed out by the critiques of sprawl, they agree with many of the normative views that form the basis of an alternative to suburban development (Talen, 2001: 208). Yet, agreement with these normative views and action in support of such views are often not coinciding. For example, in the UK, studies have shown that the population movements suggest that those living in suburbs have tended to move further out and there has also been 'a cascade with people, and families in particular, leaving the centres of the larger urban areas and heading for suburbs, smaller towns and rural areas' (DETR, 2000:25).

Social and environmental context of urban neighbourhoods may exhibit certain disadvantages and problems related to: safety issues and perception of crime, pollution and congestion. These features can be observed as both an objective condition of the local area and, by neighbourhood residents in their subjective evaluation.

Personal and safety of the family constitute 'one of the most potent forces governing the lives of urban and suburban residents' (Adams, 1992b:357). Indeed, researches argue that concern for safety of household members and their possessions is a key component of dissatisfaction with the local area and a reason why people move from urban to suburban neighbourhoods (Fischer, 1982; Lee et al., 1991). On the other hand, the US experience shows that residents of some urban neighbourhoods often state that they 'rejected suburbia despite the real disadvantages of downtown living (crime and noise head the list)' (Brower, 1996:10).

In the UK, regarding safety issues, it is found out that city dwellers are both more likely to fall victim to crime and to worry about it. Objective condition of safety issues demonstrate that in the UK in 1999, '5% of adults in inner city experienced violence – nearly twice the rate in rural areas and 6.3% of inner city households were burgled compared with 2.6% of rural households' (DETR, 2000:26).

The sensitivity to crime and safety issues depends on residents' perceptions of environmental problems (undesirable characteristics of communities), e.g. abandoned buildings, teenagers hanging around, vandalism etc. (Baba and Austin, 1989). Findings of the UK research done by Parkes et al. (2002) suggest that, due to such undesirable characteristics in the local community, residents in economically poorer urban areas show higher sensitivity to crime than residents in affluent urban areas.

This research takes into account a number of variables that previously reviewed studies have analysed within either urban or suburban social and environmental contexts. However, instead of focusing on only one type of neighbourhood, this research compares two neighbourhood types in terms of the following variables: similarities between neighbours; frequency in meeting the neighbours; happiness with contacts with neighbours; neighbourhood safety; happiness with the overall facilities in the neighbourhood; perceived lack of facilities; frequency in using certain facilities; importance of having a private garden; and pollution in the neighbourhood.

Through making a comparison between urban and suburban neighbourhoods, this research looks at two affluent neighbourhoods and investigates differences of perceived advantages and disadvantages of their social and environmental contexts. The emphasis is made on subjective evaluation of these conditions, which can be summarised into: neighbourhood bonds, neighbourhood safety, neighbourhood facilities, environmental comforts and discomforts.

2.2.3.3 Physical Planning

The physical planning dimension of residential preference includes all the aspects of residential living that involve the physical configuration of home, street, neighbourhood and public space as well as the relationship between the residential

neighbourhood and surrounding land uses such as shops, schools and places of work. Therefore, this dimension of residential preference involves issues of urban design, accessibility, the separation or integration of land uses, commuting distances, and public space. By and large, physical planning 'has to do with what could be termed the planned elements of the residential neighbourhood, specifically those that have been implicated in criticism of suburban sprawl' (Talen, 2001:203).

The physical planning issues on local and neighbourhood level are of central interest for specially commissioned groups like the Urban Task Force in the UK or the New Urbanists in the USA.

The underlying approach for such groups of urban designers regarding the physical planning issues is 'the organising power of space', which cultivates resident interaction and sense of community (Talen, 1999). Consequently, they decry the segregation of 'land uses which separate old from young, home from job and store, rich from poor, and owner from renter' (Calthorpe, 1993: 27). These separations reinforce social distinctions and create the ecological and financial costs of automobile dependence.

The Urban Task Force (1999:54) stands for urban areas as 'organised in concentric bands of density, with higher densities around public transport nodes, (rail, bus and underground), and lower densities in less connected areas'. This type of development not only sustains appropriate levels of economic and social activity around urban centres and local 'hubs' but it also ensures that all parts of the city are within an acceptable distance from basic transport and social facilities (see: ibid: 54).

There are 10 guiding principles of urban design as outlined by the Urban Task Force (1999:71), which serve to provide the basis for criteria for assessing plans and proposals: 1) recognising that each location is different; 2) respecting local traditions and relationships; 3) priority given to the public realm; 4) access and permeability where car dependency should be minimised and integration with public transport maximised; 5) optimising land use and density; 6) mixing activities (diversity of activity and uses should be encouraged at different levels: within buildings, streets, urban blocks and neighbourhoods); 7) mixing tenures; 8) building to last; 9) sustainable buildings; and 10) environmental responsibility.

The physical planning issues are of major concern for the suburban type of development, which is considered by many to be poorly planned and characterised by the wasteful form it so often takes (Ewing, 1997; Talen, 2001).

Although suburban residents may be unlikely to accept criticism of their residential lifestyle or they can be very attached to their neighbourhood, at the same time, they are not blind to the suburban neighbourhood's physical planning-related problems, especially if they are affected by such problems in very practical ways. Research shows that practical issues, which mostly affect suburban residents, are their dissatisfaction with access to services and travel time spent in their cars. In support of these findings, Talen's (2001) research concluded that the suburban residents' characteristic that had the most significant association with traditional urbanism acceptance was the variable related to non-commuting travel time.

The most important indicator of sprawl is poor accessibility (Ewing, 1997). Suburban residential neighbourhoods may be far from places of work or other daily activities and this can be described as poor residential accessibility. Also, different places of daily activities including the place of work may be far from one another, which makes a state of poor destination accessibility. Both types of accessibility influence the efficiency of household travel patterns (i.e. time spent in travel).

Starting from other researchers' main focus on suburban environments and problems of such environments related to physical planning issues, this research continues further and also investigates physical planning issues of the urban type of neighbourhood. This research analysed the relationship between the type of neighbourhood and the following variables of physical planning issues: distance of resident's home to place of work or daily activity; everyday most common transportation means; frequencies of: walk, using a public transport system, and using a private car; satisfaction with the public transport system; number of private cars in the household; possibility to manage without a private car; transportation means used to access the following facilities: city centre, daily shopping, weekly shopping, health centre, sport centre, green/ open spaces, post office, bank etc., library, cinema/ theatre, restaurants, pubs and cafés; distance of children's nursery/

school from home and; children's means of transportation for accessing their nursery/ school.

As it can be observed, in this research, the physical planning dimension of residential preference is analysed with an emphasis on accessibility. Like with the dimension of social and environmental context, the two neighbourhoods (urban and suburban) are compared, but this time in terms of: commuting distances and physical mobility of adults and children, private car dependence, and accessibility of facilities.

2.2.3.4 Residential Mobility

This component of residential preference can be observed from both the individual and community perspective. From the point of view of individuals, residential mobility has long been seen as 'an adjustment to stresses produced by a disparity between individual needs and the ability of the current home to fulfil these' (Wolpert, 1966; Clark and Cadwallader, 1973).

From the community perspective, residential mobility is one of the key factors in the demographic dynamics of the neighbourhood. The dynamics of a neighbourhood is determined not only by changes within the existing population (as residents grow old) but also by changes of the population, as people move (van der Vlist et al., 2002).

As it is pointed out by Parkes and Kearns (2002:3), 'community and individual objectives need to be reconciled, and in part, this may come about through a better understanding of the factors that influence individual moving decisions'.

Negative residential factors (e.g. negative stereotyping of an area, the decayed environment and the breakdown of social stability leading to crime) are emphasised by Power and Mumford (1999) as 'push factors' for out-migration. Research found that overall satisfaction with the home or neighbourhood is another commonly used variable that influences residential mobility (Parkes and Kearns, 2002). Additionally to overall satisfaction, attachment is a variable, which in conjunction with increased duration of residence, may moderate the effect of negative perceptions in promoting residential mobility (Deane, 1990). Residential mobility is also shaped out by a different set of background factors: life-cycle variables (age, marital status, family

type, education, job situation), employment change and tenure (Parkes and Kearns, 2002:5). In the empirical analysis of the 1995 Dutch Housing Demand Survey (see: van der Vlist et al., 2002:1153), the reasons for the actual household's moves were summarised in four main categories: 1) household and family-related reasons (referring to moving because of marriage or divorce, household size and composition and health), 2) labour and occupation-related reasons (moving because of a change in occupation or job location), 3) housing-related reasons (moving due to tenure, housing costs, and dwelling type), and 4) commuting reasons (referring to the length of the journey to work). The results of this survey (in percentages) showed that housing-related reasons are by far the most important category for actual residential mobility. Household and family-related reasons follow housing-related reasons, while in sharp contrast to them are commuting reasons, which are stated by only 5% of home-movers to be the reason for their residential mobility.

It is necessary to separate mobility thoughts from actual moves because actions do not always match intentions. Some researchers found that while neighbourhood satisfaction variables affect residential mobility intentions, the same variables have only limited effects on residential mobility action (Lansdale and Guest, 1985; Lee et al., 1994). On the other hand, as noticed by Parkes and Kearns (2002:6) 'background variables are likely to have a direct effect on actual moves, independent of their effect via moving intentions'. From the background variables, household income, for example, influences the fulfilment rate of intended moves. However, the failure to realise intended residential mobility is also related to some of the background variables, e.g. age and housing size requirements (ibid.:6).

In this research, residential mobility is firstly analysed in the relationship to the type of neighbourhood because it was important to see whether affluent urban and suburban residents differ in terms of their residential mobility intentions. After that, for each type of neighbourhood, a set of independent variables of socio-economic characteristics of their residents (household type; children living in a household; age; gender; marital status; education; job situation; occupation) and variables of environmental context (type of home; ownership of home; duration of living in a present neighbourhood; type of neighbourhood in the childhood; home having a private garden, private garden importance; similarities with the next-door

neighbours; happiness with contacts with neighbours; safety; pollution; satisfaction with public transport system; overall facilities; and lack of facilities) are analysed in relationship with residential mobility. Finally, residential preference components, such as community sentiment and community evaluation, are also analysed in each neighbourhood in their relationship to residential mobility.

It can be observed that in this research the focus is on residential mobility intentions rather than mobility actions of the residents in affluent urban and suburban neighbourhoods. As a factor of current residential preference variability, residential mobility is analysed in relation to the neighbourhood type, residents' socio-economic characteristics, environmental context, and components of neighbourhood attachment. Most of the variables that other researchers use in residential mobility analyses, are also incorporated in this research, however, household income and employment change were not included as they relate more to residential mobility actions.

2.3 Glasgow Urban Context

As a typical post-industrial city, Glasgow exhibits 'all the symptoms of dispersal, car dependency and social stratification', but at the same time it 'exemplifies great strength in its historical development, and a high degree of spatial and formal cohesion in those areas of the city centre and some inner suburbs which have escaped comprehensive redevelopment' (Frey, 1999:74)

Before entering the present post-industrial phase, Glasgow went through different stages of its development form the early settlement, ecclesiastical town, mercantile town and industrial town.

Glasgow's origins can be traced back to the sixth century AD when St. Mungo established a religious community on the place of present city. The available evidence suggests that the earliest settlement on the site consisted of a bi-nuclear village, with a fishing community by the river overlooked by an ecclesiastical foundation on the hilltop above (Pacione, 1995:1). Until the 16th century, the centre of spiritual and temporal power was in the upper town (around cathedral), but later on, the centre of gravity of Glasgow life began to move downhill as a result of the growing commercial developments in the lower town (ibid.:14). This lower town comprised stretches of the present-day High Street, Trongate, Gallowgate and Saltmarket intersecting at Glasgow Cross, from which the tracks led north uphill to the cathedral and south to the river crossing. High Street was the part where the growth of the city was concentrated until the 17th century. In its further urban growth, Glasgow didn't follow a concentric structure, but as Frey (1999:77) points out, 'from its origins at High Street and Trongate/ Gallowgate it grew on either side of the River Clyde roughly to the east and west, occupying a broad band of terrain running generally from north-west to south-east'.

The 17th and 18th century were marked by Glasgow's growing economic success built on trade. This mercantile period brought to further development of the city towards the west as land became more profitable in this augmentation, and many rich merchants started to buy and build their mansions and townhouses in the countryside around Glasgow (Masnavi, 1998:145). The lower town's major commercial growth in opposition to the areas around the Cathedral also initiated 'the process of social

separation' (Reed, 1999a). As Pacione (1995:76) brings up: 'although most visible in the Victorian city, a tendency towards greater residential segregation on class lines was apparent in Glasgow from the middle of the eighteenth century'.

Great prosperity and wealth due to tobacco trade and shipbuilding was not equal for merchants and common people of Glasgow, and this had an implication on urban structure, which reflected a strong sense of residential polarisation (Maver, 2000). According to Reed (1999a:59) 'during the course of nineteenth century, the population of Glasgow grew ninefold to around three quarters of a million, and almost all of the increase was proletarian and large part of it was concentrated around Glasgow Cross'. On the other hand, merchants and landowners who benefited most from the prosperity of the time were not interested in staying in the overcrowded town any more, and sought to move towards healthier living environments for their families.

By mid of the 19th century, a number of wealthy landowners started to build gridded Victorian suburbs, moving westwards away from the old centre of Glasgow Cross. According to Pacione (1995:74) 'the main thrust of urban growth was westwards but some development was being undertaken south of the river…(as) an attempt to establish an "alternative west end"'. However, 'as the factories, foundries, and railways invaded the area the population of these southern riverside suburbs became almost exclusively working class' (Walker, 1982). Pacione (1995:76) adds that, for similar reasons, city expansion to the east of Glasgow Cross was, with some short-lived exception, essentially working class from the beginning. As Reed (1999c:208) states: 'the perception of Glasgow as a city moving ever westwards from the medieval spine that ran from the Cathedral down to the river is a common one, and, given the present derelict outlook to the east, it is easy to understand why'. Yet as much Glasgow lying to the west was also lain to the labour-force east end, latter being the area where the greater part of the industrial wealth was generated that was to raise Glasgow to its eminent position in the British Empire.

In the nineteenth century Glasgow, there were two main push factors causing the migration and segregation of affluent classes: 1) commercial encroachment, and 2) deteriorating physical and social fabric of the old city. For the social elite of the

nineteenth century Glasgow, these “push” factors were joined by a ‘clearly defined set of “pull” criteria against which to judge a potential suburb. Of greatest importance was the social composition of the neighbourhood, which had to be exclusively upper middle class’ (Pacione, 1995: 76-77). The affluent population was also attracted by the ambience and location (i.e. “a picturesque, healthful and well-aired” environment which was not too far away from the built-up area). The west end’s inner suburbs, with its prevailing westerly winds, location above and to the west of the industrial areas, and being on commuting distance of 2 to 5 miles to the central business district, which at the time of horse-drawn transport was deemed acceptable, fulfilled all the requirements of the 19th century affluent population. As Pacione (1995:77) underlines ‘not until the development of commuter railway services in the 1880s did the middle class look to outer suburbs such as Bearsden, Milngavie, Bothwell, Uddingston and Lenzie’.

Glasgow’s spectacular growth in the course of the nineteenth century was displayed in the expansion of the built-up area, the changing structure of its employment base, and a massive increase of population (Pacione, 1995:109). The combination of natural increase and net in-migration in nineteenth century Glasgow produced a rate of growth that in turn led to some of the highest densities in Europe. The great mass of working-class population was contained within two square miles of the central area whose spatial limits corresponded rather well to former medieval Old Town of Glasgow (Edwards, 1999; Pacione, 1995). Such staggering densities were supported by the tenement style of housing and the maze of vennels and wynds in the old city, which all contributed to the city’s exceptional public health problems.

The following table represents the population growth in Glasgow up to the end of the 19th century, as well as the area that city had occupied in the same period of time.

YEAR	POPULATION	AREA (ha) (4)	DENSITY (people/ ha)	MAIN AREAS OF EXPANSION (5)
1300	1,500 (4)	-	-	-
1600	7,000 (4)	-	-	-
1791	66,000 (4)	716	92.18	Anderston to James Street/ West Nile Street to Camlachie
1831	202,425 (1)	883	229.25	-
1872	494,824 (3)	2,442	202.63	Keppochhill, Glasgow University
1891	658,073 (1)	4,800	137.1	Burghs of Govanhill, Crosshill, Maryhill, Pollokshields East, Pollokshields, Hillhead

Sources: (1) Census; (3) Year Book Stirling Library; (4) Figures are from various sources and are approximate; (5) All areas quoted added to the City except those for boundary change

Table 2-1: Glasgow's population and area change until the end of the 19th century, Online available URL: http://www.glasgow.gov.uk/html/about/facts/pdfs/Popul8.pdf

Since the commercial and industrial success of Glasgow in the nineteenth century made its reputation of the 'Second City of the Empire', from the 1860s civic leaders consciously attempted to live up to 'Second City' pretensions by giving practical substance to plans for urban regeneration. As Maver (2000:170) observes, civil rhetoric's aspiration for 'Greater Glasgow' was a combination of slum-clearance and central restructuring with a concerted campaign to absorb the suburbs surrounding the city.

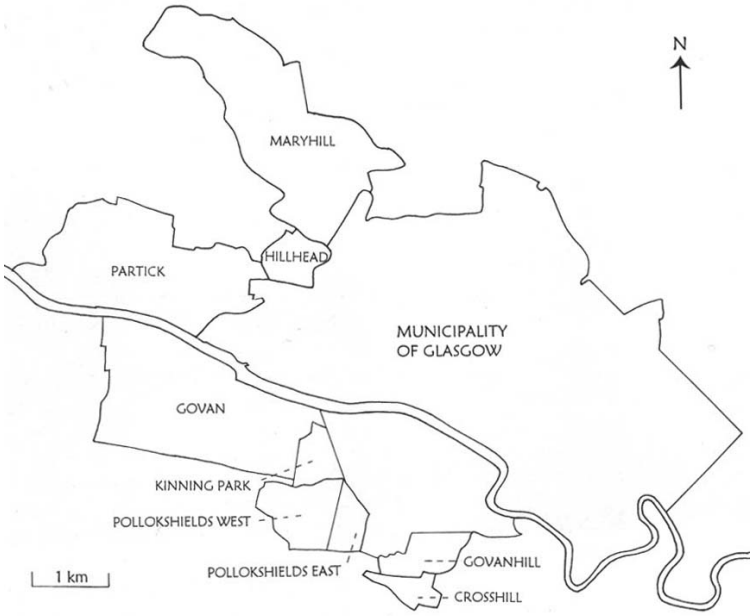


Figure 2-6: A map showing the Police Burghs created to the south and west of Glasgow between 1850s and 1880s. Source: Maver, 2000

From the 1860s into the first decade of the twentieth century one type of building – tenements became a synonym of Glasgow. In the remarkably short span of time, these red or yellow sandstone buildings, most often on four storeys, and usually with two or three 'houses' or flats per floor brought to the metamorphosis of Glasgow into the tenement city. In Reed's (1999b:106) words: 'it was a tenement, densely occupied, that absorbed the doubling of Glasgow's population that took place in the four decades before the First World War'. Tenements were built all around the city following the outward movement of heavy industry to the north and south. They began to occupy the territory between the earlier suburban venture (see: Masnavi, 1998:151). The use of tenements in the building of Glasgow can be compared with brick in the building of house – as an aggregation of: flat stacked vertically on flat around a close; of tenement added to tenement to line a street; of street intersecting with street to form a block; of block added to block to make a district (Reed, 1999b; Masnavi, 1998). It should be understood that the tenements were not built for accommodating the working class only. As Reed (1999b:108) points out 'they had a part to play in the westward expansion of the city, though here the self-contained house dominated until the 1870s'. Among all the other types of developments, tenements were the ones that provided 'the connective tissue of the expanding city', and 'consequently it was to the great damage to the vitality of the city that it was the

tenemental quarter that suffered the devastations of inner-city comprehensive redevelopment in the 1950s and 1960s' (ibid.:127).

Glasgow started facing a great transformation in the period between the two world wars. As a severe shortage of housing was still present in the overcrowded Glasgow, 'to overcome the problems, in 1917, there was a shift towards displacing a large proportion of population into the new suburban developments on the outskirts of Glasgow' (Masnavi, 1998:151). In dealing with housing problems at the time, it was proposed to prohibit the further building of tenements (which were blamed for the resulting slum conditions) in favour of the 'Garden city' inspired cottages (Stewart, 1996 in Masnavi, 1998:152). According to McKean (1999:130) 'the city had stopped in the 1914 where the tenement-builders had stopped'. Consequently, by 1939 there had been a clear move in Glasgow from very high density urban quarters to a lower density suburban development of its fringes.

In the period after the Second World War, with the context of high unemployment and the heavy industry shrinking, Glasgow started losing its population. A fundamental question was whether the population could be rehoused to adequate standards within the boundaries of the city. It was against this background that the Bruce Plan was presented in the 1945 (see: Markus, 1999). This plan promoted the total eradication of Glasgow's inner city core by demolition of so-called tenemental slums, which would be replaced by high-density suburban development with a mixture of high and low density modern dwellings (Pacione, 1995:162; Masnavi, 1998:152). As Markus (1999:149) remarks 'though this Plan remained unexecuted, key features survived into Glasgow's planning thinking for decades'. Creation of new towns according to Abercrombie's Clyde Valley Regional Plan (1946-1949) was the primary response for displacing a quarter of a million of Glasgow's slum dwellers. At the same time, the Comprehensive Redevelopment proposals in 1957 initiated a switch to high rise and expansions of existing towns or building on existing sites within the city rather than developing low rise apartments and new towns (Masnavi, 1998:153). By 1974 the social costs, inflexibility and slow pace of the comprehensive redevelopment strategy led to termination of the programme in its original form. Like Pacione (1995:182) stresses 'these post-war schemes, developed

as part of the solution to housing problems of the inner city, have, over time, come to exhibit signs of social, economic and environmental decline of a magnitude at least equal to that which confronted the city at the beginning of the century'.

Another point should be also made in concluding this section, and that is the decline of Glasgow's population in the post-war period. The population decline did not have a constant pace throughout all decades; however, it has lasted up to the present day. The relationship between net out migration from the city and relative economic performance is a longstanding one.

The most significant decline happened in the period between 1961 and 1975 when the population loss equalled 20%. During 1980s, Glasgow suffered from an excessive loss of employment (-1% per annum over the period 1981 to 1991) and considerable net out migration. Since 1993, Glasgow's employment performance has been more favourable (5.8% increase in period 1993-1997), and the city has experienced a more gradual population decline in the period of 1990s. Yet, a more favourable economic performance does not of itself eliminate Glasgow's net migration loss, which can be supported by the results of a survey of house purchasers in 1994 in Glasgow city and its conurbation. This survey showed that 60% of all "main earners" in households, which move from Glasgow to purchase a house elsewhere in the conurbation, still continue to work in Glasgow (see: Glasgow City Council Development and Regeneration Services, 2001:4).

Following is the table of Glasgow's city population, area and density change in the course of the 20th century.

YEAR	POPULATION	AREA (ha) (4)	DENSITY (people/ ha)	MAIN AREAS OF EXPANSION (5)
1901	761,712 (1)	5,135	148.34	-
1912	not available	7,763		Burghs of Govan, Partick, Pollokshaws
1926	1,090,380 (3)	11,942	91.31	Carntyne, Cardonald, Robroyston, Knightswood

YEAR	POPULATION	AREA (ha) (4)	DENSITY (people/ ha)	MAIN AREAS OF EXPANSION (5)
1938	1,127,825 (3)	16,077	70.15	Easterhouse, Darnley, Drumchapel, Summerston
1946	1,050,000 (3)	16,077	65.31	-
1951	1,089,555 (1)	16,077	67.77	-
1961	1,055,017 (1)	16,077	65.62	-
1971	897,485 (1)	16,077	55.82	-
1975	885,129 (2)	20,235	43.74	Burgh of Rutherglen, Cambuslang, Mount Vernon, Baillieston
1981	774,068 (2)	20,235	38.25	-
1989	698,890 (2)	20,289	34.45	Minor Boundary Changes
1991	688,600 (2)	20,267	33.98	Minor Boundary Changes
1995	674,820 (2)	20,267	32.3	-
1996	616,430 (2)	17,730	34.77	Rutherglen and Cambuslang transferred to South Lanarkshire – April 1996
1997	611,660 (2)	17,730	34.50	-
1999	611,440 (2)	17,730	34.49	-
2000	609,370 (2)	17,730	34.37	-
2001	577,869 (1)	17,730	32.59	-

Sources: (1) Census; (2) Registrar General's Mid Year Estimates; (3) Year Book Stirling Library; (4) Figures are from various sources and are approximate; (5) All areas quoted added to the City except those for boundary change

Table 2-2: Glasgow's population and area change during the 20th century, Online available URL: http://www.glasgow.gov.uk/html/about/facts/pdfs/Popul8.pdf

2.3.1 The West End

> Glasgow is one organic growth like a vast forest tree. And luckily accidents caused it to grow tree-like up and out in one direction, to the west.
>
> (Nairn, 1960 in: Reed, 1999c:208)

The immense growth of Glasgow during the nineteenth century exhibited the west end dominated spatial expansion of city's middle class. Around 1830, when the development of the West End commenced, 'the speculative developers of Hillhead, Kelvinside and Dowanhill sought to entice the burgeoning mercantile classes of Glasgow to grand new terraced and detached houses using the attractions of the fresh air and hilltop views, as well as the distance from the less salubrious sections of the city' (Glasgow Conservation Trust West).

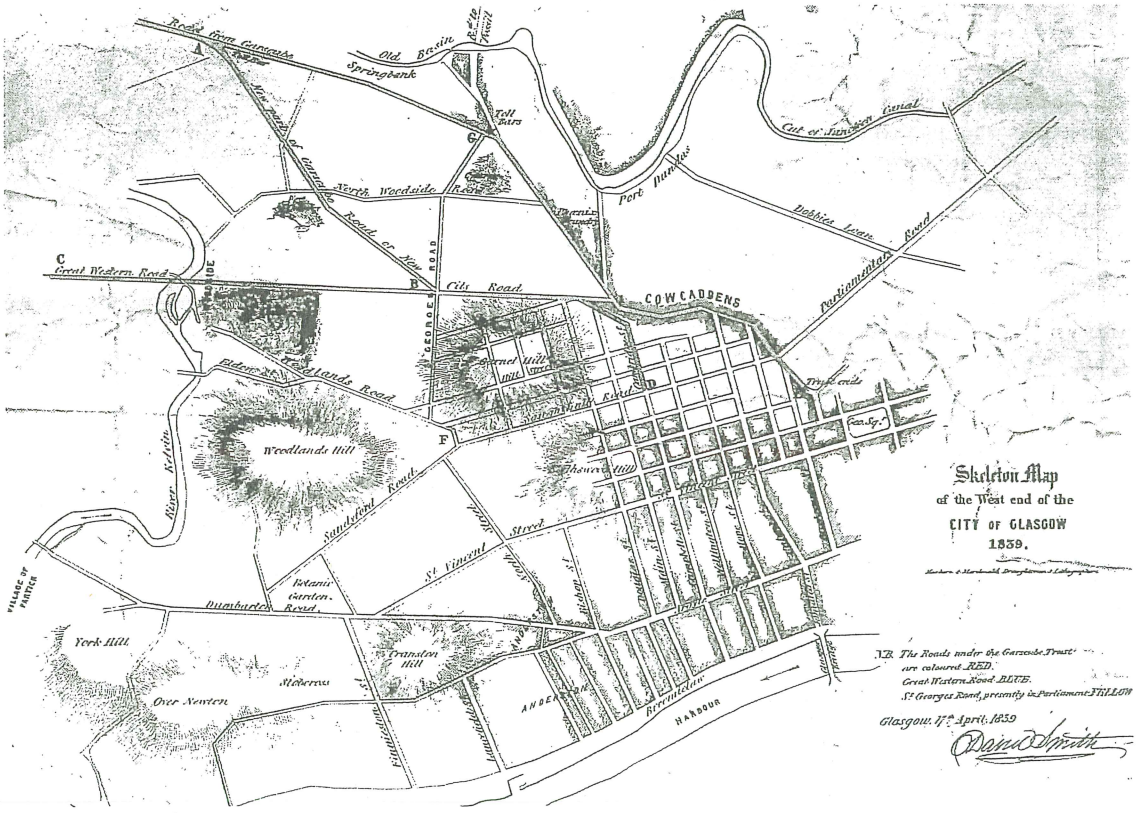


Figure 2-7: Skeleton Map of the West End, 1839. Source: Reed, 1999a: 63

Development in the West End first took the form of classical villas and rows of terraced houses which satisfied the needs of wealthy families. In the early years, examples of tenemental construction were rare in the West End. However, by the 1870s, the city's building boom and the increase of demand for houses of a more modest nature in the West End, induced tenements as a response of speculative builders to supply a ready market. As it is stated by the Glasgow Conservation Trust West 'the solid tenements of Hillhead and Partick, the imposing terraces of Dowanhill and the villas of Kelvinside are a unique memorial to the architectural and social vigour of the city in its industrial heyday'.

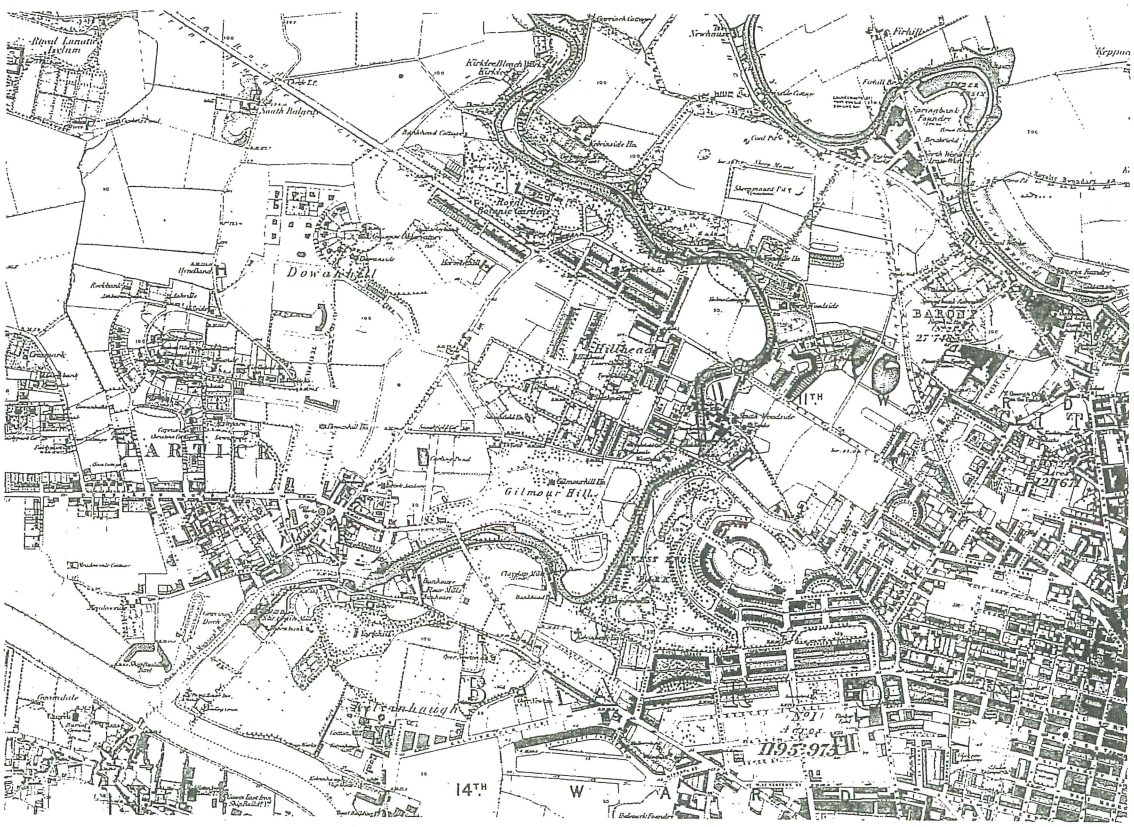


Figure 2-8: The West End of Glasgow in 1860. ***Ordnance Survey***

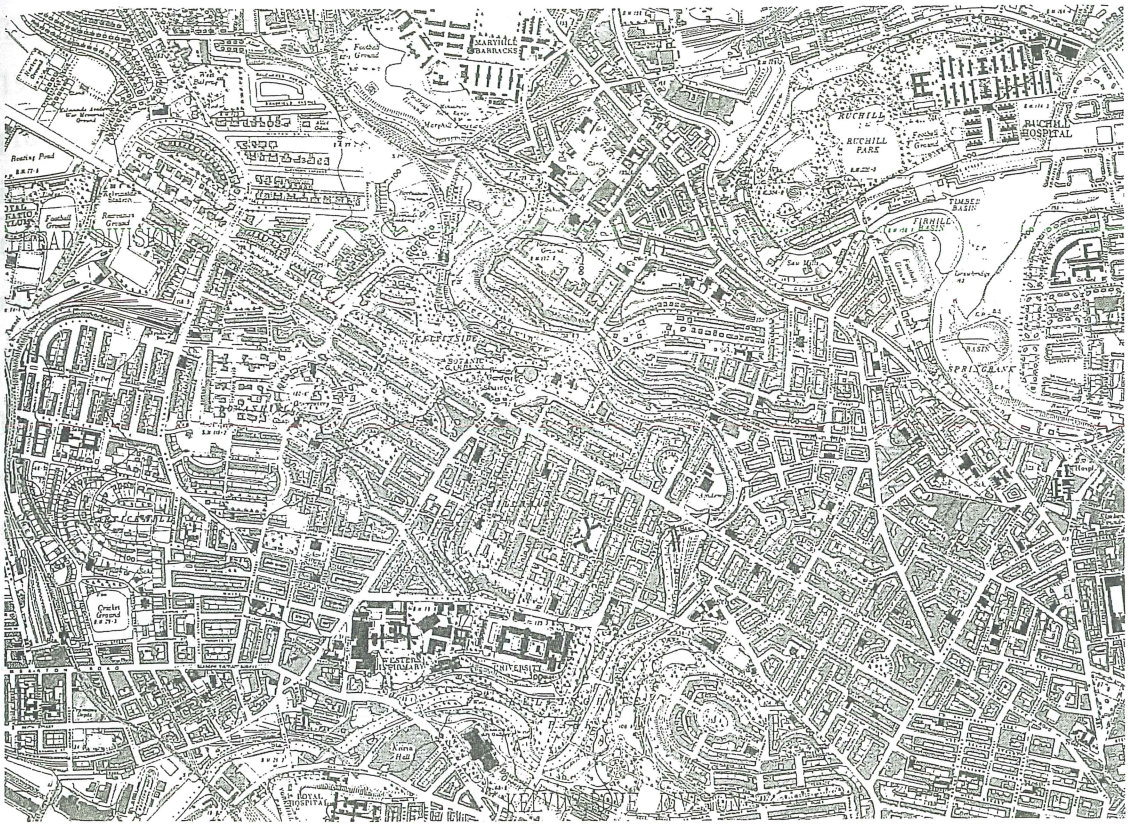


Figure 2-9: West End of Glasgow, c.1930. ***Ordnance Survey***

In the period after the Second World War, the demographic changes initiated major changes to the West End's traditional building stock as well. According to Martin (1999:174) 'by the 1960s, the West End was no longer seen by many people as the desirable area it once had been'. The West End suffered a loss of its more affluent and mobile citizens to suburbs beyond the city's boundaries, such as Bearsden and Milngavie, and large villas and terraced houses in the West End were often bought up for institutional use, or taken over by speculative builders and converted into flats (ibid.). In the worst cases, houses and large flats were subdivided into numerous bedsits (with the two universities providing a ready market for their occupation by students) in order to provide maximum rents for the absentee landlords. The decay of the housing stock was not the same in all the areas of the West End. Some areas suffered greatly (e.g. Hillhead, which was blighted by the proposals for the

expansion of the University), whereas areas such as Hyndland were well maintained by the home owners living in it (see: Glasgow Conservation Trust West).

The amount of conservation work in the West End of Glasgow increased during the 1970s, supported financially by programmes such as “Facelift Glasgow” campaign to promote the cleaning and restoration of the city’s oldest properties. Such improvements and the oil crisis of 1973 began to change many people’s ideas about the attractiveness of living in Glasgow’s outer suburbs, and there began a reverse migration of sorts by the professional classes back into the West End (Martin, 1999:175).

Nowadays, the West End is one of the most sought after residential areas in Glasgow. The area brings a notion of prestigious residential neighbourhood within the city and it has much higher population densities than city average.

It can be said that a territorial scope of the West End of Glasgow is relatively vague as there is a difference in administrative boundaries and people’s notion of the West End boundaries. In very broad terms, it is considered that the West End spreads west of Charing Cross up to Kelvinside, Hyndland and Partick, with a south boundary on Dumbarton Road, and north boundary on Maryhill Road. However, the West End local plan does not include all the areas that are known as ‘the estates of Glasgow’s west end’, or the areas considered by people to be the West End.

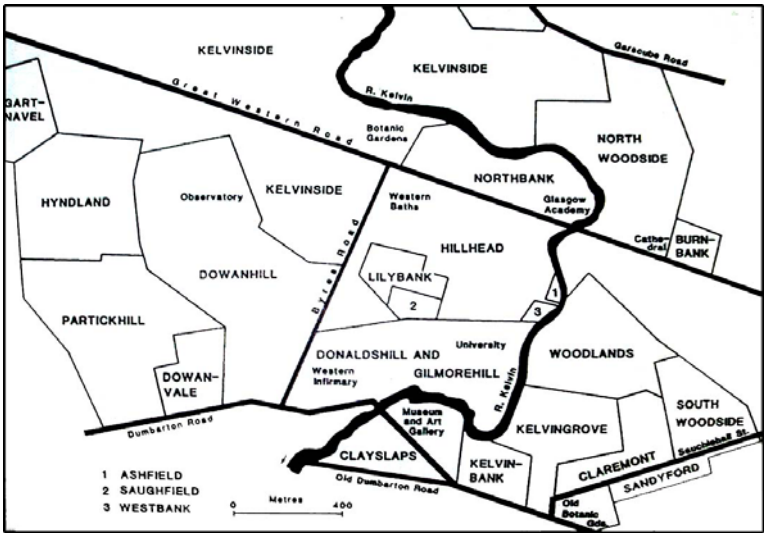


Figure 2-10: The estates of Glasgow’s west end, redrawn from Dicks (1985) (source: Pacione, 1995:78)

Figure 2-11: West End Local Plan

In this research, as a case study urban neighbourhood, the West End comprises as some of the West End local plan areas, as well as parts of North Kelvinside (Kelvinside and North Woodside), which are adjacent to the local plan's boundaries. Therefore, six areas in total were considered as the West End urban neighbourhood: Dowanhill, Hillhead, Hyndland, Kelvinside, North Woodside and Northbank.

WE AREA	area (ha)	population density	people	number of households	average household size
DOWANHILL	46.84	120.45	5642	2772	2.03
HILLHEAD	40.28	124.7	5023	1732	2.90
HYNDLAND	21.53	133.02	2864	1545	1.85
KELVINSIDE	133.04	70.81	9421	4510	2.09
NORTH WOODSIDE	24.18	112.28	2715	1373	1.98
NORTHBANK	16.75	78.45	1314	520	2.53
total	282.62	95.46	26979	12452	2.17
total *	310	79.21	24 554	12 246	2.00

Table 2-3: Area, density, population, number of households and average household size in the West End (source: VPS 2000 Glasgow City Council Development & Regeneration Services and 2001 Census KS01 for total*)

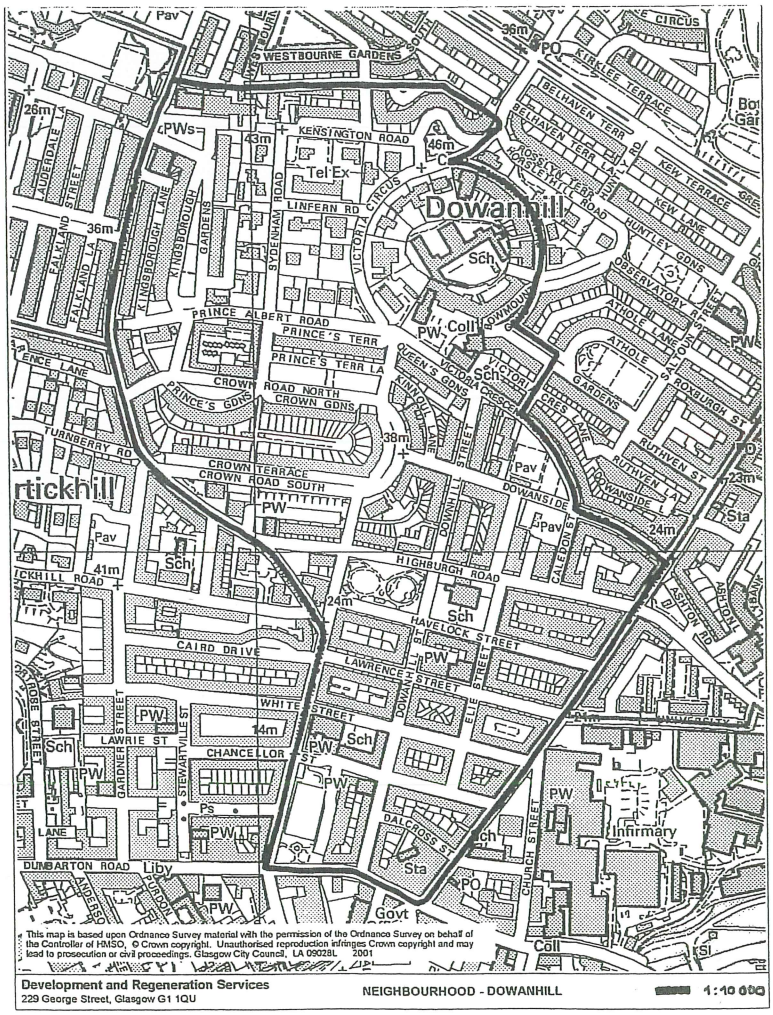


Figure 2-12: Dowanhill area map

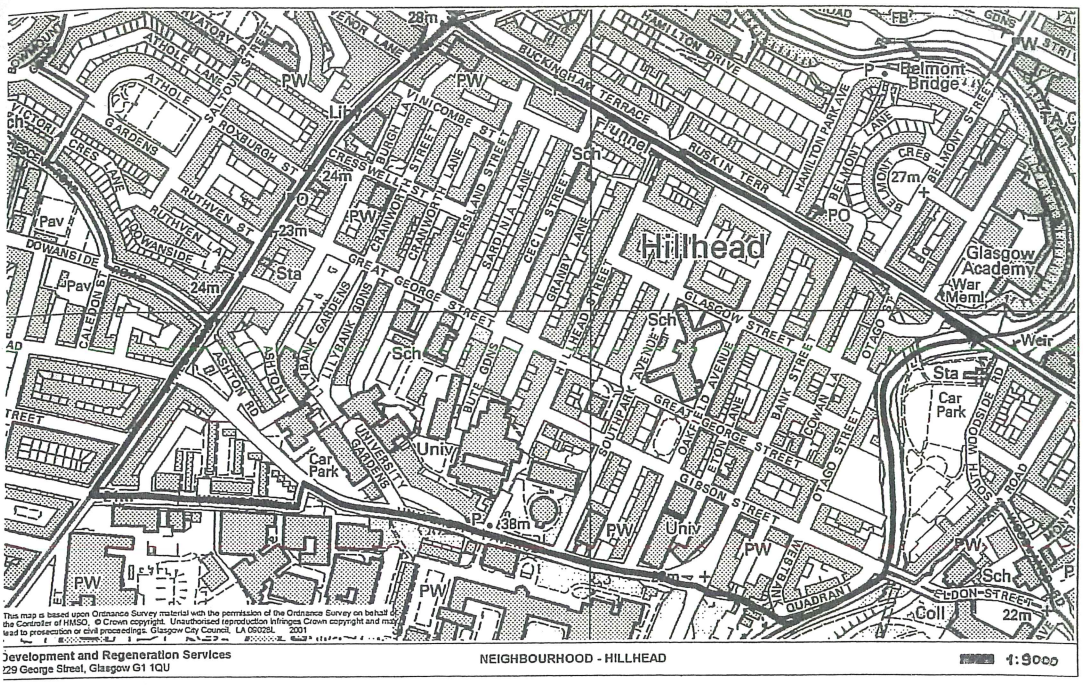


Figure 2-13: Hillhead area map

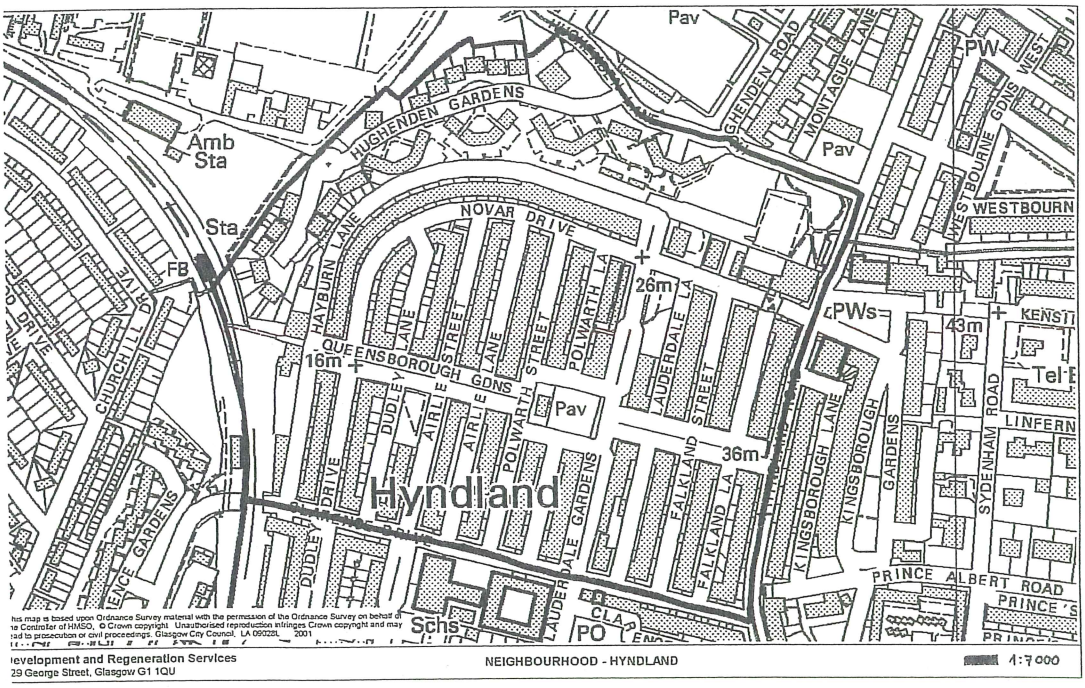


Figure 2-14: Hyndland area map

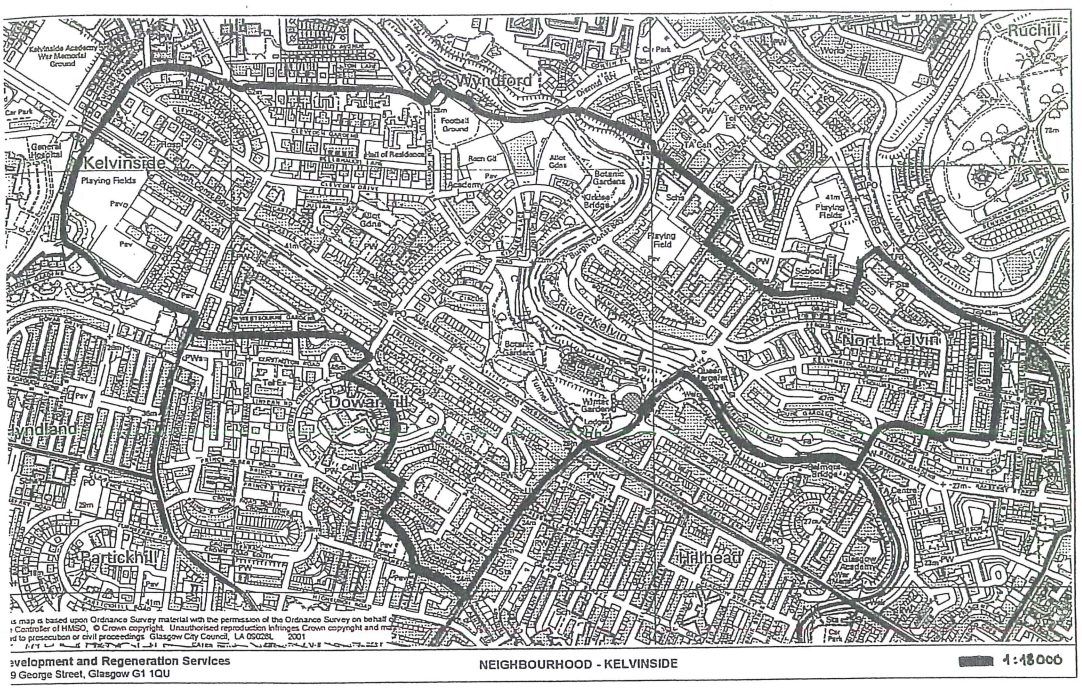


Figure 2-15: Kelvinside area map

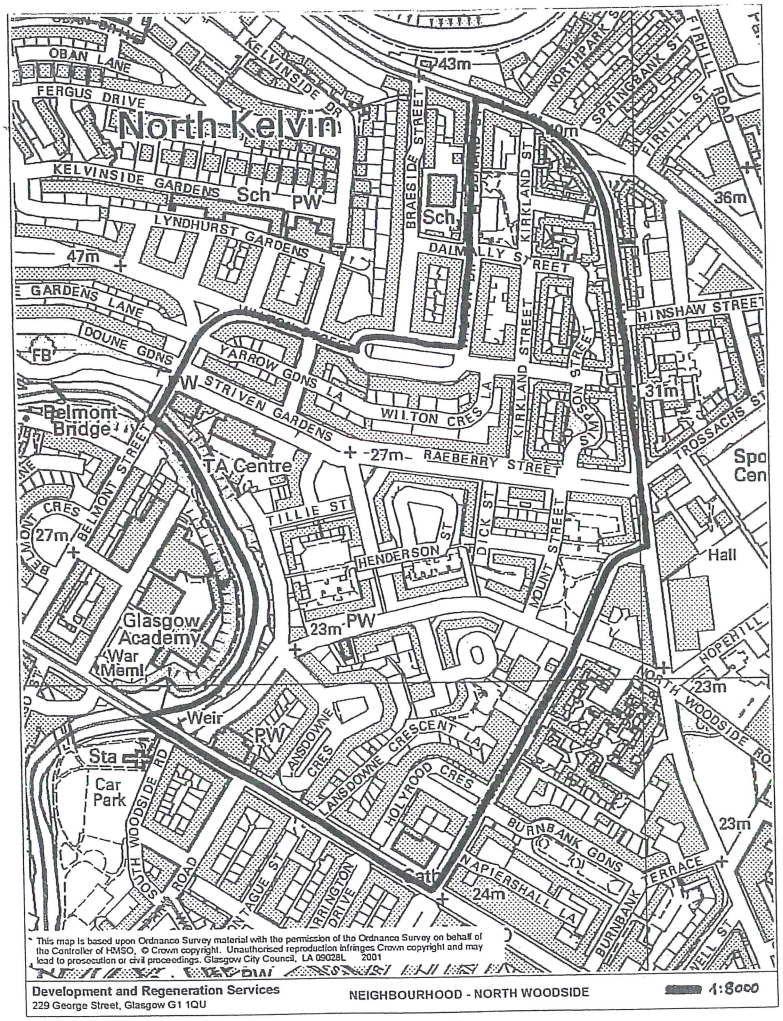


Figure 2-16: North Woodside area map

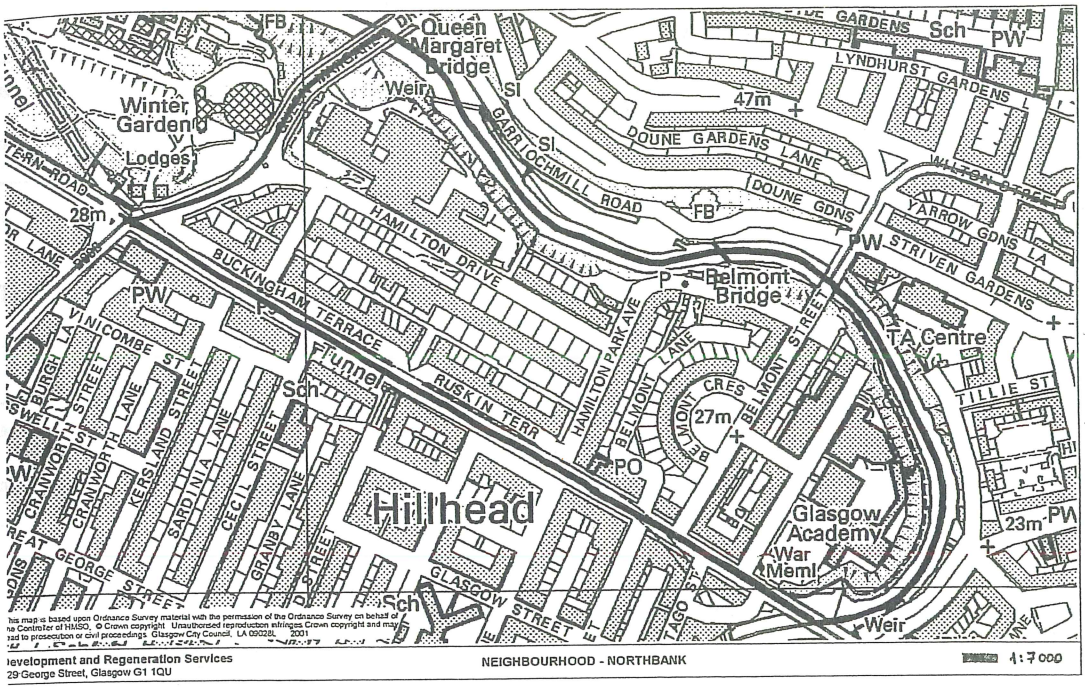


Figure 2-17: Northbank area map

Based on secondary sources of data (2001 Census), following tables provide key statistics regarding the household structure, age structure, marital status, occupations, economical activity, present type of home, ownership of home, travelling modes, and number of cars or vans in the West End (as comprised of the 6 areas shown on previous maps).

HHLD. STRUCTURE, THE WEST END total household number: 12 246	Single pensioner	Single adult (non pensioner)	2+pensioners	2 +adults, no children
%	9.68	35.2	2.9	23.67

HHLD. STRUCTURE, THE WEST END total household number: 12 246	Adults with dependent children	Adults with non-dependent children	Other
%	14.49	4.2	9.86

Table 2-4: Household structure in the West End (source: 2001 Census KS20, General Register Office for Scotland, © Crown copyright 2003)

AGE STRUCTURE, THE WEST END total number of residents: 24 554	0-14	15-29	30-44	45-59	60+
%	9.54	36.69	26.19	14.67	12.92

Table 2-5: Resident's age groups in the West End (source: 2001 Census KS02, General Register Office for Scotland, © Crown copyright 2003)

MARITAL STAT., THE WEST END total: 21 289	Single	Living with a partner/ married	Separated/ Divorced	Widowed
%	48.85	38.48	8.31	4.35

Table 2-6: Marital status of the West End population aged 16 and over in percentages (source: 2001 Census KS04, General Register Office for Scotland, © Crown copyright 2003)

OCCUPATIONS, THE WEST END total: 13 313	Professional etc.	Managerial technical	Skilled	Other
%	53.08	23.69	16.29	6.95

Table 2-7: Occupations of the West End residents aged 16 to 74 in percentages (source: 2001 Census KS12a, General Register Office for Scotland, © Crown copyright 2003)

ECONOMICALLY ACTIVE, THE WEST END total (economically active and inactive): 20 819	Employee (full time)	Employee (part time)	Self employed	Unemployed	Full-time student
%	42.68	6.07	8.45	3.48	7.78

Table 2-8: Job situation of the West End economically active residents aged 16 to 74 in percentages (source: 2001 Census KS09a, General Register Office for Scotland, © Crown copyright 2003)

ECONOMICALLY INACTIVE, THE WEST END total (economically active and inactive): 20 819	Retired	Student	Looking after home/ family	Permenently sick/ disabled	Other
%	6.38	15.38	2.91	4.1	2.78

Table 2-9: Job situation of the West End economically inactive residents aged 16 to 74 in percentages (source: 2001 Census KS09a, General Register Office for Scotland, © Crown copyright 2003)

PRESENT TYPE OF HOME, THE WEST END total: 12 717	Detached	Semi-detached	Terraced	Purpose-built block of flats or tenements, part of converted or shared house (incl. bed-sits)	Other
%	0.94	1.48	4.7	92.53	0.35

Table 2-10: Types of home in the West End (source: 2001 Census KS16, General Register Office for Scotland, © Crown copyright 2003)

OWNERSHIP OF HOME, WEST END total: 12 246	Owner occupied	Other (non-owner occupied)
%	61.82	38.18

Table 2-11: Ownership of home in the West End (source: 2001 Census KS18, General Register Office for Scotland, © Crown copyright 2003)

TRAVELLING MODES, WEST END total: 17 029	Private car	Public transport	Walk	Other
%	33.04	26.96	30.03	9.99

Table 2-12: Travelling modes for the West End population aged 16-74 in employment or studying (source: 2001 Census KS15, General Register Office for Scotland, © Crown copyright 2003)

NUMBER OF CARS OR VANS, WEST END total households: 12 246; total cars/vans: 9 346	None	One	Two or more
%	39.69	46.35	13.95

Table 2-13: Number of private cars or vans in the West End (source: 2001 Census KS17, General Register Office for Scotland, © Crown copyright 2003)

2.3.2 Bearsden

Bearsden is one of the mostly sought after residential suburb which is situated approximately 6 miles north west of Glasgow city centre. In contrast to the registered population decline within Glasgow City Council area, Bearsden, which is just outside City Council boundaries, showed 0.94 per cent increase of number of its inhabitants in the last intercensal period (see: 2001 Census, KS01).

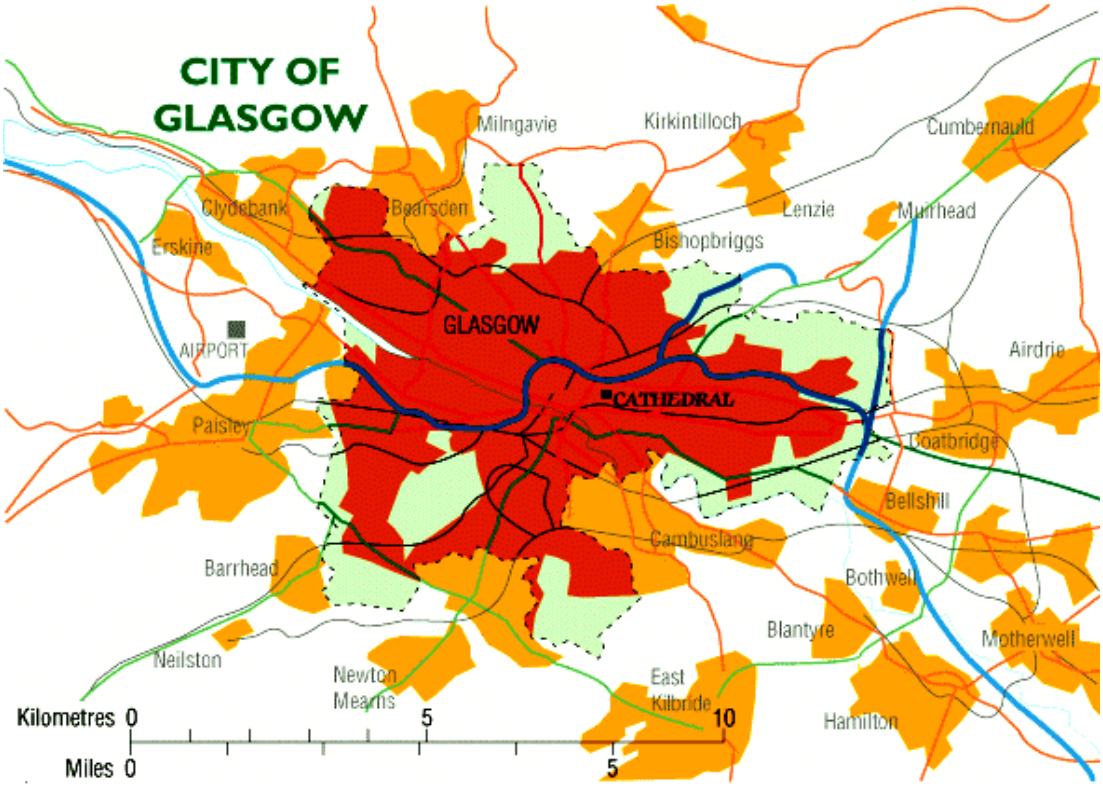


Figure 2-18: Map of Bearsden location in relation to Glasgow city centre

Looking at the history of this residential suburb, Bearsden became known under its current name in the years following the arrival of the railway in the 1863. Back then, it consisted of no more than a handful of houses known as New Kirk or Chapleton, both names reflecting the building of New Kilpatrick Parish Church in 1649 when the much larger parish of Kilpatrick was divided in two (see: McSkimming).

Since it was formed in the mid 17th century and for the next two hundred years, the settlement of New Kirk had not been more than a small hamlet adjacent to the church. However, with the nineteenth century population expansion of Glasgow, its affluent citizens began to search for suitable localities, reasonably close to city, to which they could retire each evening from the bustle of city life. They were undoubtedly attracted to Bearsden (or New Kirk as it is still was known) because of the acknowledged quality of its natural environment and the prior existence of a parish church to meet their spiritual needs.

Yet, a crucial factor of the 19th century development of Bearsden was the opening of the Glasgow and Milngavie Junction Railway in 1863. To New Kirk's other attributes could now be added a 'fast track' home for commuters each evening. The local station was given the name *Bearsden*, and this soon succeeded *New Kirk* as the name of the adjacent community. The name Bearsden was taken from a house close to the station site, but it seems also to have been a locality name, of wider application. Its origin has been the subject of much investigation and debate, all of it lacking in satisfactory conclusion.

During the twentieth century, Bearsden has expanded and developed in a more comprehensive and rounded way than many of the other commuter satellites of Glasgow. In addition to large villas, of individual design, big estates of bungalows and other private house types have been laid out, so that few sites are now left unoccupied.

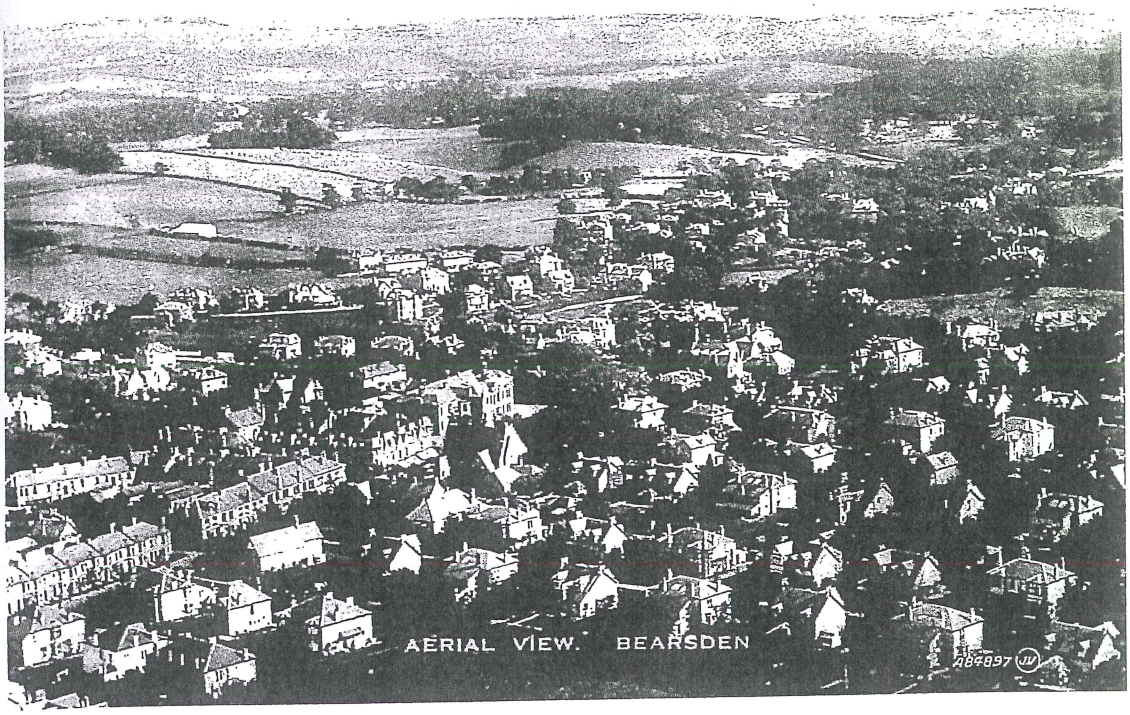


Figure 2-19: An aerial view of Bearsden, c1924, source: McKinlay and Hamilton, 1997:6

The identity of Bearsden was greatly strengthened in 1958, when it achieved burgh status. In 1975, Bearsden & Milngavie District Council succeeded the Burgh of Bearsden. Starting from 1996, Bearsden is a part of East Dunbartonshire Council, which was set up to provide local services for people of Bearsden, Bishopbriggs, Kirkintilloch, Lennoxtown, Lenzie, and Milngavie.

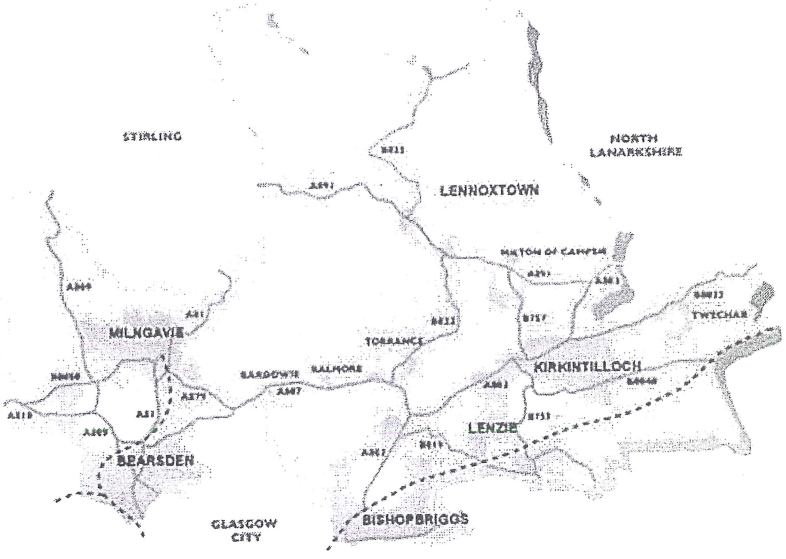


Figure 2-20: East Dunbartonshire map. Copyright © [2003], East Dunbartonshire Online available URL:http://www.eastdunbartonshire.gov.uk

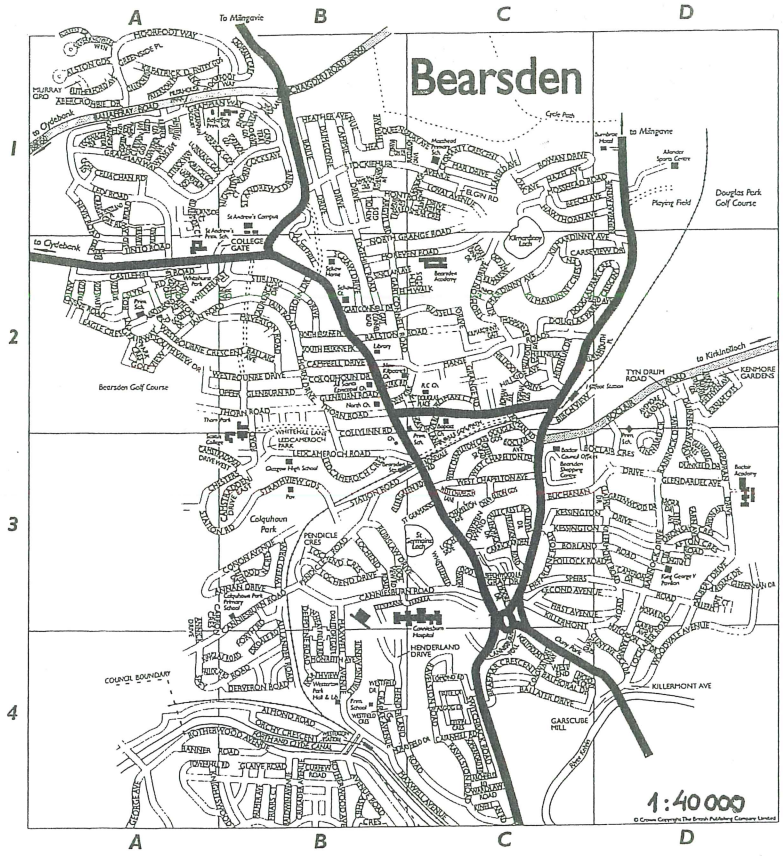


Figure 2-21: Bearsden map (source: East Dunbartonshire Street Atlas, p.23)

Bearsden area comprises of the following 6 wards: Baljaffray/ Mosshead, Bearsden, Castlehill/Thorn, Chapelton, Kessington, and Westerton.

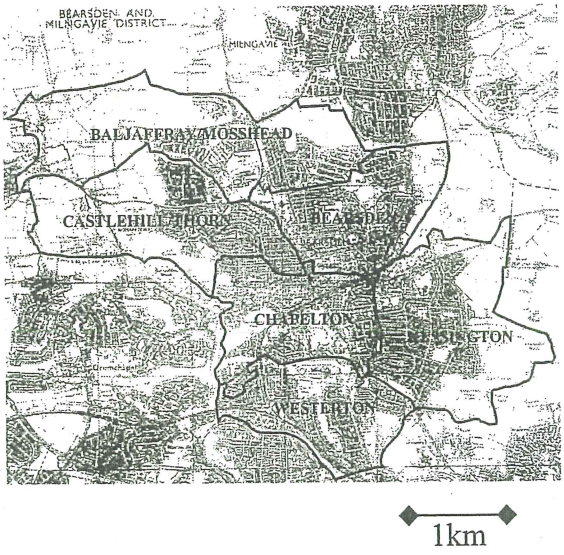


Figure 2-22: Bearsden wards

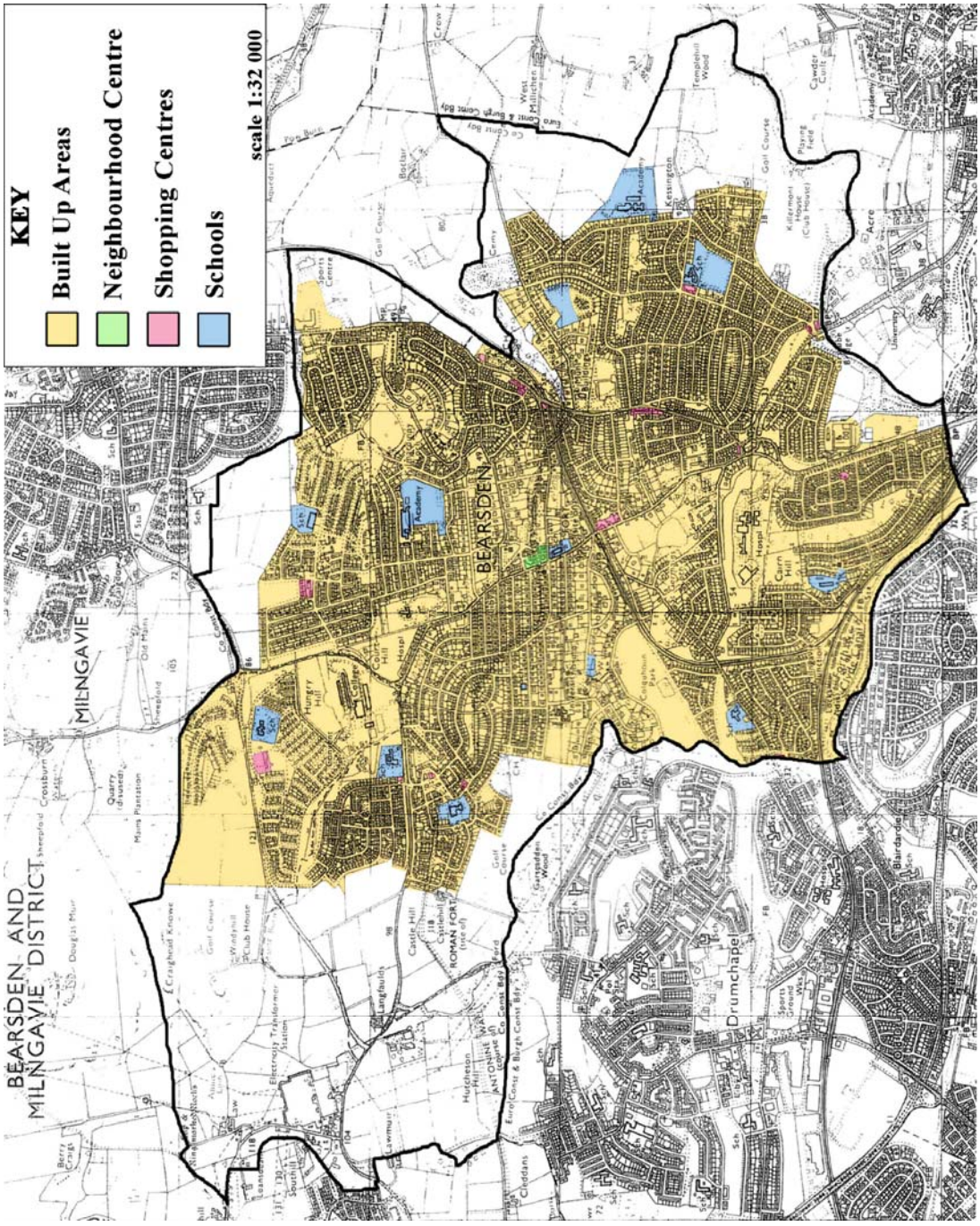


Figure 2-23: Bearsden map of land uses (sources: Ordnance Survey, Pathfinder 403 (NS 47/57) Clydebank and Milngavie © Crown copyright 1990, and Planning Department of East Dunbartonshire Regional Council)

Based on secondary sources of data (Voluntary Population Survey (VPS) 2001: East Dunbartonshire Population Profile and 2001 Census), following tables provide key statistics for Bearsden wards and for the whole area of Bearsden.

BEARSDEN AREA	area (ha)	population density	people	number of households	average household size
BALJAFFRAY/ MOSSHEAD	302	15.64	4726	1676	2.82
BEARSDEN	173.8	25.85	4493	1767	2.54
CASTLEHILL/ THORN	243.8	19.33	4715	1801	2.61
CHAPELTON	185	24.44	4521	1795	2.52
KESSINGTON	262.6	17.21	4520	1683	2.69
WESTERTON	163	28.09	4578	1725	2.65
total	1330.2	20.71	27553	10447	2.63
total *	1210	23.11	27967	10417	2.68

Table 2-14: Area, density, population, number of households and average household size in Bearsden (source: VPS 2001 East Dunbartonshire Population Profile and 2001 Census KS01 for total*)

HOUSEHOLD STRUCTURE, BEARSDEN total household number: 10417	Single pensioner	Single adult (non pensioner)	2+pensioners	2 +adults, no children
%	13.47	7.61	11.93	17.45

HOUSEHOLD STRUCTURE, BEARSDEN total household number: 10417	Adults with dependent children	Adults with non-dependent children	Other
%	32.56	13.43	3.54

Table 2-15: Household structure in Bearsden (source: 2001 Census KS20, General Register Office for Scotland, © Crown copyright 2003)

AGE STRUCTURE, BEARSDEN total number of residents: 27 967	0-14	15-29	30-44	45-59	60+
%	19.12	15.5	20.84	22.28	22.26

Table 2-16: Resident's age groups in Bearsden (source: 2001 Census KS02, General Register Office for Scotland, © Crown copyright 2003)

MARITAL STATUS, BEARSDEN total: 22209	Single	Living with a partner/ married	Separated/ Divorced	Widowed
%	22.85	63.85	5.24	8.06

Table 2-17: Marital status of Bearsden population aged 16 and over in percentages (source: 2001 Census KS04, General Register Office for Scotland, © Crown copyright 2003)

OCCUPATIONS, BEARSDEN total: 13 330	Professional etc.	Managerial technical	Skilled	Other
%	40.78	31.47	22.1	5.66

Table 2-18: Occupations of Bearsden residents aged 16 to 74 in percentages (source: 2001 Census KS12a, General Register Office for Scotland, © Crown copyright 2003)

ECONOMICALLY ACTIVE, BEARSDEN total (economically active and inactive): 20163	Employee (full time)	Employee (part time)	Self employed	Unemployed	Full-time student
%	40.57	12.26	9.42	1.91	4.24

Table 2-19: Job situation of Bearsden economically active residents aged 16 to 74 in percentages (source: 2001 Census KS09a, General Register Office for Scotland, © Crown copyright 2003)

ECONOMICALLY INACTIVE, BEARSDEN total (economically active and inactive): 20163	Retired	Student	Looking after home/ family	Permenently sick/ disabled	Other
%	16.04	5.4	5.26	2.81	2.08

Table 2-20: Job situation of Bearsden economically inactive residents aged 16 to 74 in percentages (source: 2001 Census KS09a, General Register Office for Scotland, © Crown copyright 2003)

PRESENT TYPE OF HOME, BEARSDEN total: 10601	Detached	Semi-detached	Terraced	Purpose-built block of flats or tenements	Other
%	44.32	32.34	10.73	11.61	1.01

Table 2-21: Types of home in Bearsden (source: 2001 Census KS16, General Register Office for Scotland, © Crown copyright 2003)

OWNERSHIP OF HOME, BEARSDEN total: 10417	Owner occupied	Other (non-owner occupied)
%	92.8	7.2

Table 2-22: Ownership of home in Bearsden (source: 2001 Census KS18, General Register Office for Scotland, © Crown copyright 2003)

TRAVELLING MODES, BEARSDEN total: 14719	Private car	Public transport	Walk	Other
%	65.74	20.97	5.84	7.45

Table 2-23: Travelling modes for Bearsden population aged 16-74 in employment or studying (source: 2001 Census KS15, General Register Office for Scotland, © Crown copyright 2003)

NUMBER OF CARS OR VANS, BEARSDEN total households: 10417; total cars/ vans: 14902	None	One	Two or more
%	11.12	44.11	44.77

Table 2-24: Number of private cars or vans in Bearsden (source: 2001 Census KS17, General Register Office for Scotland, © Crown copyright 2003)

3 Research Method

The “Random House Unabridged Dictionary” defines research as ‘diligent and systematic inquiry or investigation into a subject in order to discover or revise facts, theories, applications, etc.’ (Chadwick et al., 1984:9). In its widest sense, research is a communication process, and one of its main purposes is to get information that will help in decision-making. For scientists, these decisions relate to intellectual propositions, which they wish to discard or incorporate into theory.

3.1 Social Science Research

Research in professional social science areas has generally followed the traditional objective scientific method (Burns, 2000:3). Social science research can be understood as multistage, iterative process where each of its stages is interrelated to the theory as well as one to another. According to Nachmias & Nachmias (1992), there are seven major interrelated stages in social science research: *the research problem, the hypothesis, the research design, measurement, data collection, data analysis*, and *generalisation.*

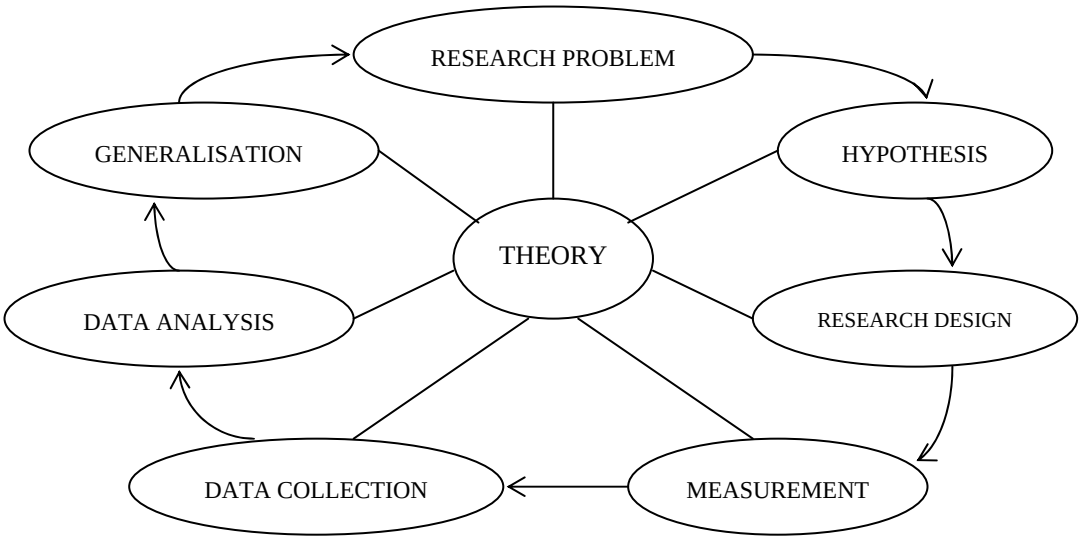


Figure 3-1: Process of social science research

3.1.1 Social Science Research Approach to Residential Preference Study

The debate on urban and suburban life has been a primary focus in the social science research for nearly 80 years (Adams, 1992b). In light of this debate, a number of residential preference studies has been conducted to date starting in the mid-1970s.

Social-psychological factors, life-cycle, length of residence and other factors that condition residential preferences as well as residential preference components themselves (e.g. attachment or residential mobility) are, in fact, social categories and their interrelationship has a character of social ties. Therefore, it is natural that social science research approach finds the application in residential preference studies.

The methodological approach of social sciences, which is applied to residential preference studies, is based on a random sample of population. Since it is often impossible, impractical, or extremely expensive to collect data from the whole population of research interest, a relatively small number of cases (a sample) is used as the basis for inferences to all cases (a population) (see: Nachmias & Nachmias, 1992:169-170).

In this research, data are collected by a previously well-prepared and tested questionnaire on residential preferences, which are distributed to a random sample of residents in the West End (urban) and Bearsden (suburban) neighbourhood. Methods of statistical analyses, which are applied to data samples in the two neighbourhoods, allow us to make inferences for the whole population of the West End and Bearsden regarding the relationships between the variables which characterise residents and two residential neighbourhoods on one side, and components of residential preference in each neighbourhood on the other (see: Figure 3-3).

With the statistical analyses of data related to the residential preference in the two types of neighbourhoods, it is then possible to decide whether the research hypotheses have been confirmed or falsified, and which amendments these conclusions bring to the theory on residential preferences of urban and suburban residents. However, as this is a social type of a study, the iterative methodological process it follows, presumes that generalisations made according to this study generate material for new hypotheses and new surveys (May 2001:91).

3.2 Conceptual Foundations of Research

Social science knowing and ordinary (common sense) knowing both rely on observation, but evidence in ordinary knowing has more biases. It is common that in ordinary knowing we try to give more weight to confirmations of our beliefs, and in contrast, scientific knowledge derives from the scientist's sceptical or conservative position toward the hypothesis (Nasar, 1998:23).

Scientific knowledge is provable by both reason and experience. This implies the social scientists operate at two distinct but interrelated levels: conceptual-theoretical and observational-empirical. Therefore, it can be said that 'social science research is the outcome of the interaction between these two levels' (Nachmias & Nachmias, 1992:27).

It is said that a *concept* is an abstraction representing an object, a property of an object, a certain phenomenon, or an abstract theoretical construct (Nachmias & Nachmias, 1992; Babbie, 1990). Concepts are *symbols* of phenomena and not concrete phenomena. To have proper functions, concepts should be clear, precise, and agreed-upon. As de Vaus (1993:48) points out 'the view that concepts do not have real or set meanings can lead to conceptual anarchy, and the most practical action would then be to make it very clear how we have defined a concept and to keep this definition clearly in mind when drawing conclusions and comparing the findings with those of other researchers'.

Concepts form the vocabulary of any scientific discipline's language consequently enabling communication. Apart from this major function of communication, concepts also serve: to introduce a perspective (a way of looking at empirical phenomena), as means of classification and generalisation, and as components of theories and thus explanations and predictions (Nachmias & Nachmias, 1992:27-28).

For this research, the main concept on which it was based was residential preference. This concept becomes clear and precise by using definitions, which can be either *conceptual* (they describe concepts by using other concepts) or *operational* (a set of procedures that describe the activities to be performed to establish empirically the existence or degree of existence of a phenomenon described by a concept).

3.3 The Transition from Conceptual to Observational Level of Research

Residential preference research was led by the social sciences model of transition from conceptual to empirical level. Nachmias & Nachmias (1992) describe this model as the one that involves 2 levels and 5 stages of scientific research.

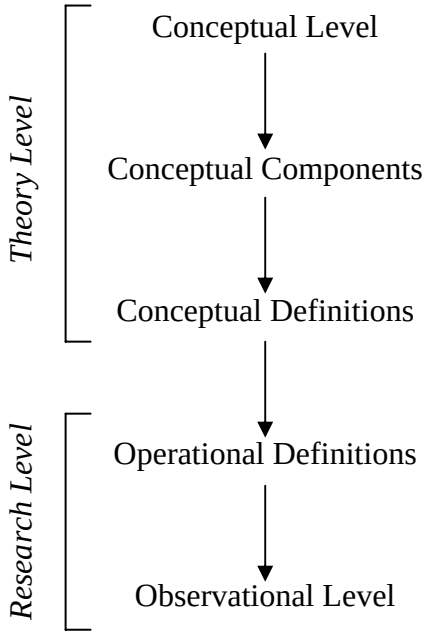


Figure 3-2: Levels and stages of scientific research, according to Nachmias & Nachmias (1992)

As incorporated in this research, the previous scheme implies that residential preferences are the conceptual level. They consist of 4 conceptual components: attachment, social and environmental context, physical planning and residential mobility. These components are described by conceptual definitions: community sentiment, community evaluation, urban and suburban neighbourhood's social and environmental context and physical planning issues, and residents' wishing to leave the present neighbourhood for a neighbourhood of the same or opposite type or not to leave the present neighbourhood at all. Operational definitions, which are a set of instructions explaining how a variable is measured, are the bridge between the conceptual-theoretical and empirical-observational levels. In this research, operational definitions included: socio-economic characteristics of residents, environmental characteristics of the residential neighbourhood, ecological conditions

and perceptions on those conditions and physical mobility of residents. Observational level consists of 2 case study neighbourhoods of urban and suburban type: the West End of Glasgow and Bearsden.

3.4 Basic Elements of Research

Basic elements of research help transforming an idea into concrete research operations. In social sciences, basic elements of research consist of research problems, variables, relations, and hypotheses.

3.4.1 Research Problem

> A research problem is an intellectual stimulus for an answer in the form of scientific inquiry.
>
> Nachmias & Nachmias (1992:51)

Research starts with a problem. At the very beginning of research, doubts are raised and the thinker is perplexed because the ideas are still unclear. Initially, a researcher may often have only a general and diffuse notion of a particular problem, but sooner or later the problem has to be clarified, otherwise it is not likely to get very far in solving it (Burns, 2000:25).

Although there are no set rules for locating a problem, generally speaking, research problems and hypotheses can be derived from theories, directly from observations, or intuitively, or from a combination of these. However, the greatest source of problems and hypotheses is the related literature (Nachmias & Nachmias, 1992:70; Burns, 2000:26).

Problems amenable to research are empirically grounded, clear, and specific. Although it might be argued that problems concerned with subjective preferences, beliefs, values, or tastes are not open to empirical research as *De gustibus non est disputandum* (Tastes cannot be argued about), certain subjective preferences or biases can be studied as factual problems to be investigated by means of scientific approach (Nachmias & Nachmias, 1992:52). Like physical scientists, social scientists seek to discover regularity and order. Social scientists look for regularity in social behaviour through careful observation and measurement, the discovery of relationships, and the framing of models and theories (Babbie, 1990:20).

The research problem of the study on residential preferences was initiated within a context of sustainability of urban areas when, as in the case of Glasgow, there is a long standing problem of population loss in a city and its decant to suburbia and other urban centres in the Forth and Clyde region. In confronting this problem, the special focus of investigation is on residential preferences of people who are able to exercise their residential choice. Therefore, by choosing the two case study areas: an urban area (the West End of Glasgow) and a suburban area (Bearsden), which are both attractive for the residents, the research problem was to analyse components of residential preference in each of the two areas and to discover their flexibility and adaptability in support of urban life.

A similar research problem was analysed in Talen's study (2001) where the primary research question was whether there was any reason to believe that affluent suburban residents could feel positive about other urban forms, and what if any dimensions of suburban preference would appear to be changeable.

For this research, the problem was extended to the variability of urban preference and the question of which components of this preference appear least changeable and thus encouraging for the present urban population to be retained by the city.

3.4.2 Variables

In the process of moving from the conceptual to empirical level, the main concept (residential preference) is converted into variables, because it is that 'as variables, the concept will eventually appear in hypotheses and be tested' (Nachmias & Nachmias, 1992:54).

A variable is an empirical property that takes two or more values. The variables in a study can be characterised by the type of values that can be assigned to them (Gravetter & Wallnau, 2000:25). In this respect, variables can be classified as: 1) quantitative variables and 2) qualitative variables. Quantitative variables are characteristics or features that are best expressed by numerical values (e.g. age of a person, number of people in a household etc.). Qualitative variables (e.g. people's gender, marital status, type of home etc.) are characteristics or qualities that are not numerical but can be verbally described. Qualitative variables are sometimes referred

to as *categorical* variables because they consist of categories in which the population of an area can be classified (see: Antonius, 2003:11).

For the purposes of the research, a distinction is made between independent and dependent variables. The variable that the researcher wishes to explain is the *dependent variable* or *criterion variable*. The variable expected to explain change in the dependent variable is referred to as the *independent variable* (also called *explanatory* or *predictor variable*). The independent variable is the presumed cause of changes in the values of the dependent variable. The dependent variable is the expected outcome of the independent variable (see: Nachmias & Nachmias, 1992:61).

3.4.3 Relations

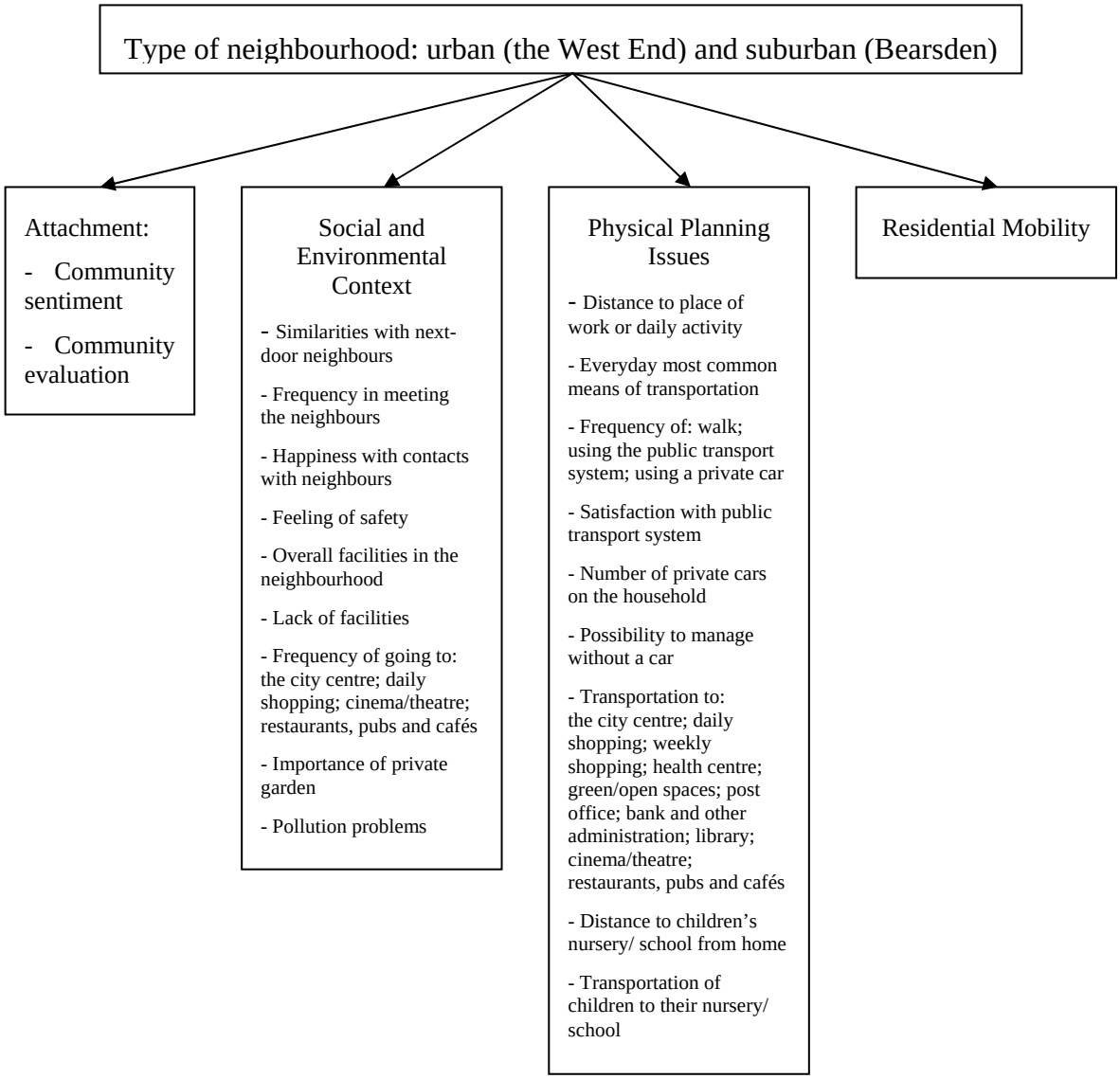
A *relation* in research always refers to a relation between two or more variables. If it is said that two variables are related, it means that there is something in common to both variables (Nachmias & Nachmias, 1992:60).

A statistical relation presumes the dependency of one variable from another (independent variable). It is the researcher who, according to the research objective, chooses which variable will be the dependent and which will be the independent one in testing their relation. An independent variable in one investigation may be a dependent variable in another, and the same researcher, working on different projects, may classify the same variables in different ways (Nachmias & Nachmias, 1996:56).

For example, in this research, residential preference components were analysed as the dependent variables in relation to the type of neighbourhood as the independent variable. Also, some of the residential preference components were analysed as the dependent variables in relation to the independent variables characterising residents or their residential neighbourhoods. On the other hand, it was also possible to test the relations between certain residential preference components themselves, when one of the components (e.g. residential mobility) was taken as the dependent variable and components like community sentiment and community evaluation were taken as the independent ones.

First of the two following figures presents the relationship between the type of neighbourhood on one side and the variables of residential preference components on the other.

Second figure presents the relationship between the independent variables of residents' and their environmental context characteristics and the dependent variables: community sentiment, community evaluation, and residential mobility. This figure also presents the relationship between the community sentiment and community evaluation as the independent variables and residential mobility as the dependent variable.



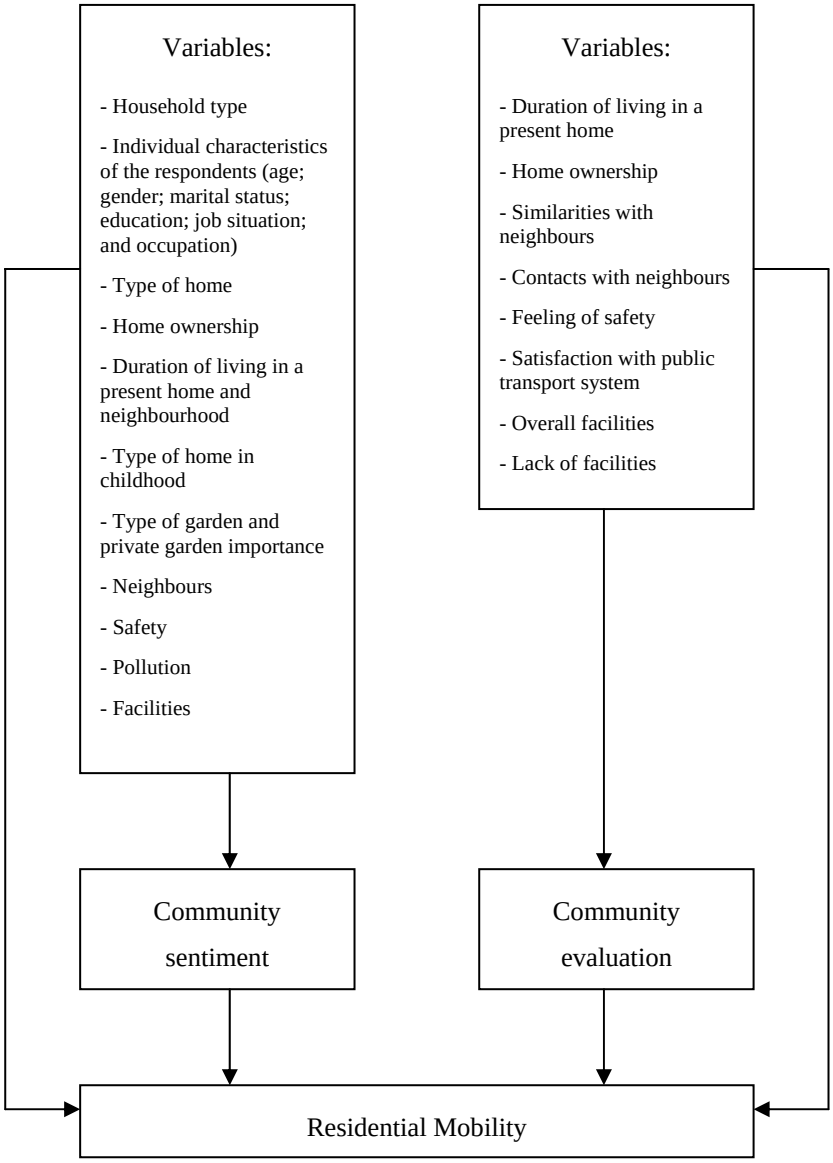


Figure 3-3: Graphical representations of relations between the independent variables of neighbourhood type, residents' and neighbourhoods' characteristics and residential preference components and the relations between residential preference components themselves

3.4.4 Hypotheses

Research problems are questions about relations among variables, and hypotheses are tentative, concrete, and testable answers to those questions.

A hypothesis is, in actuality, the operational definition of one of the propositions set forth in a theory. Typically, the hypothesis consists of a statement about a cause-and-effect relationship between an independent and dependent variable(s) (Adams and Schvaneveldt, 1991:41).

Scientists try to construct hypotheses so that experimental data can be unambiguously interpreted. Scientific approach does not seek to prove a hypothesis or a theory; 'it involves ruling out rival hypotheses and evaluating the degree to which data agree with a hypothesis' (Nasar, 1998:23).

Hypotheses are anticipations, guesses, tentative solutions to our problems and they mark the way in which our (scientific) knowledge progresses. These conjectures are controlled by criticism, that is, by attempted refutations, which include severely critical tests. According to Popper (1963: vii), 'they may survive these tests; but they can never be positively justified: they can neither be established as certainly true nor even as 'probable' (in the sense of probability calculus)'. As Nasar (1998:23) points out, 'the questions, assumptions, and methods of scientific work are explicit, public, and open to replication and falsification'. The public nature of science allows investigators to place and evaluate the findings in the context of other research and theories. All this contributes to building a scientific knowledge.

The process of hypothesis testing involves two statistical hypotheses: *research hypothesis (H_1)* and the *null hypothesis (Ho)*. The null hypothesis is one that is tested directly and is determined by the research hypothesis; which is really what one wants to know. Each research hypothesis is supported when its relevant null hypothesis is rejected. However, the proof of hypothesis is never definitive. The best one can hope to do is 'to make more or less plausible a series of alternative (research) hypotheses' (Miller, 1964:31).

In the research on residential preference of people in the West End (urban neighbourhood) and Bearsden (suburban neighbourhood), there were 8 research

hypotheses that were developed. They derive from the research problem, which is why people of similar income groups prefer the one or the other urban model, i.e. the West End as urban neighbourhood that is close to key recommendations on sustainable urban development, or Bearsden as suburban neighbourhood that is not close to these recommendations. These research hypotheses are also the tentative answers to the questions whether those people preferring suburban areas are prepared to accept denser residential forms, and conversely, whether urban residents show weaker residential preference in certain dimensions of their dominant urban preference.

H1: People who are older and who have been living longer in the present home/ neighbourhood are more emotionally attached to their residential neighbourhood.

This hypothesis is based on previous research findings and the common sense assumption that people develop emotional attachment to their residential neighbourhood with older age and longer duration of residing in the neighbourhood.

H2: Suburban residents are more emotionally attached to their residential neighbourhood than urban residents are to the urban neighbourhood.

With a generally higher stability and longer duration of residence of population in the suburban area, it was assumed that suburban residents might develop higher emotional attachment to their residential neighbourhood in comparison to urban residents.

H3: The feeling of safety and happiness with contacts with neighbours influence community evaluation.

This hypothesis is based on a vast research on factors influencing neighbourhood satisfaction where community bonds and feeling of safety in the residential neighbourhood appear to be on the top of the list.

H4: Urban residents express higher community evaluation than suburban residents.

Since community evaluation is related to rational assessment of the relative advantages and disadvantages of living in a particular neighbourhood, it is hypothesised that urban residents rationally evaluate more the advantages of their

residential neighbourhood than suburban residents do within their neighbourhood type.

H5: Urban residents are more satisfied with the overall facilities provided by their residential neighbourhood than suburban residents.

This hypothesis is based on logic that with higher residential densities, which exist in urban neighbourhood, it is possible to provide more viable and attractive facilities than in low-density suburban type of neighbourhood. Thus, it is natural to hypothesise that the overall satisfaction with neighbourhood facilities is greater in urban than in suburban neighbourhood.

H6: Distances from home to place of work/ daily activity are shorter for urban than for suburban residents.

The rationalizing behind this hypothesis is that an urban neighbourhood provides more local workplaces for its residents than suburban neighbourhood. Other population groups' daily activities (e.g. main daily activities of children and elderly population) may also be on shorter distances from home in the urban than in suburban type of neighbourhood.

H7: Suburban residents access facilities by a private car more often than by any other means of transportation.

Because suburbs generally are mono-use dormitories with only a minimum of local services and facilities, and also due to high mobility, it is hypothesised that suburban residents use a private car more frequently than any other means of transportation.

H8: Suburban residents are less likely to change their present type of neighbourhood than the urban residents.

This hypothesis is based on rationalizing that for some households with small children, the suburban neighbourhood may be more preferable so they move out of urban type of neighbourhood. After a longer stay in a suburban neighbourhood, their attachment to it grows and they are more likely to remain in it.

The research hypotheses H1 and H2 relate to community sentiment (emotional attachment) of residents in the two neighbourhoods.

The research hypotheses H3 and H4 relate to community evaluation as a residential preference component in the two neighbourhoods.

The research hypothesis H5 relates to the social and environmental context of residents in the urban and in the suburban neighbourhood.

The research hypotheses H6 and H7 relate to physical planning issues in the two neighbourhoods.

Finally, the research hypothesis H8 relates to residential mobility in the urban and in the suburban neighbourhood.

Those listed research hypotheses are the statements regarding the anticipations on relationships between the independent variables of residents and their neighbourhoods' characteristics and residential preference components (dependent variables) in the two types of neighbourhoods. They address the conflict between preferred living environments (low-density) and sustainable living environments (high density, compact).

After the process of operationalisation of the main research questions into research hypotheses, the next step in social science research regards the research design that will make it possible to test the hypotheses.

3.5 Research Design

The research design is a careful planning of the operations to be done to collect the data in a rigorous, systematic way, in accordance with the methods and ethics of social research (Antonius, 2003:26).

A research design is the program that guides the investigator in the process of collecting, analysing, and interpreting observations (Nachmias & Nachmias, 1992:97). It is a logical model of proof that guides the investigator in the various stages of research (see: Adams & Schvaneveldt, 1991; Nachmias & Nachmias, 1992).

Kerlinger (1964:276) notes two basic purposes of research design: 1) to control for variations, and 2) to provide answers (data) to questions being researched. According to the same author, 'design tells us, in a sense, what observations to make, how to

make them, and how to analyse the quantitative representations of the observations' (ibid. 276).

3.5.1 Components of a Research Design

The classic research design consists of four components: *comparison*, *manipulation*, *control*, and *generalization*. These research design components are necessary to establish that the independent and dependent variables are causally related.

Comparison is an operation that enables researchers to demonstrate that the independent and dependent variables are related, i.e. to demonstrate covariation (two or more phenomena vary together) (see: Nachmias & Nachmias 1992:104; 121).

Manipulation involves some form of control over the introduction of the independent variables, so that the investigator can determine the time order of the events (the assumed cause occurs first or changes prior to the assumed effect).

Control enables us to determine that the observed covariation is nonspurious (the effects of all relevant variables are controlled and the relation between the original two variables is maintained). The control component allows the researcher to rule out other factors as rival explanations of the observed associations between the independent and dependent variables (see: ibid: 104; 121).

Generalization, the fourth component, concerns the extent to which the research findings can be applied to larger populations and different settings (Nachmias & Nachmias, 1992:104).

3.5.2 Types of Research Design

There are several types of research design used in social research. The dimension underlying the most common classification of types of social research design is the *method of data collection*.

Although data collection is only one stage of research design, people often label an entire project on the basis of the way the data are gathered. On that ground, researchers like Antonius (2003:26) distinguish: *survey designs*; *experimental designs* and; *archival research designs*. With a similar criterion, Chadwick et al. (1984:33) make a distinction between the following types of research designs:

interview study (when source of data is interview), *participant observation study* (when the researcher lives among his or her informants and shares their lifestyle), and *experiment* (a project in which the researcher manipulates one factor and watches the effect on another).

The research on residential preferences in the two types of neighbourhoods took a form of survey design, which included the following operations: 1) composition of the questionnaire; 2) composition of the codebook; 3) determination of the sample; 4) collection of the data; 5) data entry, data organization and presentation, and data analysis and; 6) interpretation of results.

3.6 Measurement

Measurement is one of the most important topics in social science and the reason for this special concern for measurement is that 'many of concepts used in social science are subjective and illusive' (Anderson et al., 1983:231).

It was mentioned previously that, in order to bridge the conceptual-theoretical level with the empirical-observational level of research, operational definitions are used. They translate sets of instructions how a variable is to be measured and are therefore closely tied to the measurement process.

Measurement is a procedure in which a researcher assigns numerals - numbers or other symbols - to empirical properties (variables) according to rules (Stevens, 1951:8).

There are three basic concepts that are used to define measurement: numerals, assignments, and rules.

Numerals don't require having a quantitative meaning. They can be used only to identify phenomena, objects, or persons. When numerals are given quantitative meaning, they become numbers and 'as such they enable us to use mathematical and statistical techniques for purposes of description, explanation, and prediction' (Nachmias&Nachmias, 1996:156).

Assignment or mapping is linking the numerals or numbers with objects or events. Numerals or numbers are assigned to objects or events according to rules.

Rules determine the quality of measurement. The function of rules is to link the measurement procedure to reality because measurement is meaningless when it lacks an empirical basis. As Nachmias and Nachmias (1996:157) point out: 'rules establish *isomorphism* (similarity or identity of structure) between a certain numerical structure and the structure of variables being measured'.

Isomorphism means that the numerical system used is similar in structure to the structure of the concepts being measured. Physical sciences do not face a difficulty with isomorphism request because the relations between the concepts being observed and numbers assigned to the observations are quite direct. On the other hand, in social sciences, this similarity may not be quite obvious; hence the request for isomorphism is of priority concern, especially if it is necessary to perform quantitative analyses with the numerals that stand for the properties.

It is said that 'the two systems are isomorphic if they have similar structures and if the relations among their initial parts, or the operations they allow for, are also identical' (Nachmias & Nachmias, 1996:157).

The requirement of isomorphism between numerical systems and empirical properties (variables) leads to a distinction among different levels of measurement (scales of measurement). Therefore, we can distinguish three levels of measurement: *nominal*, *ordinal*, and *numerical scale* level. Each level of measurement allows us to perform certain statistical operations, and not others.

The nominal level of measurement is used to measure qualitative variables (Antonius, 2003:12). The nominal level is the lowest level of measurement. At this level, numbers or other symbols are used to classify objects or observations. This level of measurement is applied when a set of objects can be classified into categories that include all cases of that type (they are exhaustive) and when there is no case which can be classified as belonging to more than one category (they are mutually exclusive), and when each category is represented by a different symbol (Nachmias & Nachmias, 1996:159). In the nominal level of measurement, numerical values are assigned to categories as codes but no mathematical operations can be performed on the resulting codes and no ordering is implied (Blaxter et al., 2001:218).

The ordinal level of measurement is used when the observations are organised in categories that are ranked, or ordered so we can say that one category precedes another, but it is not possible to say by how much exactly (Antonius, 2003:12). As typical relations that are measured by this scale we can distinguish “higher than”, “greater than”, “more desired than” etc. For example, common practice in measuring attitudes is to use ordinal scale. Attitudes can be measured using a series of questions whose alternative answers are ranked in ascending or descending order (Nachmias & Nachmias, 1992:154). The scale used to write down an ordinal variable is often referred to as a Likert scale. It usually has a limited number of ranked categories: anywhere between three to seven categories, sometimes more (see: Antonius, 2003:13). A variable measured at the ordinal level can be either qualitative or quantitative.

The numerical scale level of measurement is used for measuring quantitative data but it can’t be used for measuring qualitative data. If, in addition to saying that one object or observation is greater than another, we can specify exactly how many units the former is greater than the latter, then we have reached the numerical scale level of measurement (see: Nachmias & Nachmias, 1996:162). Numerical scales are sometimes subdivided into *interval scales* and *ratio scales*, depending on whether there is an absolute zero to the scale or not.

The examples for an interval scale, in which the differences between points are consistently on the same size but the base point is arbitrary (there is not a true zero point), are Fahrenheit or Celsius scales for temperature. Addition and subtraction can be used, but not multiplication or division (Blaxter et al., 2001:218).

The ratio scale, apart from having differences between points consistently on the same size, also has a ‘true zero’. Variables that are measured by this scale are, for example, people’s age or number of children. This scale allows all basic mathematical operations.

It is important to note that variables that can be measured on higher levels can be measured on lower levels as well but the opposite is not possible. While the numerical scale level has all properties (equivalence, greater than, fixed interval), the

ordinal level lacks ‘fixed interval property’, and the nominal level has only ‘equivalence property’.

3.7 Data Collection and Sampling

In social science research designs there are a variety of ways to obtain data, and many different ways of data collection can be used within each type of design. The *case study* and research *survey* are heavily used by the mass media and are, therefore, quite well known. Less known to the public, but certainly common in research, are the *cross-sectional* and *longitudinal* approaches to research and data collection (see: Adams & Schvaneveldt, 1991:114). In some cases, research questions will require a *multi-method* approach using more than one method, e.g. a combination of case study and survey. In such cases, as May (2001:96) notices, ‘it is necessary to identify which parts of the research can best be accomplished through each of methods’.

A *case study* is confined to one or a few subjects (cases), the focus is usually broad in the type and quantities of variables that can be studied, and the approach tends to be in-depth and comprehensive. Whereas most research aims directly at generalised understanding, the case study aims initially at the comprehensive understanding of a single, idiosyncratic case (Babbie, 1990:33). Some common types of case studies are: community studies, trace studies, pilot surveys, detailed activity studies, and supplementary surveys (see: Casley & Lury, 1981:61-63).

Surveys consist in asking a sufficiently large number of people some specific questions, or in collecting data about a large number of statistical units (see: Antonius, 2003:26). This method refers to gathering of data or information from a sample or specific population, usually by questionnaire, interview, or telephone survey. The researcher does not manipulate independent variables or apply control conditions to the subjects under study. A survey is usually a cross-sectional study and should stem from a random sampling base (Adams & Schvaneveldt, 1991:115).

The *cross-sectional approach* is a design presenting a broad picture with analysis of a large group of multiple variables. The subjects are studied at one point in time with no attempt to assess development change. Data in this approach are most often collected by interview, by questionnaire, or by telephone contact (ibid.:117).

In the *longitudinal approach*, individual or a small number of statistical units are studied over a period of time, with the goal of describing or measuring the change or development of some process.

3.7.1 Social Surveys

Surveys have their origin in the positivistic tradition, though to describe surveys nowadays as 'positivist' is a clear oversimplification. Nevertheless, survey research employs a methodology that has logical similarities to that used in the natural sciences. While some surveys explicitly set out to test theories and some aim to construct theories, all begin with at least some theoretical assumptions (May, 2001:91).

Surveys are conducted for the purpose of collecting data from individuals about themselves, about their households, or about other larger social units. In this broad sense, surveys of some sort have been conducted ever since people began needing information on the distribution and size of human communities and their social characteristics. We can only speculate that primitive surveys consisted of global characterizations and very rough approximations (Rossi et al. 1983:2). In the UK, scientific social surveys have been in use starting from the late nineteenth century and Booth's monumental survey on Labour and Life of the People of London (see: Moser and Kalton, 1971:6).

In general, as Gardner (1978:1) points out: 'the purpose of a survey is to provide information'. A survey is a method of collecting information directly from people about their ideas, feelings, health, plans, beliefs, and social, educational, and financial background. A social survey presumes sharing one's thoughts, attitudes and experiences with a social researcher, which in principle can be regarded as a depreciation of one's privacy. The social survey is ultimately an intrusion into the private lives of individuals (Boruch and Cecil, 1979; Fox & Tracy, 1986).

It is said that a survey on demographic characteristics of people in a defined area is perhaps the least difficult type to conduct because it seeks the kind of information usually covered by a census, i.e. factual information (e.g. marital status, age, number of children etc.). On the other hand, surveys on people's opinions and attitudes are

often regarded as the most difficult kind of inquiry (see: Gardner, 1978:13). For clarifying the difference between an opinion and an attitude, it can be said that attitudes usually presume something rather more stable than fluctuating opinions – attitude is a set of opinions, which are reasonably consistent in their meanings and consistent over a period of time. Attitudes are reinforced by *beliefs* (the cognitive component) and often attract strong *feelings* (the emotional component) (see: Oppenheim, 1992:174-175). Personal preferences are related to people's attitudes, either as a part of them or as a compromise between conflicting attitudes (Gardner, 1978:13).

The survey on residential preferences involved both factual information on people in the two case study areas and information on their opinions and attitudes regarding their residential neighbourhood.

In doing a survey, it is important to be familiarised with the problem in general. The very first thing that must be done is to find out what is already known and what relevant surveys are being done or being planned elsewhere, because most of the time researchers are building on past work (May, 2001:96). It can be misleading, and in some cases actually harmful, to suppose that a researcher should begin fieldwork with an 'empty' mind. Certainly a researcher should remain unbiased at all times, but not clueless. (Gardner, 1978:17-18)

The planning of a social survey is a combination of technical and organizational decisions (Moser and Kalton 1971:41). Problems that can be faced in planning the social survey are: a) objectives and resources; b) coverage; c) collection of data; d) questionnaires (nine out of ten social surveys use a questionnaire of some kind, and the framing and arrangement of questions is perhaps the most substantial planning task); e) errors; f) fieldwork; g) processing and analysis; h) documents; and i) timing, cost and staffing (ibid.: p.43-45).

A survey can use a self-administered questionnaire that someone fills out alone or with assistance. Or a survey can employ an interview that is done in person or on the telephone (see: Fink and Kosecoff, 1998:1). Because people are different, the survey method used for population in one place may not be suitable for the population in another place; problems and solutions are seldom transferable (see: ibid.:17).

For the study on residential preferences in the two neighbourhoods of research interest, a questionnaire survey was employed as a method of gathering the data, and for that reason, more attention is dedicated to explaining this method.

3.7.2 Questionnaire Survey as a Method of Collecting Data

A questionnaire should be thought as an important instrument of research, as a tool for data collection, which has a function of measurement, and 'not as a set of questions which have been casually jotted down without much thought' (Oppenheim, 1992:100).

A well-designed questionnaire should: (*a*) meet the objectives of the research; (*b*) obtain the most complete and accurate information possible; and (*c*) do this within limits of available time and resources (Rossi et al. 1983:201).

3.7.2.1 Constructing the Questionnaire

In order to construct a questionnaire, the researcher has to decide how to translate detailed data needs into specific questions, and that is a highly technical, skilled exercise (see: Casley and Lury, 1981: 25).

The first step in designing a questionnaire is to define the problem to be tackled by a survey and hence to decide on what questions to ask. The foundation of all questionnaires is the question. The temptation is always to cover too much, to ask everything that might turn out to be interesting, but the questionnaire should be no longer than is absolutely necessary for the purpose (Moser & Kalton 1971:308-309).

The questionnaire must translate the research objectives into specific questions. The question must also motivate the respondent to provide the information being sought. According to Nachmias & Nachmias (1996:250) 'the major considerations involved in formulating questions are their content, structure, format, and sequence'.

Most questions can be classified as either factual questions or questions about subjective experiences. Factual questions are designed to elicit objective information from the respondent. Subjective questions are concerned with inclinations, preferences, prejudices, ideas, fears, and convictions. In general, subjective questions are much more complex to construct than questions about personal facts. Answers to

these questions are more sensitive to changes in wording, emphasis, and sequence than are those to factual questions (Nachmias and Nachmias, 1992:267).

For constructing the questionnaire, there are four types of questions that are in use: 1) open-ended questions; 2) closed-ended questions; 3) contingency questions; and 4) matrix questions.

Open-ended questions ask respondents to record their answers in full, in their own wording, not restricted to the choices offered by the researcher. This type of questions is used when the researcher cannot guess all the possible responses that respondents might make. Open-ended questions are often easy to ask, difficult to answer, and still more difficult to analyse. As a rule we employ a classification process known as *coding*, using the categories that are usually identified after looking through the range of responses actually received from the respondents to the open-ended questions (see: Oppenheim, 1992:113, Pallant, 2001:8).

In closed-ended (or restricted) questions, respondents are offered a set of response categories from which they must choose the one that most closely represents their view (Nachmias & Nachmias, 1992:267). Closed questions are easier and quicker to answer; they require no writing, and quantification is straightforward and therefore they permit comparability between people's answers. Disadvantages of closed questions regard the loss of spontaneity and expressiveness of the respondents, and perhaps the introduction of bias by 'forcing' them to choose between given alternatives and by making them focus on alternatives that might not have occurred to them. Therefore, some reports suggest that open questions are useful follow-up to closed questions (see: Oppenheim, 1992:114, May, 2001:103).

A contingency question applies only to a subgroup of respondents. The relevance of the question to this subgroup is determined by the answer of all respondents to a preceding filter question.

The matrix question is a method for organizing a large set of items that have the same response categories.

Other restricted ways of responding include ranking and rating (Gardner, 1978:43). Ranking is used in questionnaires when the objective is to obtain information regarding the degree of importance or the priorities that people apply to a set of

attitudes or objects (Nachmias & Nachmias, 1992:267). In ranking the items are listed and the respondent is asked to ‘put 1 against its first choice, 2 against its second choice’, and so on (see: Gardner, 1978:43).

3.7.2.2 Mail Questionnaire

Data collection in surveys is conducted mainly through three types of questionnaires: the mail or self-completion questionnaire, the telephone survey and the face-to-face interview schedule (May, 2001:97, Oppenheim, 1992:100).

The type of population, the nature of the research question and resources available will determine the type of questionnaire to be used. For the study on residential preferences, a postal (mail) questionnaire was applied.

The mail questionnaire is an impersonal survey method. This way of collecting data can be very useful under certain conditions, however, as any other method, it has both advantages and disadvantages (Nachmias & Nachmias, 1992:215).

Advantages of the mail questionnaire, as pointed out by Moser and Kalton (1971:257-259); Nachmias & Nachmias (1992:216); and Oppenheim (1992:102) are: 1) low cost (all it entails is the cost of planning, sampling, duplicating, mailing, and providing stamped, self-addressed envelopes for the returns, and it doesn’t require trained staff and interviewers); 2) reduction in biasing error (it avoids the problems associated with the use of interviewers); 3) greater anonymity (some people may answer certain questions more willingly and accurately in the absence of an interviewer); 4) considered answers and consultations (respondents have time to think about their answers and/or consult other sources); and 5) accessibility (it provides the potential for the surveyor to be able to have a widely spread sample, which is of special value).

The limitations of mail questionnaire regard issues like: 1) its inflexibility in either asking questions or receiving answers; 2) ambiguity whether it was completed by the right person or not and; 3) low response rate.

Probably the most serious challenge for the mail questionnaires is how to achieve an adequate response rate. For many mail surveys, the reported rates are much lower than for personal interviews. As Nachmias & Nachmias (1992:217) point out: ‘the

typical rate for a personal interview is about 95 percent, whereas that for a mail survey without follow-up is between 20 and 40 percent'. According to Gardner (1978:83), 'the low response rate from questionnaires is notorious; it ranges from 15-50 percent as against 70-98 percent for interviews'. Researchers who use mail questionnaires must almost always face the problem of how to estimate the effect the non-respondents may have on their findings (see: Nachmias & Nachmias, 1992:216-217, Oppenheim, 1992:102). However, researchers use various strategies to overcome the problem of low response rate, and these strategies include: 1) advance notification (letter that informs the respondent of the study in advance); 2) explanation of selection; 3) explanation of the sponsorship of the survey; 4) inducement to respond; 5) questionnaire format and cover letter; 6) type of mailing and timing of mailing (see: Nachmias & Nachmias, 1992:217, Oppenheim, 1992:104).

3.7.3 Sampling

Most of the time, researchers cannot afford to study each and every unit in a population, due to the impossibility of doing so or considerations of time and cost. Therefore, what is studied is actually a smaller group of units, called a sample (see: Antonius, 2003:7).

A population is the collection of all units that the researcher wishes to consider. More precisely, a population is the aggregate of all cases that conform to some designated set of specifications. For example, by the specifications "people" and "residing in Bearsden and in the West End of Glasgow", we can define a population consisting of all the people who reside in these two areas (see: Nachmias & Nachmias, 1992:170). A population has to be defined in terms of content, extent, and time (ibid.:192).

As Antonius (2003:8) stresses, 'the distinction between sample and population is absolutely fundamental'. Whenever a researcher does a computation, or makes any statement, it must be clear whether he/ she is talking about a sample (a group of units generally smaller than the population) or about the whole population.

The main task for making surveys useful is to learn how to sample - 'to select a small subset of a population representative of the whole population' (Fowler, 1993:4).

Generalizations are possible, however, only with a good sample, which can be drawn only with a good sample procedure (Backstrom & Hursh-César, 1981:53), but apart from that, a good sample depends on the sample size and the sampling frame (Fowler, 1993:10).

3.7.3.1 Sample size

There is not a single rule about how big the sample size should be. Usually, the selection of a sample size is a compromise between the precision required and the resources available.

Generally speaking, the larger the sample, the better because in that case the accuracy of results will be higher since sampling errors are minimised if most of the population is included in the survey. But as Gardner (1978:111) points out, 'a 100 percent sample is not essential providing the sample is scientific'. Increasing the sample size is one of the options in increasing the reliability of survey estimates. Yet, although the increase of the sample size will undoubtedly increase the precision of the sample results, it cannot guarantee elimination of any bias in the selection procedure.

Researchers like Gardner (1978), Fowler (1993), Nachmias & Nachmias (1996), have discussed three standard approaches to deciding on sample size, but none of those approaches should be regarded as completely appropriate in answering the question how big a sample should be.

The first approach is taking a fixed proportion of population, such as 5% or 10%.

A second approach to deciding on sample size is to follow what others have done in previous similar studies regarding this issue. This is an *empirical approach* and it is useful, especially for an inexperienced researcher, to be able to check his or her judgement about appropriate sample sizes against those of other social scientists.

A third approach to deciding on sample size is the statistical approach. Most statistical books provide formulae for the estimation of the sample size based on the precision required or standard error tolerated for a particular variable. However, this approach is not always possible, especially when the time and cost are of concern (Masnavi, 1998:121).

As Gardner (1978:111) suggests, there is no universally given prescription of ideal size of a sample; however, one thing is accorded - a minimum sample size. Among different interested parties there is a consensus that there should not be less than 30-40 subjects in the sample if we want to use them for an adequate statistical analysis. National Opinion Polls Ltd has adopted this definition of minimum sample size and it has been used in Political opinion surveys as well as by social scientists (see: Masnavi, 1998:122).

After careful consideration of all standard approaches to deciding on sample size, the survey on residential preference in the West End and Bearsden followed the empirical approach, i.e. it regarded what has been done previously in similar surveys. However, this approach also coincided with taking a fixed proportion of the total number of households as a sample size, which was roughly 1% from each neighbourhood. A statistical approach for deciding on sample size was not incorporated in this study because of time, financial and human resource limitations.

Regarding previous work of Masnavi (1998) and Handy (1992) it was decided to achieve a response by 100 sampling units in each case study area. Therefore, this study aimed to achieve ideally 200 completed questionnaires (100 in each case study area). The household was taken as a sampling unit and only one representative from each household was asked to respond to the questionnaire. With 10,447 households in Bearsden according to the 2001 Census data, approximately 1 percent of total number of households formed the sample. With 12,246 households in the West End of Glasgow, slightly more than 1 percent of total number of households was sampled. In practice, the samples were of larger size (approximately by 20% larger) than the minimum size required. This was due to the posting of mail questionnaires and the prediction on the response rate. In order to obtain 100 completed questionnaires, 350 to 400 questionnaires were posted to respondents in each case study area.

3.7.3.2 Sampling frame

The sampling frame is the set of sampling units that has a chance to be selected, given the sampling approach that is chosen (Fowler, 1993:10). As Nachmias & Nachmias (1992:173) point out: ‘every aspect of sample design – the population coverage, the stages of sampling, and the actual selecting process – is influenced by

the sampling frame'. The availability of suitable sampling frames, i.e. lists, registers, or other records, has an implication on selection of sampling units and ultimately the sample (Gardner, 1978:108).

For the survey on residential preferences of people in the West End and Bearsden, lists and address books were predominantly used as sampling frames. For example, in the West End case study, the sampling frame in a form of a list was obtained by systematic sampling. This means that the list of 400 sampling units consisted of every *K*th sampling unit of the population selected after the first sampling unit was selected at random from the total of the West End areas' sampling units. In Bearsden, an address book served as the basic sampling frame to which stratified random sampling was applied (see: Fink & Kosecoff, 1998:43). This means that all the households in Bearsden (registered in the address book) were firstly subdivided into six subgroups (strata) according to the areas that form this neighbourhood. Then, 58 to 59 randomly chosen households from each strata (total number: 350) formed the Bearsden sample.

Despite using classical sampling frames with addresses of households in each case study area, it is important to stress that for this study, a great emphasis was placed on anonymity of the respondents. As previously discussed, the anonymity of postal questionnaires induces higher response rates. Therefore in the questionnaire, the respondents were neither asked about their name and address other than neighbourhood (the West End or Bearsden), nor was any reference number put on any of the questionnaires.

3.7.4 Pilot work

The pilot work, or pre-testing of questionnaires is conducted prior to sending out the final version of the questionnaire to the respondents. Questionnaires have to be composed and tried out, improved and then tried out again, often several times over, until the researcher is certain that they can do the job for which they are intended. This whole lengthy process of designing and trying out questions and procedures is usually referred to as *pilot work* (Oppenheim, 1992:47).

The pilot work can be regarded as the dress rehearsal of the final questionnaire and, like a theatrical dress rehearsal, it is preceded by a series of preliminary tests and trials (Moser and Kalton, 1971:48). The earliest stages of the pilot work are likely to be exploratory, and are primarily concerned with the conceptualisation of the research problem. They might involve lengthy, unstructured interviews, talks with key informants, or the accumulation of essays written around the subject of the enquiry (Oppenheim, 1992:51).

In this study, the questionnaire on residential preferences was given in a developing stage for consultation with academic staff[1] and a statistician[2] with experience in questionnaire design.

Having applied specialist advice to rectify the questionnaire structure and contents, in the next stage, the pilot survey was conducted among a small selected number of the author's friends, neighbours, and university employees. There was an effort to target different groups of people: men, women, single persons, family persons, students, retired, educated and non-educated representatives. From the exploratory interviews with them, which were tape-recorded, the major aim was to identify the questions that could be misread or misunderstood. With this respect, ultimately, some necessary modifications were made resulting in a final questionnaire form.

3.7.5 Structure and Content of the Final Questionnaire

The final Questionnaire on residential preferences (which can be found in the Appendix A of this thesis) consists of nine A4 pages including a covering letter. In terms of questionnaire content, there were 38 main questions, out of which four were open-ended, two were contingency questions, three were matrix questions and the rest were closed-ended questions. All questions and tick boxes were coded. This

[1] There were two consultants from Universities: Dr Stephen Tagg from the Department of Marketing at the University of Strathclyde in Glasgow and Professor Peter Aspinall from the Department of Building Engineering and Surveying at the Heriot-Watt University in Edinburgh.

[2] The statistician who was consulted was Jan Freeke from Glasgow City Council, Department of Development and Regeneration Services.

design aimed to facilitate entering the data to the software (SPSS 10.0), without the need for the transcription of codes, except for the open-ended questions.

Regarding the content of the final questionnaire, all questions were organised under five main sections.

Section 1 (Introduction) of the questionnaire included the questions related to socio-economic characteristics of the respondents (age, gender, marital status, highest achieved level of education, current occupation and job situation) as well as questions on other household members (their number, age and gender).

Section 2 (Respondent's environment) of the questionnaire aimed to gather the information on: respondent's present type of home; tenancy; duration of living in a present home and neighbourhood; type of home and neighbourhood in the childhood; emotional attachment to the neighbourhood; total neighbourhood satisfaction; type of garden adjacent to the respondent's home; the importance of having a private garden; similarities with the next-door neighbours; frequency in meeting the next-door neighbours; happiness with contacts with neighbours; perceived safety in the residential neighbourhood; and perceived pollution in the residential neighbourhood.

Section 3 (Transportation) included the questions on physical mobility of residents and children living in their household. Those questions were about: respondent's everyday most common means of transportation; distance to place of work or daily activity; frequency in: walking, using a public transport system and using a private car; satisfaction with the public transport system organisation in the neighbourhood; number of private cars in the household; possibility to manage without a private car; need for an additional car; children's means of transportation to their nursery/ school; and the distance of the children's nursery/ school from their home.

Section 4 (Facilities and Amenities) of the questionnaire referred to the frequency of using certain facilities and the means of transportation used to reach those facilities; happiness with the facilities provided by the neighbourhood; a perceived lack of certain facilities in the neighbourhood; and the top three amenities of the neighbourhood.

Section 5 (Residential mobility) included only one question on residential mobility intentions of the respondents. This was an open-ended question, but the answers

were coded in three main categories: 1) I would like to move to the opposite type of neighbourhood to the present one or in and out of Glasgow; 2) I would like to move within the same type of neighbourhood and; 3) I don't want to leave my neighbourhood at all.

Finally, a space was provided for the respondents to make any general or specific comments they would have wanted to make on topics covered by the questionnaire.

3.7.6 Survey Implementation

The survey implementation deals with administrative work, response rates and data processing procedure.

The administrative work of the questionnaire survey is linked to the covering letter. The aim of the covering letter is to provide the potential respondent with brief information about the nature of the research that is undertaken, who is conducting the survey and who should be addressed in case of need for further information. The covering letter emphasizes the anonymity of the respondents, and it promises confidential treatment of the data collected.

The administrative work also relates to the distribution of questionnaires, which began on 17th of November 2001 and lasted for approximately 6 months. All the questionnaires were sent out with stamped, self-addressed envelopes for the returns, as an incentive for higher response rates. In the end this approach achieved good response rates in each neighbourhood, which fitted the range in which response rates were expected in the first place.

The response rate is a basic parameter for evaluating a data collection effort. It is a percentage of people who responded out of all people to whom the questionnaire was sent. The denominator includes all people in the study population who were selected taking into account both respondents and those who did not respond for whatever reason: refusals, language problems, illness, or lack of availability (see: Fowler, 1993:39).

The total number of questionnaires that were sent in both case study areas was 750 and the total number of respondents was 246 for both the West End and Bearsden. That makes a total response rate of 32.8%. As observed individually for each

neighbourhood, the response rate in the West End was 32% of the 400 questionnaires that were sent, and 128 were returned completed, whilst in Bearsden, the response rate was slightly higher (33.7%) because out of 350 questionnaires that were sent, 118 were returned completed.

Information from the completed questionnaires cannot be entered directly into the statistical software package SPSS, which stands for *Statistical Package for the Social Sciences*. Before computerisation of information obtained from the questionnaires, as a data processing procedure, it is necessary to prepare a *codebook*.

A codebook is 'a summary of the instructions the researcher will use to convert the information obtained from each subject or case into a format that SPSS can understand' (Pallant, 2001:12).

The codebook for the questionnaire on residential preferences can be found in the Appendix B of this thesis. All questions from the questionnaire are translated into variables and for each of those variables, the codebook enlists the following information: variable name, SPSS variable name, which is an abbreviated variable name, and coding instructions. This procedure allows us to employ data from the questionnaires in the SPSS program and to know in advance which statistical methods may be used in the analyses according to the variable's type and level of measurement.

3.8 Statistical Procedures Applied in the Research

Once the data is collected and transferred to codes amenable to quantitative analyses, the statistical procedures can be applied.

Sometimes the survey data are about a character or quality (e.g. respondent's gender, type of home, transportation means etc.) and sometimes the data are something measurable with numbers, such as the respondent's age. In both cases, the data can be treated numerically: for instance it is possible to count how many people are of male or female gender, or it is possible to calculate the average age of a group of people. This means that when a social or human phenomenon is quantified in an appropriate way, it is possible to ground the analysis of it on figures, or statistics.

Quantitative methods (statistical procedures), which are used to analyse data numerically, allow researchers to describe the phenomenon with some accuracy, to establish whether there are relationships between some of the variables, and even to predict the evolution of the phenomenon (Antonius, 2003:2).

Statistical procedures can be classified into two main disciplines: descriptive statistics and inferential statistics. All the procedures are included in the SPSS Version 10.0, which was applied in this research.

3.8.1 Descriptive Statistics Procedures

The descriptive statistics methods and techniques enable the researcher to summarise and organise large quantities of data in an effective and meaningful way, highlighting the most important numerical features of the data. As Nachmias & Nachmias (1992:340) point out, 'descriptive statistics provide tools for describing collections of statistical observations and reducing information to an understandable form'. It is important to stress that descriptive statistics procedures describe only the characteristic of the sample.

Descriptive statistics procedures depend on the type of variables deriving from the questionnaire. For categorical variables, the descriptive statistics involve procedures for obtaining the *frequency distribution*. A frequency distribution can be structured either as a table or a graph, but in either case the distribution presents the same two elements: 1) the set of categories that make up the original measurement scale and; 2) a record of the frequency, or the number of individuals in each category (Gravetter & Wallnau, 2000:41). For continuous variables, the most common method for summarising and describing a set of scores is to compute an average. In statistics, the concept of an average is called *central tendency*. Central tendency measures (mean, median, standard deviation) aim to obtain a single value that provides a reasonably accurate description of the entire group of scores. Descriptive statistics also provide some information regarding the distribution of scores on continuous variables (e.g. skewness and kurtosis). Normal distribution of continuous variable's scores is often required by inferential statistics techniques. Apart from using skewness and kurtosis values for assessing the normality, some other (graphical) procedures of descriptive statistics (e.g. histograms) can be used to inspect the shape of distribution.

A thorough report on descriptive statistics results regarding the research on residential preferences can be found in the Chapter 4.

3.8.2 Inferential Statistics Procedures

Inferential statistics procedures aim at inferring (i.e. drawing conclusions on) some numerical character of a population when only a sample is given. The sample to draw such conclusions must be representative and this is more likely to be achieved by a random sample (see: Antonius, 2003:8).

Inferential statistics procedures can be divided into two major groups: 1) techniques used to explore relationships among variables and 2) techniques used to explore differences among groups (see: Pallant, 2001:99). In each case, statistical procedures can be either of parametric or non-parametric type.

The parametric procedures (e.g. Pearson's correlation, t-test, One-way ANOVA) make assumptions about the population that the sample has been drawn from, and these assumptions often include the shape of the population distribution (e.g. normal distribution).

On the other hand, non-parametric procedures do not have such stringent requirements and do not make assumptions about the underlying population distribution. However, in comparison to parametric procedures, the non-parametric ones are less sensitive, and therefore may fail to detect differences between groups when they actually exist. Non-parametric procedures are used when the data is categorical or when the samples are very small so data do not meet the assumptions of parametric procedures.

3.8.2.1 Statistical techniques to explore relationships among variables

Statistical techniques for detecting and describing relationships among variables, which researchers engaged in non-experimental research design use, are based on correlation.

These techniques were applied in the research on residential preferences in order to: 1) explore the association between pairs of variables (e.g. Pearson's correlation, Chi-

Square Test) and 2) predict scores on a dependent variable from scores of a number of independent variables (e.g. Multiple regression).

The Pearson's correlation measures the degree and direction of the linear relationship between two variables. The Pearson's correlation describes the strength and the direction of relationship between two variables of continuous type or between one continuous and one dichotomous (two values) variable. The Pearson's correlation is a parametric procedure and its non-parametric alternative is the Spearman's correlation. This latter test is applied if there is no linear relationship between two continuous variables.

The Chi-Square Test is a non-parametric procedure which aims to explore the relationship between two categorical variables. Each of those categorical variables can have two or more categories.

The Multiple regression is based on correlation but allows a more sophisticated exploration of the interrelationship among a set of variables. This procedure requires two or more continuous independent variables and one continuous dependent variable. The Multiple regression can tell how well a set of variables is able to predict a particular outcome. Also, this method can tell which variable in a set of variables is the best predictor of an outcome.

The above described techniques found application in this research and their results can be seen in the Chapter 5. For example, the Pearson's correlation was applied in testing the relationship between the emotional attachment to the residential neighbourhood and residential mobility. The Chi-Square Test, for instance, was applied in testing the relationship between the type of neighbourhood and similarities between the neighbours. Finally, the Multiple Regression was applied in predicting the total neighbourhood satisfaction by a set of 5 independent variables (happiness with contacts with neighbours; feeling of safety; satisfaction with public transport system; overall facilities; and lack of facilities).

3.8.2.2 Statistical techniques to compare groups

There is a whole family of techniques that can be used to test significant differences between groups of independent variable in respect to dependent variable(s).

Some of those techniques were used in the research on residential preferences and the choice of a particular technique to compare groups depended on the type of variables, their number and number of groups they included.

Some of the key features of each of those applied techniques will be given in the following text.

The Independent samples t-test is a statistical procedure used when we want to compare the values on some continuous variable for two different groups or conditions. This technique requires one categorical independent variable with two groups only and one continuous dependent variable.

The One-way analysis of variance (ANOVA) is applied when we want to compare the values of continuous dependent variable for three or more groups (levels) of the independent variable. The One-way ANOVA requires one categorical independent variable with three or more distinct categories and one continuous dependent variable. The One-way ANOVA is a parametric procedure and its non-parametric alternative is the Kruskal-Wallis Test.

The Chi-Square Test, which is previously described as a non-parametric test used for exploring the relationships among categorical variables, can also be used as a substitute for the t-test or ANOVA, in cases when the dependent variable is of a categorical type.

The Multivariate analysis of variance (MANOVA) is an extension of analysis of variance for use when there is more than one dependent variable. This procedure compares two or more groups of independent variable in terms of their means on a group of dependent variables. MANOVA requires one categorical independent variable with two or more categories and two or more continuous dependent variables.

The results of applying all these techniques to the research on residential preferences can be seen in the Chapter 5. For instance, the t-test was applied for testing the relationship between the resident's gender and emotional attachment to the residential neighbourhood. As an example, the One-way ANOVA was applied for testing the relationship between the resident's feeling of safety and community evaluation. The non-parametric alternative to this test (the Kruskal-Wallis test) was

applied in testing the relationship between the type of household and emotional attachment to the residential neighbourhood. The Chi-Square Test, as a substitute for the T-test or One-way ANOVA when these tests could not have been applied, was used, for example, in testing the relationship between the respondent's age group and residential mobility. Finally, MANOVA was applied in testing the relationship between the type of neighbourhood and frequencies of visiting: city centre; daily shopping; cinema/ theatre; restaurants, pubs and cafés.

4 Preliminary Analyses

After the data set was thoroughly checked for errors and the nature of variables was explored, the following step would be the process of *preliminary analyses*. This is in readiness for conducting specific statistical techniques to address our research questions (Pallant, 2001).

Preliminary analyses presume the procedures required to obtain descriptive statistics for our data. Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data.

One should clearly distinguish descriptive statistics from *inferential statistics*. While the latter helps reaching conclusions that extend beyond the immediate data alone, the descriptive statistics is simply describing what our data shows.

Descriptive statistics are used to present quantitative descriptions in a manageable form. Descriptive statistics help us to generalise large amounts of data in a sensible way. Each descriptive statistics reduces lots of data into a simpler summary (Trochim, 2002).

Prior to doing many of the statistical analyses (e.g. t-test, ANOVA, correlation) it is important to check if we are violating any of the *assumptions* made by the individual tests. Testing of assumptions usually involves obtaining descriptive statistics on our variables. The most common descriptive statistics include the mean, standard deviation, range of scores, skewness and kurtosis (Pallant, 2001). For obtaining descriptive statistics, statistical program SPSS for Windows, version 10.0 has been used. There were however, different procedures in obtaining outputs of preliminary analyses, which depended on the type of variables (i.e. categorical or continuous).

4.1 Descriptive Statistics of Surveyed Data for the West End and Bearsden

While the numerical values of Descriptive Statistics obtained from **Frequencies** (for categorical variables) or **Descriptives** (for continuous variables) provide useful information concerning our samples in the West End and Bearsden, some aspects are better explored visually.

Therefore, the following sections will contain both numerical values of descriptive statistics and different types of graphs (e.g. histograms, bar graphs, boxplots, and line graphs) representing the data of preliminary analyses.

Descriptive Statistics are given for all the variables listed in the Codebook of the Questionnaire on Residential Preferences. As a reference point, before descriptive statistics for each variable, there will be stated the same number and variable name as used in the Codebook. The Codebook can be found in Appendix B of the Thesis.

4.1.1 Descriptive Statistics for Socio-economic features in the two Neighbourhoods*

Before proceeding with descriptive statistics for socio-economic features of respondents in the two neighbourhoods, the first piece of information which is required is the number (and percentage) of respondents in each neighbourhood.

2. Neighbourhood

Statistics

Neighbourhood

N	Valid	246
	Missing	0
Minimum		1
Maximum		2

* the West End and Bearsden are referred to as the two Neighbourhoods

Neighbourhood

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban, West End	128	52.0	52.0	52.0
	Suburban, Bearsden	118	48.0	48.0	100.0
	Total	246	100.0	100.0	

Table 4-1: Descriptive Statistics for the neighbourhood type

From the outputs shown above it is observed that, in the total sample of both neighbourhoods, there are 128 respondents from the West End (52.0 per cent) and 118 respondents from Bearsden (48.0 per cent). This means that group sizes are roughly equal.

The next two descriptive analyses refer to households of respondents: the number of household members and the type of household. These categorical variables will be presented both numerically and in the form of bar graphs.

3. Household size

Household size

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	1	33	25.8	25.8	25.8
		2	40	31.3	31.3	57.0
		3	26	20.3	20.3	77.3
		4	22	17.2	17.2	94.5
		5	7	5.5	5.5	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	1	20	16.9	16.9	16.9
		2	49	41.5	41.5	58.5
		3	21	17.8	17.8	76.3
		4	23	19.5	19.5	95.8
		5	5	4.2	4.2	100.0
		Total	118	100.0	100.0	

Table 4-2: Descriptive statistics for household sizes in the West End and Bearsden

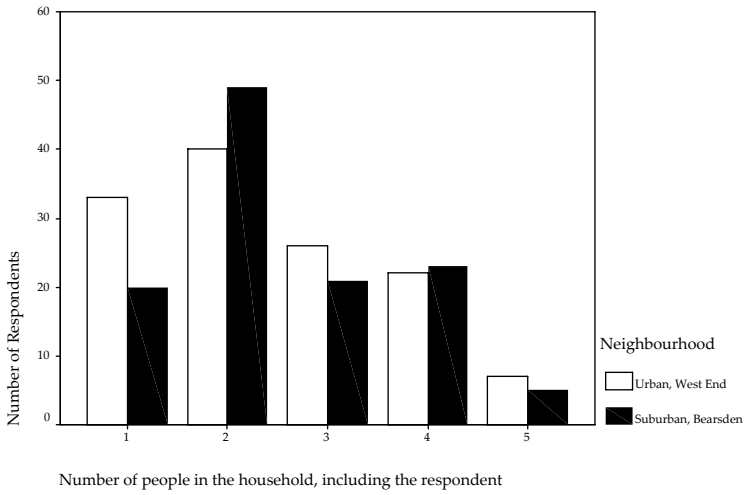


Figure 4-1: Bar graph for household sizes in the West End and Bearsden

From the results of preliminary analyses on household sizes in both neighbourhoods, it can be noticed that in the West End most of the respondents came from households with one or two members, and in Bearsden majority of respondents were from the households with two members.

4. Household type

Household type

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Single adult household (less than 60yrs old)	18	14.1	14.1	14.1
		Two or more adults (44yrs old and younger) without children	34	26.6	26.6	40.6
		Parent(s) living with at least one child of 14yrs and under	34	26.6	26.6	67.2
		Parent(s) living with children of 15yrs and above	10	7.8	7.8	75.0
		Two or more people of middle to old age (45yrs+)	18	14.1	14.1	89.1
		Single old household	14	10.9	10.9	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Single adult household (less than 60yrs old)	5	4.2	4.2	4.2
		Two or more adults (44yrs old and younger) without children	4	3.4	3.4	7.6
		Parent(s) living with at least one child of 14yrs and under	30	25.4	25.4	33.1
		Parent(s) living with children of 15yrs and above	17	14.4	14.4	47.5
		Two or more people of middle to old age (45yrs+)	47	39.8	39.8	87.3
		Single old household	15	12.7	12.7	100.0
		Total	118	100.0	100.0	

Table 4-3: Descriptive statistics for the household type in the West End and Bearsden

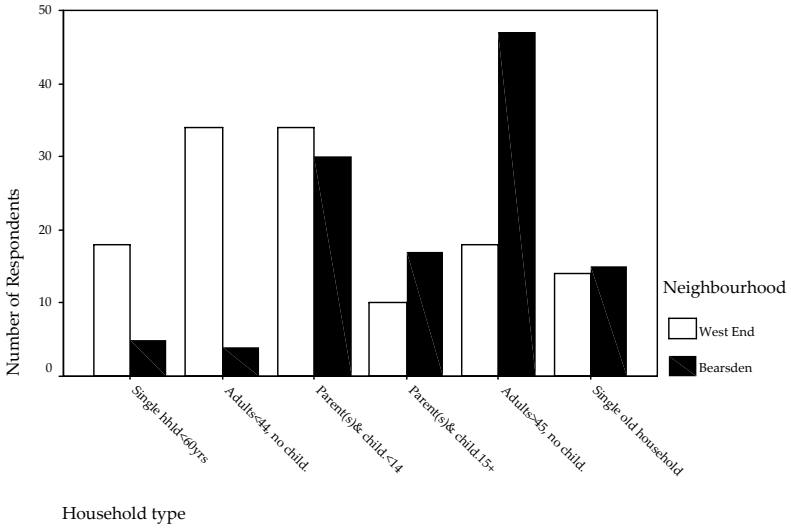


Figure 4-2: Bar graph for household types in the West End and Bearsden

Regarding the household types, the West End descriptive statistics show that most of the households were with two or more adults of young to middle age with and

without children, and in Bearsden most of the households were with two or more middle to old age people without children in the household.

Respondent's gender, as a categorical and dichotomous variable, will be presented in figures for both neighbourhoods respectively.

5. Respondent's gender

Statistics

Respondent's gender

Urban, West End	N	Valid	128
		Missing	0
	Minimum		1
	Maximum		2
Suburban, Bearsden	N	Valid	118
		Missing	0
	Minimum		1
	Maximum		2

Respondent's gender

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Male	62	48.4	48.4	48.4
		Female	66	51.6	51.6	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Male	65	55.1	55.1	55.1
		Female	53	44.9	44.9	100.0
		Total	118	100.0	100.0	

Table 4-4: Descriptive statistics for respondent's gender in each neighbourhood

From the output shown above it can be noticed that there are 62 males (48.4 per cent) and 66 females (51.6 per cent) in the West End sample, and 65 males (55.1 per cent) and 53 females (44.9 per cent) in Bearsden sample. Although there are more female than male respondents in the West End sample, and more male than female respondents in Bearsden sample, the group sizes are roughly equal.

Respondent's age group is a categorical variable of 4 categories, which will be presented numerically in descriptive statistics, and in bar graphs, comparatively for the two neighbourhoods.

6. Respondent's age group

Respondent's age group

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	15-29yrs	29	22.7	22.7	22.7
		30-44yrs	48	37.5	37.5	60.2
		45-59yrs	25	19.5	19.5	79.7
		60yrs+	26	20.3	20.3	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	15-29yrs	4	3.4	3.4	3.4
		30-44yrs	24	20.3	20.3	23.7
		45-59yrs	38	32.2	32.2	55.9
		60yrs+	52	44.1	44.1	100.0
		Total	118	100.0	100.0	

Table 4-5: Descriptive statistics for respondent's age group in the West End and Bearsden

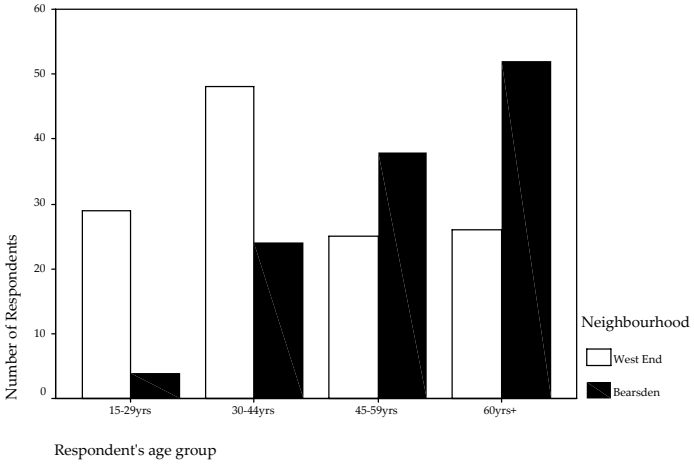


Figure 4-3: Bar graph for respondent's age group in the West End and Bearsden

The graph from above shows that in the West End there was a more equal distribution of respondents according to their age groups, while in Bearsden, the number of respondents was progressively growing by their age.

Next variable, which will be presented, is the marital status of respondents from the West End and Bearsden. Again, since this variable is of categorical type, it will be represented by the bar graph which follows the descriptive statistics.

7. Marital status

Marital status

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Single	39	30.5	30.5	30.5
		Living with a partner / Married	74	57.8	57.8	88.3
		Separated / Divorced	5	3.9	3.9	92.2
		Widowed	10	7.8	7.8	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Single	7	5.9	5.9	5.9
		Living with a partner / Married	89	75.4	75.4	81.4
		Separated / Divorced	9	7.6	7.6	89.0
		Widowed	13	11.0	11.0	100.0
		Total	118	100.0	100.0	

Table 4-6: Descriptive statistics for respondent's marital status in the West End and Bearsden

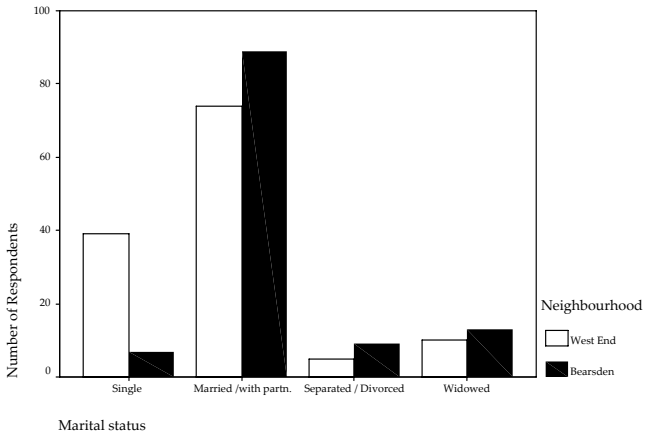


Figure 4-4: Bar graph for respondent's marital status in the West End and Bearsden

Observing from the bar graph shown above, it can be noticed that the main difference regarding marital status of respondents from the two neighbourhoods is in the first group of singles, who were more numerous in the West End than in Bearsden.

8. Highest level of education

Highest level of education

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Some secondary school	15	11.7	11.7	11.7
		Completed high school	12	9.4	9.4	21.1
		Some additional training	11	8.6	8.6	29.7
		Completed undergraduate studies	38	29.7	29.7	59.4
		Completed postgraduate studies	52	40.6	40.6	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Some secondary school	11	9.3	9.3	9.3
		Completed high school	15	12.7	12.7	22.0
		Some additional training	25	21.2	21.2	43.2
		Completed undergraduate studies	32	27.1	27.1	70.3
		Completed postgraduate studies	35	29.7	29.7	100.0
		Total	118	100.0	100.0	

Table 4-7: Descriptive statistics for respondent's highest level of education in the West End and Bearsden

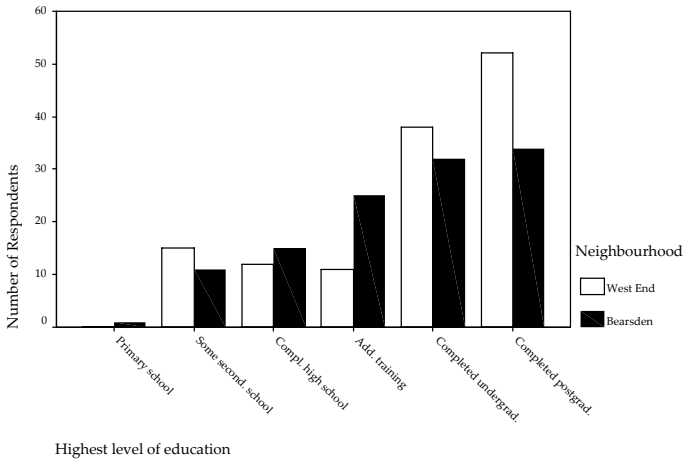


Figure 4-5: Bar graph for respondent's highest level of education in the West End and Bearsden

Respondent's highest achieved level of formal education is a categorical variable of 6 categories. Descriptive statistics given in a table and the bar graph showed that, in both neighbourhoods, there were larger numbers of people with higher education (completed undergraduate and completed postgraduate studies) than those with lower education.

Respondent's current occupation is a categorical variable of 5 categories and it will be presented numerically and in bar graph for both neighbourhoods.

9. Current occupation

Current occupation

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Professional	70	54.7	54.7	54.7
		Managerial technical	3	2.3	2.3	57.0
		Skilled (manual and non-manual)	8	6.3	6.3	63.3
		Partly skilled and unskilled	4	3.1	3.1	66.4
		Other	43	33.6	33.6	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Professional	57	48.3	48.3	48.3
		Managerial technical	8	6.8	6.8	55.1
		Skilled (manual and non-manual)	9	7.6	7.6	62.7
		Partly skilled and unskilled	2	1.7	1.7	64.4
		Other	42	35.6	35.6	100.0
		Total	118	100.0	100.0	

Table 4-8: Descriptive statistics for respondent's current occupation (the West End and Bearsden)

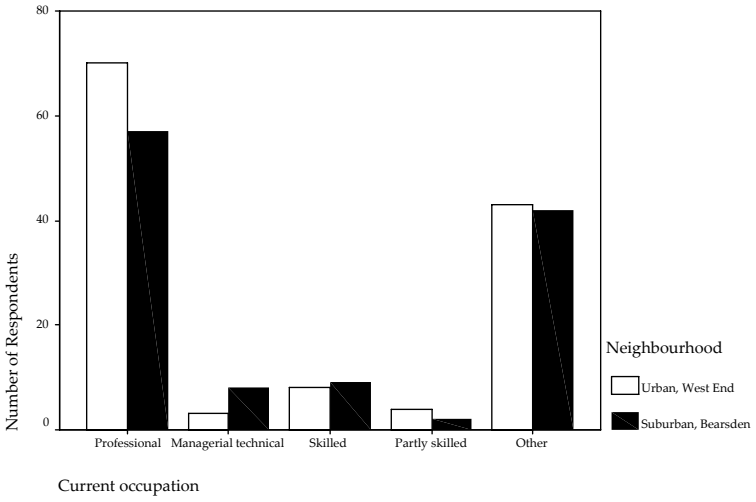


Figure 4-6: Bar graph for respondent's current occupation (the West End and Bearsden)

One can observe from the graph above that respondents in the West End and Bearsden do not differ much in terms of their current occupation. Generally speaking, half of the respondents in each neighbourhood were of professional occupations.

Finally, the preliminary analyses of socio-economic characteristics of respondents in the West End and Bearsden also include their job situation. This variable is categorical (9 categories); therefore, the results of descriptive statistics are given numerically in a table and represented in bar graph for both neighbourhoods.

10. Job situation

Job situation

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Employee (Full-time)	50	39.1	39.1	39.1
		Employee (Part-time)	12	9.4	9.4	48.4
		Self employed	18	14.1	14.1	62.5
		Student	13	10.2	10.2	72.7
		Looking after home/ family	5	3.9	3.9	76.6
		Unemployed	2	1.6	1.6	78.1
		Retired	25	19.5	19.5	97.7
		Permanently sick/ Disabled	1	.8	.8	98.4
		Other	2	1.6	1.6	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Employee (Full-time)	43	36.4	36.4	36.4
		Employee (Part-time)	7	5.9	5.9	42.4
		Self employed	11	9.3	9.3	51.7
		Student	1	.8	.8	52.5
		Looking after home/ family	10	8.5	8.5	61.0
		Retired	44	37.3	37.3	98.3
		Permanently sick/ Disabled	2	1.7	1.7	100.0
		Total	118	100.0	100.0	

Table 4-9: Descriptive statistics for respondent's job situation (the West End and Bearsden)

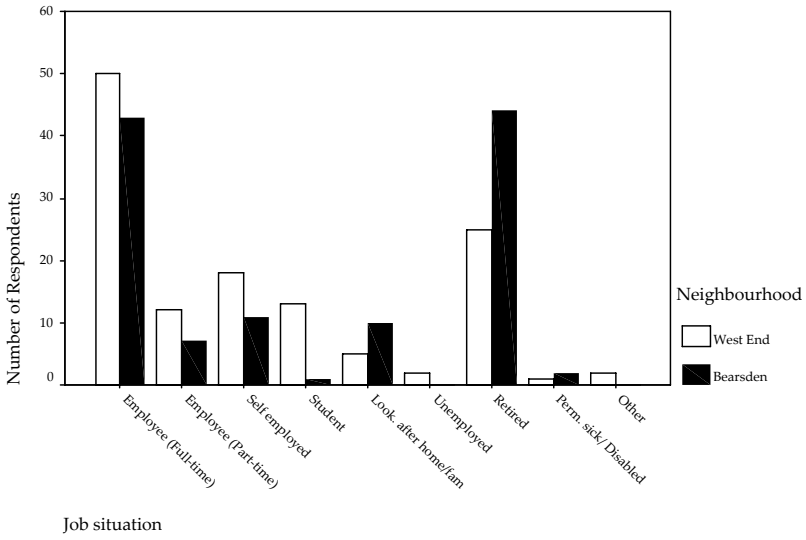


Figure 4-7: Bar graph for respondent's job situation (the West End and Bearsden)

From the outputs given above, it can be noticed that the main difference in job situation for the West End and Bearsden respondents appears in two categories:

student and retired. Former category is more numerous in the West End and latter is more represented in Bearsden. However, in both neighbourhoods a majority of respondents were Full-time employees regarding their present job situation.

4.1.2 Descriptive Statistics for Characteristics of Respondent's Environment in the two Neighbourhoods

Features that are covered in this section describe respondent's present home and residential neighbourhood, their home and neighbourhood in childhood, emotional attachment to the present neighbourhood, likes in the residential neighbourhood, space adjacent to home (e.g. garden), neighbourliness, neighbourhood safety and pollution problems.

First variable in this section refers to the type of home in which respondents currently live. As this variable is of a categorical type, apart from numerical description in a table, a bar graph will also be used for its representation.

11. Type of home

Type of home

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Detached house	6	4.7	4.7	4.7
		Semi-detached house	7	5.5	5.5	10.2
		Tenement flat	72	56.3	56.3	66.4
		Terraced house	28	21.9	21.9	88.3
		High-rise or block of flat	15	11.7	11.7	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Detached house	61	51.7	51.7	51.7
		Semi-detached house	44	37.3	37.3	89.0
		Terraced house	3	2.5	2.5	91.5
		High-rise or block of flat	10	8.5	8.5	100.0
		Total	118	100.0	100.0	

Table 4-10: Descriptive statistics for respondent's type of home (the West End and Bearsden)

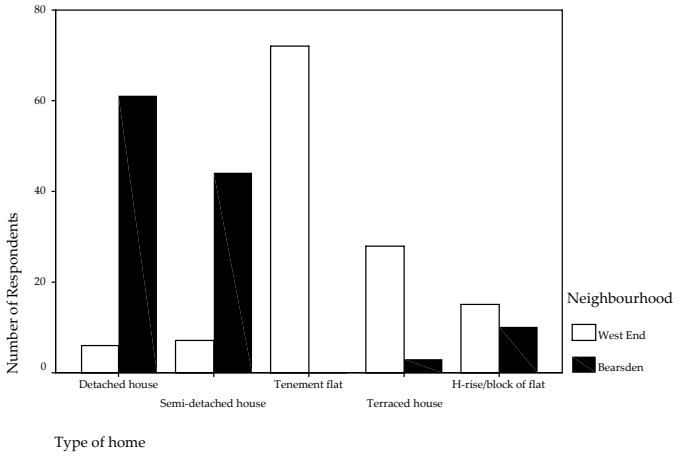


Figure 4-8: Bar graph for respondent's type of home (the West End and Bearsden)

Like the bar graph shows, majority of respondents from the West End live in tenement flats, while in Bearsden, detached and semi-detached houses are the dominant type of living.

Following are the results on ownership over present home for the respondents in both neighbourhoods. Again, as this variable is of categorical type, the results of descriptive statistics are given numerically and in the form of a bar graph.

12. Ownership of home

Ownership of home

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Owner occupied	106	82.8	82.8	82.8
		Other	22	17.2	17.2	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Owner occupied	116	98.3	98.3	98.3
		Other	2	1.7	1.7	100.0
		Total	118	100.0	100.0	

Table 4-11: Descriptive statistics for respondent's ownership of home in the West End and Bearsden

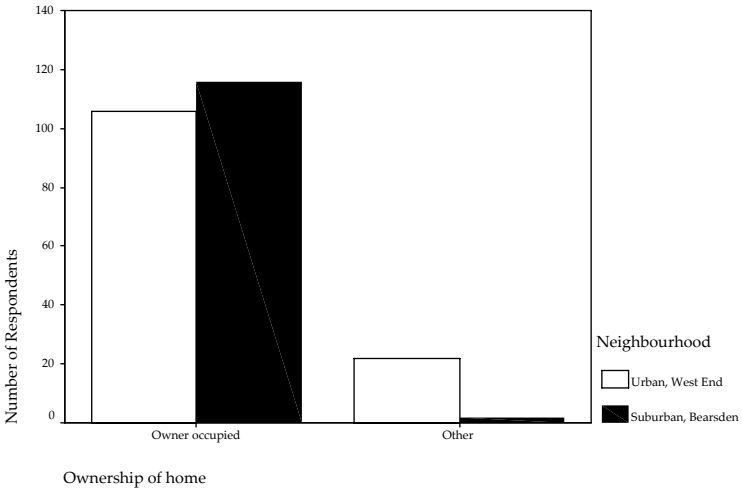


Figure 4-9: Bar graph for respondent's ownership of home in the West End and Bearsden

From the bar graph given above, it can be noticed that in both neighbourhoods most respondents live in homes that are owner occupied. However, in comparison with Bearsden, in the West End there are more respondents living in 'other' (non owner occupied) types of homes (e.g. private rented, Council rented, rented from Scottish Homes/ a Housing Association, a shared ownership through a Housing Association, bought directly from Council/ Scottish Homes).

Residents were also asked about the duration of their staying in a present home and residential neighbourhood. Their answers are shown in the following descriptive statistics.

13. Duration of living in a present home

Duration of living in a present home

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Less than one year	15	11.7	11.7	11.7
		1-5 years	61	47.7	47.7	59.4
		6-10 years	12	9.4	9.4	68.8
		11-20 years	17	13.3	13.3	82.0
		More than 20 years	23	18.0	18.0	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Less than one year	3	2.5	2.5	2.5
		1-5 years	23	19.5	19.5	22.0
		6-10 years	19	16.1	16.1	38.1
		11-20 years	25	21.2	21.2	59.3
		More than 20 years	48	40.7	40.7	100.0
		Total	118	100.0	100.0	

Table 4-12: Descriptive statistics for resident's duration of living in a present home in the West End and Bearsden

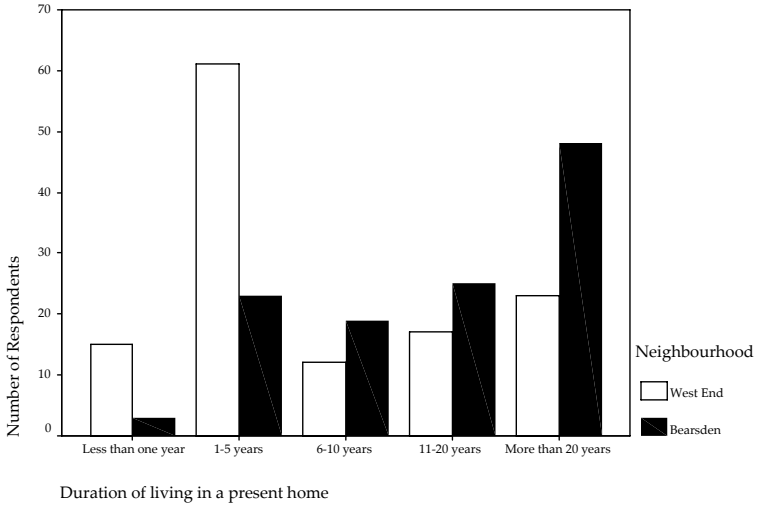


Figure 4-10: Bar graph for resident's duration of living in a present home in the West End and Bearsden

14. Duration of living in a present neighbourhood

Duration of living in a present neighbourhood

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Less than one year	6	4.7	4.7	4.7
		1-5 years	32	25.0	25.0	29.7
		6-10 years	22	17.2	17.2	46.9
		11-20 years	16	12.5	12.5	59.4
		More than 20 years	52	40.6	40.6	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Less than one year	2	1.7	1.7	1.7
		1-5 years	17	14.4	14.4	16.1
		6-10 years	11	9.3	9.3	25.4
		11-20 years	20	16.9	16.9	42.4
		More than 20 years	68	57.6	57.6	100.0
		Total	118	100.0	100.0	

Table 4-13: Descriptive statistics for respondent's duration of living in a present neighbourhood (the West End and Bearsden)

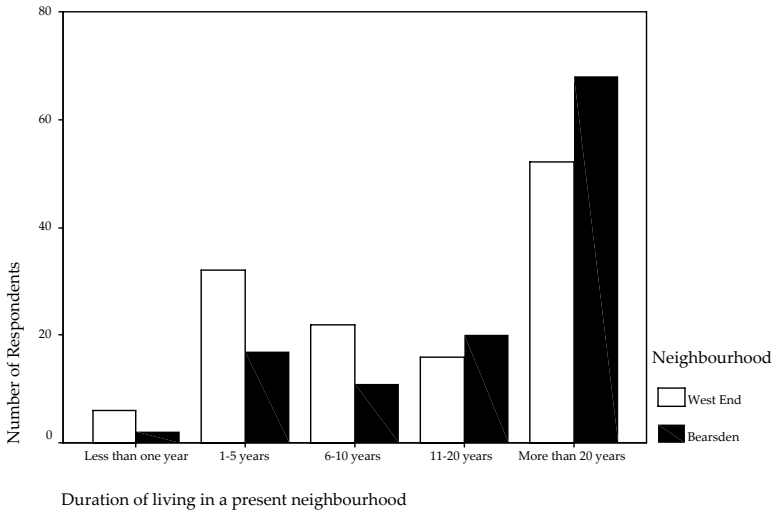


Figure 4-11: Bar graph for respondent's duration of living in a present neighbourhood (the West End and Bearsden)

Bar graph for respondent's duration of living in a present home shows that almost half of respondents from Bearsden have lived in their present home and neighbourhood for more than 20 years, while in the West End, majority of respondents have lived in their present home for 5 years and less.

Second graph shows that in both neighbourhoods, the greatest number of respondents has been living in a present neighbourhood for more than 20 years.

Apart from getting the information on respondent's present type of home and present type of neighbourhood, it was interesting to know in which type of home/ neighbourhood they used to live in their childhood.

15. Type of home in childhood

Type of home in childhood

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Tenement/ Block of flats	33	25.8	25.8	25.8
		(Semi) detached/ terraced house	95	74.2	74.2	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Tenement/ Block of flats	40	33.9	33.9	33.9
		(Semi) detached/ terraced house	78	66.1	66.1	100.0
		Total	118	100.0	100.0	

Table 4-14: Descriptive statistics for respondent's type of home in childhood

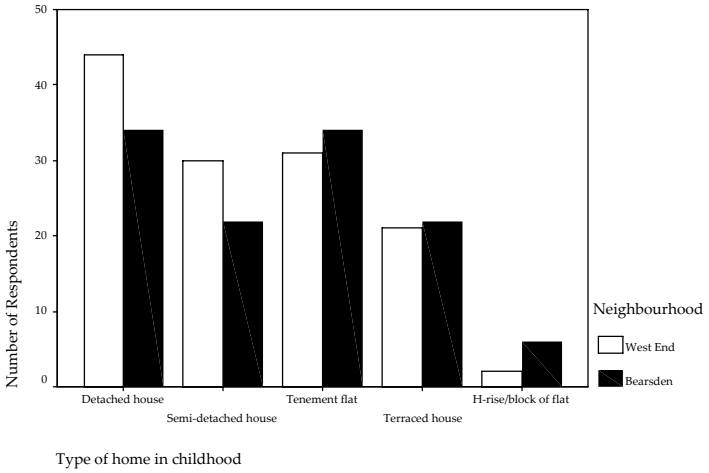


Figure 4-12: Bar graph for respondent's type of home in childhood

16. Type of neighbourhood in childhood

Type of neighbourhood in childhood

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Urban	48	37.5	37.5	37.5
		Suburban	51	39.8	39.8	77.3
		Rural	29	22.7	22.7	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Urban	40	33.9	33.9	33.9
		Suburban	63	53.4	53.4	87.3
		Rural	15	12.7	12.7	100.0
		Total	118	100.0	100.0	

Table 4-15: Descriptive statistics for respondent's type of neighbourhood in the childhood

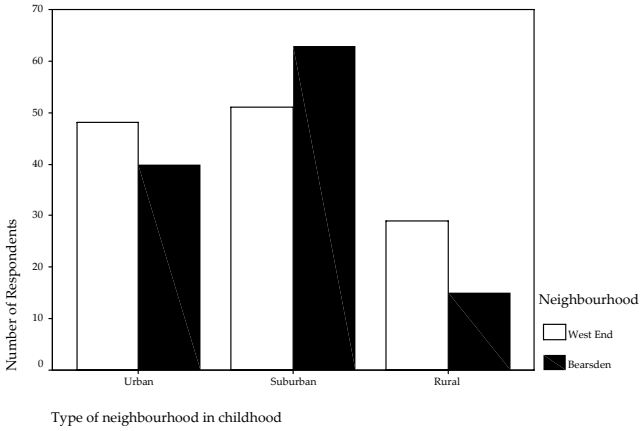


Figure 4-13: Bar graph for respondent's type of neighbourhood in the childhood

Information we obtain from the graph on respondent's type of home in the childhood shows that in both neighbourhoods most of the respondents used to live in detached,

semi-detached and terraced houses when they were children, while roughly 1/3 of respondents in each neighbourhood used to live in flats in the childhood.

Bar graph for the type of neighbourhood in which respondents lived when they were children, shows that in the West End, there is roughly equal number of respondents who lived in urban and suburban types of neighbourhoods in their childhood. In Bearsden, largest number of respondents lives in the same type of neighbourhood as when they were children.

Respondent's emotional attachment (community sentiment) towards their present neighbourhood is given by a continuous variable, which will be shown in histograms and boxplots, for each neighbourhood individually.

17. Attachment to a present neighbourhood

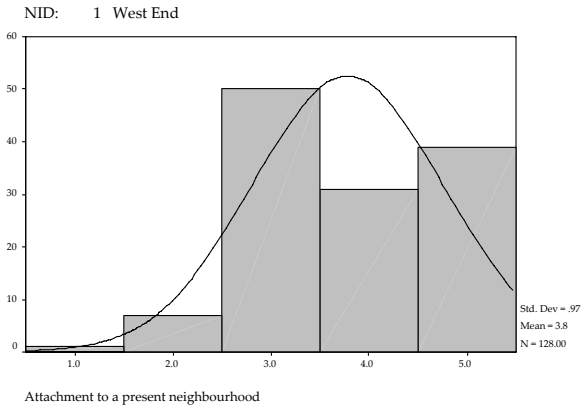


Figure 4-14: Histogram for respondent's emotional attachment to the residential neighbourhood (the West End)

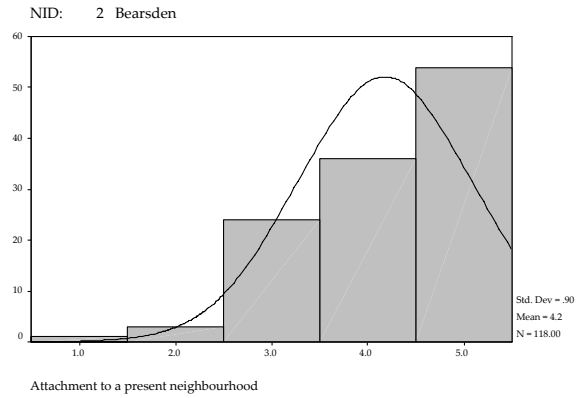


Figure 4-15: Histogram for respondent's emotional attachment to the residential neighbourhood (Bearsden)

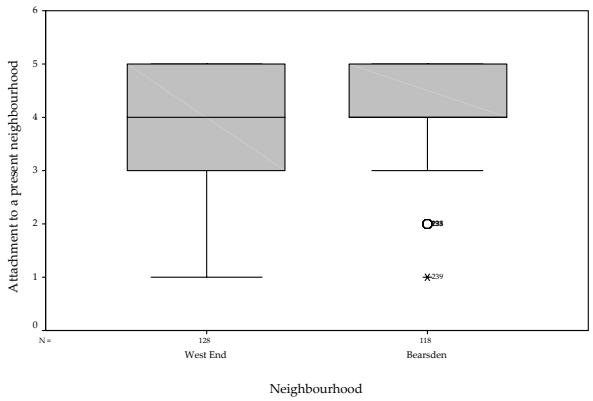


Figure 4-16: Boxplots for respondent's emotional attachment to the residential neighbourhood (the West End and Bearsden)

From the graphs on respondent's emotional attachment to the residential neighbourhood, a strong negative skewness can be noticed in Bearsden graph, with clustering of scores at the high end. In the West End, the results are also concentrated around higher values but not to such an extent as in Bearsden.

The next block of analysis is on variables holding the common attribute of likes in the residential neighbourhood. Since there are 7 continuous variables of likes in the neighbourhood, they will be presented in individual bar graphs, but comparatively for the West End and Bearsden respondents.

18. Likes in the neighbourhood

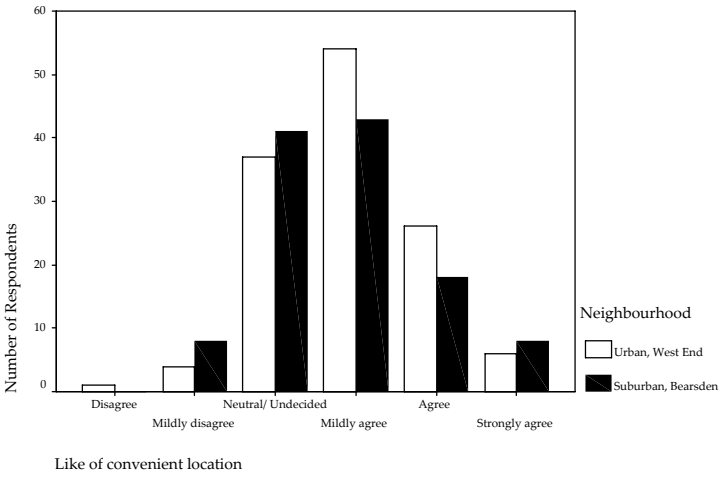


Figure 4-17: Bar graph for respondent's like of convenient location in the West End and Bearsden

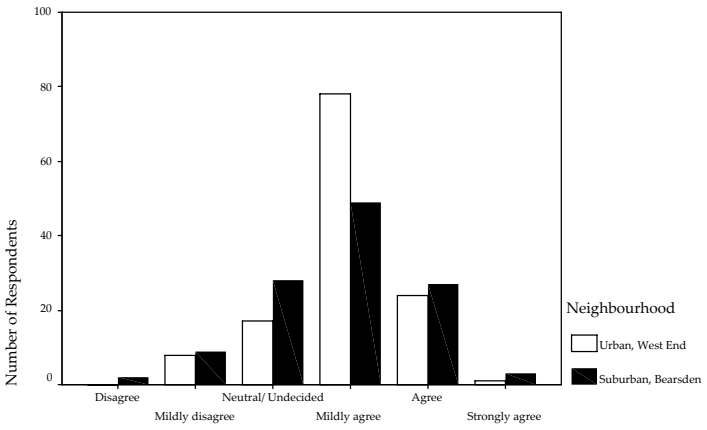


Figure 4-18: Bar graph for resident's like of a 'village feel' (friendly people) in the West End and Bearsden

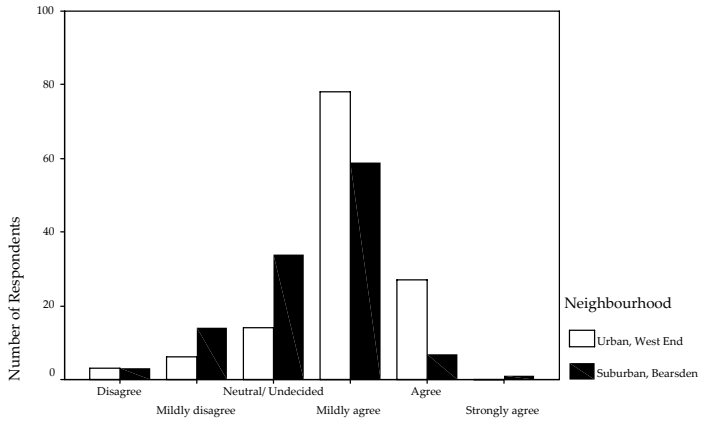


Figure 4-19: Bar graph for respondent's like of facilities, amenities and house values in the West End and Bearsden

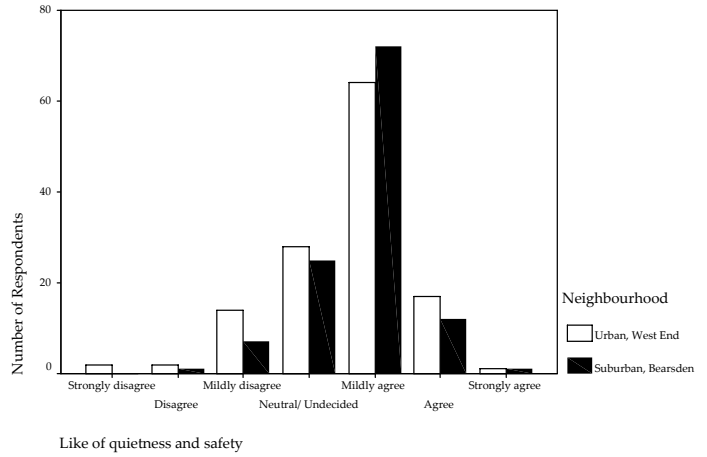


Figure 4-20: Bar graph for respondent's like of quietness and safety in the West End and Bearsden

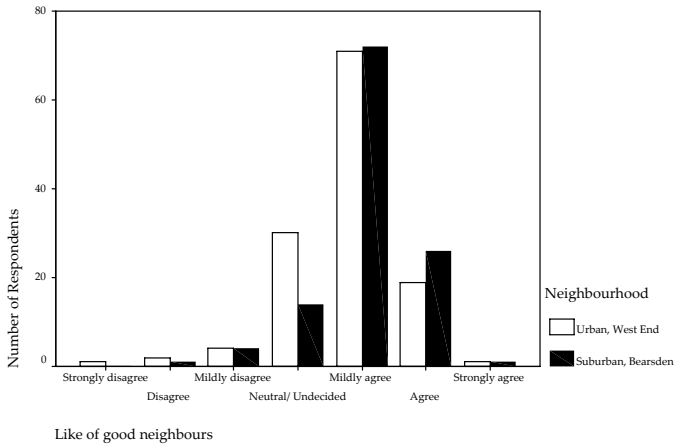


Figure 4-21: Bar graph for respondent's like of good neighbours in the West End and Bearsden

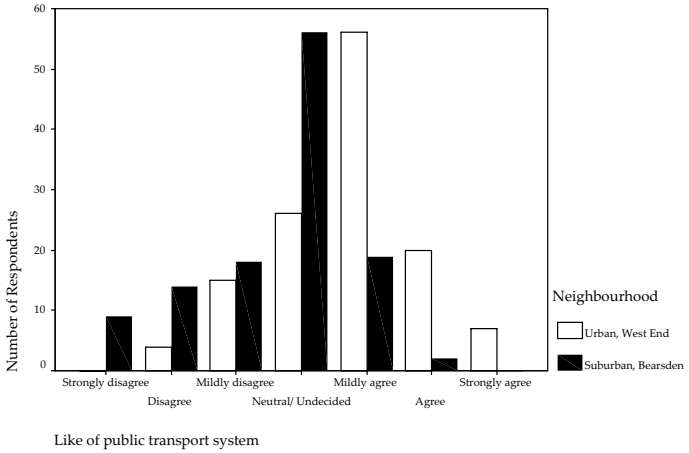


Figure 4-22: Bar graph for respondent's like of public transport system in the West End and Bearsden

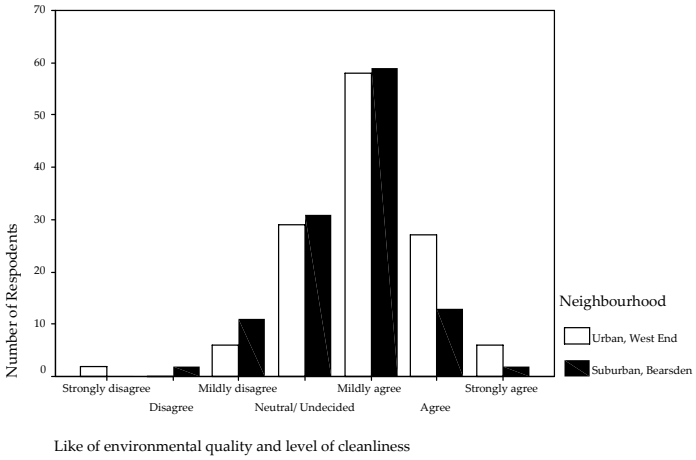


Figure 4-23: Bar graph for resident's like of environmental quality and level of cleanliness in the West End and Bearsden

Observing from the previous bar graphs on respondent's likes in the residential neighbourhood, it can be concluded that each of the seven graphs show normal

distribution of variables, with most of the responses concentrated around ‘mildly agree’, or ‘neutral/ undecided’ as in the case of like of public transport system in Bearsden.

Following are the descriptive statistics on the two variables, which relate to the type of space adjacent to respondent’s home and respondent’s opinion on the importance of having a private garden.

19. Home having a garden

Home having a garden

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private garden	35	27.3	27.3	27.3
		Communal garden	81	63.3	63.3	90.6
		No garden	9	7.0	7.0	97.7
		Other	3	2.3	2.3	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Private garden	107	90.7	90.7	90.7
		Communal garden	6	5.1	5.1	95.8
		No garden	5	4.2	4.2	100.0
		Total	118	100.0	100.0	

Table 4-16: Descriptive statistics for the type of garden adjacent to the respondent’s home in the West End and Bearsden

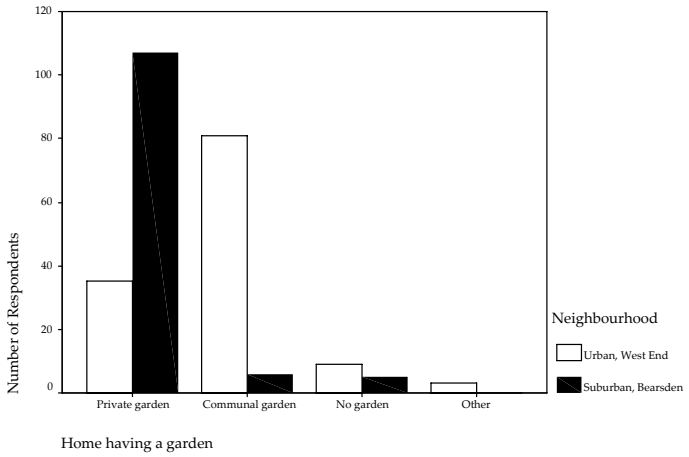


Figure 4-24: Bar graph for the type of garden adjacent to the respondent’s home in the West End and Bearsden

From the bar graph given above, it can be noticed that in Bearsden there is a large majority of respondents having a private garden, while in the West End there are more respondents whose home has a communal garden.

20. High importance of having a private garden

Private garden-very important

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Strongly disagree	7	5.5	5.5	5.5
		Disagree	37	28.9	28.9	34.4
		Neutral/ undecided	24	18.8	18.8	53.1
		Agree	31	24.2	24.2	77.3
		Strongly agree	29	22.7	22.7	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Disagree	3	2.5	2.5	2.5
		Neutral/ undecided	7	5.9	5.9	8.5
		Agree	35	29.7	29.7	38.1
		Strongly agree	73	61.9	61.9	100.0
		Total	118	100.0	100.0	

Table 4-17: Descriptive statistics for respondent's perception on importance of having a private garden (the West End and Bearsden)

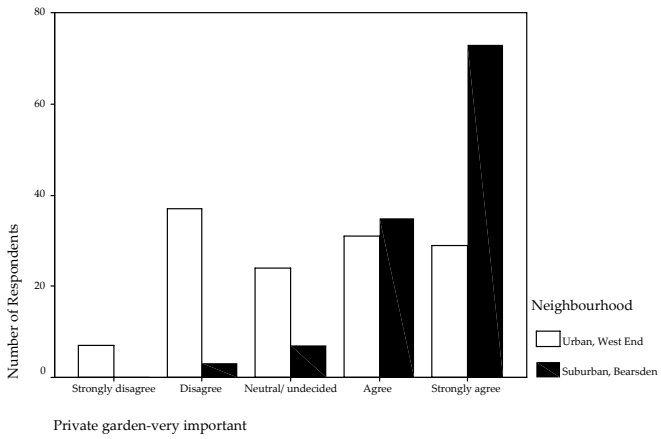


Figure 4-25: Bar graph for respondent's perception on importance of having a private garden (the West End and Bearsden)

The graph on respondent's perceived importance of having a private garden shows that, while the respondents from the West End have more equally distributed notion on importance of having a private garden, the largest number of respondents in Bearsden evaluates very highly the importance of having a private garden.

The next three variables are about respondent's similarities with the next-door neighbours and neighbourhood contacts. Descriptive statistics is given numerically and graphically for the similarities with the next-door neighbours and in line graphs for frequency in meeting the next-door neighbours and happiness with contacts with the next-door neighbours.

21. Similarities with next-door neighbours

Similarities with the next-door neighbours

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Professionals or similar occupations	30	23.4	23.4	23.4
		Similar ages, stage in the family life cycle, social class	29	22.7	22.7	46.1
		Attitude, lifestyle and shared values	15	11.7	11.7	57.8
		There is a great diversity beween neighbours, no simil.	54	42.2	42.2	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Professionals or similar occupations	14	11.9	11.9	11.9
		Similar ages, stage in the family life cycle, social class	24	20.3	20.3	32.2
		Attitude, lifestyle and shared values	46	39.0	39.0	71.2
		There is a great diversity beween neighbours, no simil.	34	28.8	28.8	100.0
		Total	118	100.0	100.0	

Table 4-18: Descriptive statistics for respondent's similarities with its next-door neighbours (the West End and Bearsden)

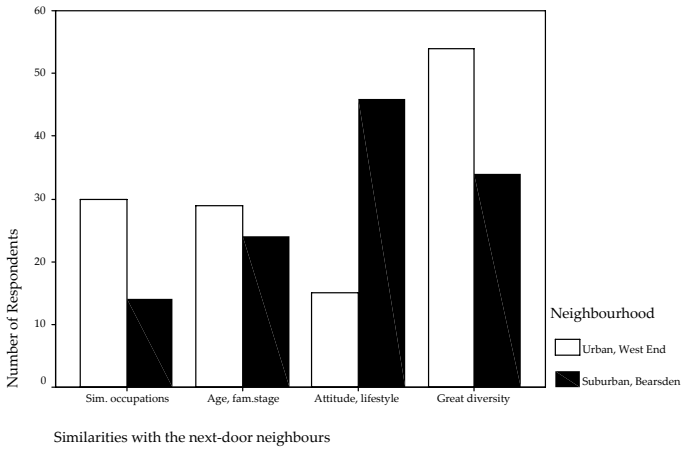


Figure 4-26: Bar graph for respondent's similarities with its next-door neighbours (the West End and Bearsden)

From the bar graph for respondents' perception on similarities between them and their next-door neighbours, it can be observed that in the West End majority of people think that there is a great diversity between them and their next door neighbours. In Bearsden, it can be noticed that respondents think that it is attitude/ lifestyle what makes them mostly similar to their next-door neighbours.

22. Meeting the next-door neighbours

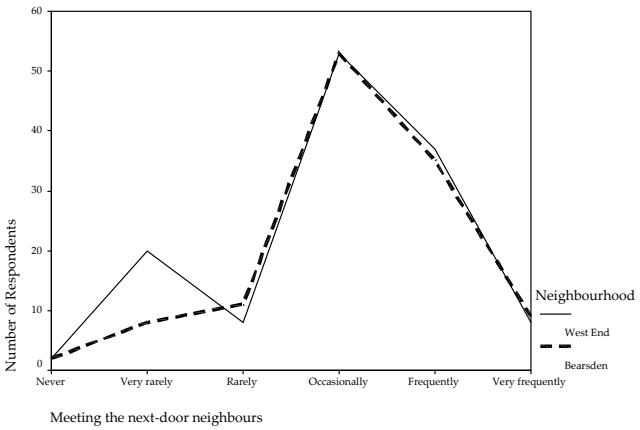


Figure 4-27: Line graph for respondent's frequency of meeting next-door neighbours in the West End and Bearsden

23. Happiness with contacts with the next-door neighbours

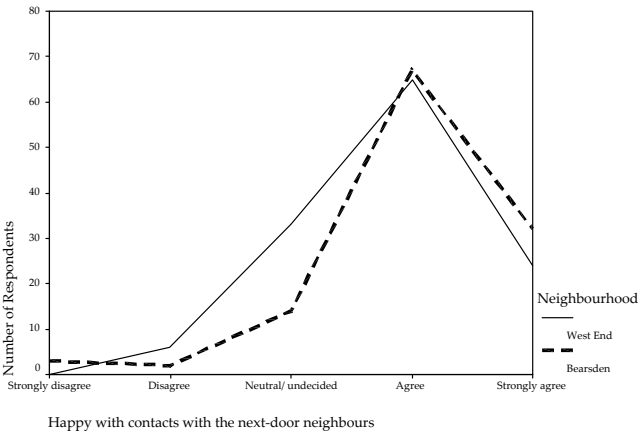


Figure 4-28: Line graph for respondent's happiness with contacts with next-door neighbours in the West End and in Bearsden

From the line graphs given above, it can be noticed that respondents in the West End and in Bearsden have similar distribution of frequencies in meeting their next-door neighbours and happiness with contacts with the next-door neighbours. Majority of respondents meet their next-door neighbours occasionally and majority agrees that they are happy with contacts with the next-door neighbours.

The next variable in this section is neighbourhood safety, and since it is a continuous variable, it will be also represented by the line graph.

24. Feeling very safe in my residential neighbourhood

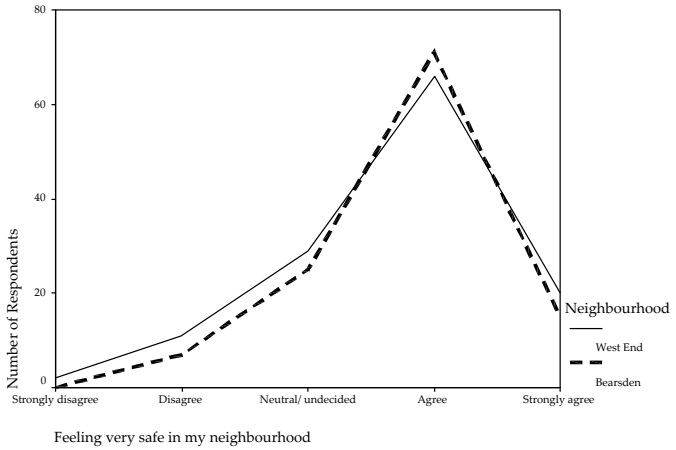


Figure 4-29: Line graph for respondent's feeling of safety in the residential neighbourhood (the West End and Bearsden)

From the line graph given above, it can be observed that respondents in both neighbourhoods have almost identical feelings of safety in the residential neighbourhood, where majority of respondents agree with the statement: I feel very safe in my residential neighbourhood.

The last variable to be presented in this section is pollution in residential neighbourhood as perceived by the respondents. Because this variable is of categorical type, its descriptive statistics will be given in a table and in a bar graph.

25. Pollution problems in the neighbourhood

Does your neihbourhood have pollution problems

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Yes	36	28.1	28.1	28.1
		No	92	71.9	71.9	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Yes	25	21.2	21.2	21.2
		No	93	78.8	78.8	100.0
		Total	118	100.0	100.0	

Table 4-19: Descriptive statistics for respondent's perception on pollution problems in the West End and Bearsden

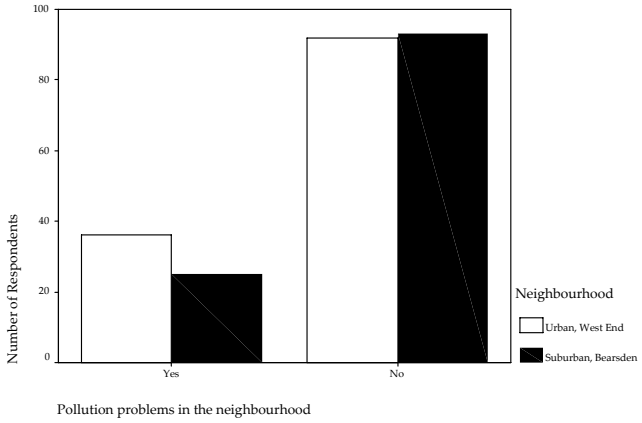


Figure 4-30: Bar graph for respondent's perception on pollution problems in the West End and Bearsden

From the bar graph given above, it can be noticed that in both cases, majority of respondents think there are no pollution problems in their residential neighbourhood.

4.1.3 Descriptive Statistics for Transportation Habits and Distances to Places of Daily Activity for Respondents in the two Neighbourhoods

This section gives a general picture of transportation habits of respondents in the West End and in Bearsden. The descriptive statistics is given for the respondents' frequencies in using different modes of transportation, satisfaction with the public transport system in the neighbourhood and private car dependency. Also, the distances of places of daily activity/work of respondents and of nursery/school for respondents' children are presented in forms of tables and graphs. Finally in this section, the means of transportation that respondents most commonly use in reaching certain facilities are given in descriptive statistics.

First variable to be presented in this section is respondents' everyday most common means of transportation. Since this is a categorical variable, a table and the bar graph will be used for its representation for both neighbourhoods.

26. Everyday most common means of transportation

Everyday most common means of transportation

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private car	48	37.5	37.5	37.5
		Underground/ Train	22	17.2	17.2	54.7
		Bus	7	5.5	5.5	60.2
		Walk	47	36.7	36.7	96.9
		Other (bicycle, motorcycle, taxi, plane...)	4	3.1	3.1	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Private car	95	80.5	80.5	80.5
		Underground/ Train	10	8.5	8.5	89.0
		Bus	6	5.1	5.1	94.1
		Walk	5	4.2	4.2	98.3
		Other (bicycle, motorcycle, taxi, plane...)	2	1.7	1.7	100.0
		Total	118	100.0	100.0	

Table 4-20: Descriptive statistics for respondent's everyday most common means of transportation in the West End and Bearsden

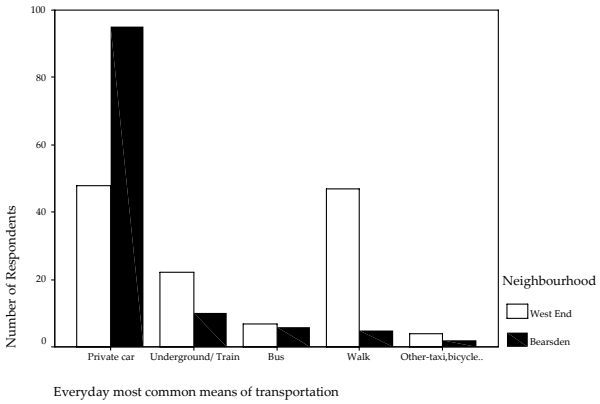


Figure 4-31: Bar graph for respondent's everyday most common means of transportation in the West End and Bearsden

Previous graph shows that in the West End, private car and walk are the transportation means that respondents equally and most commonly use. In contrast, in Bearsden, the largest number of respondents primarily use a private car leaving all other means of transportation well behind in terms of frequency of their use.

The next three variables show the respondents' frequencies of walks, use of the public transport system and use of a private car. As these variables are continuous, they will be given in line graphs.

27. Frequency of walks

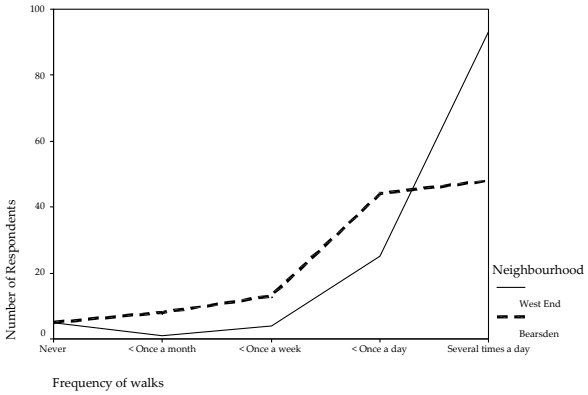


Figure 4-32: Line graph for respondent's frequency of walks in the West End and Bearsden

28. Frequency of using the public transport system

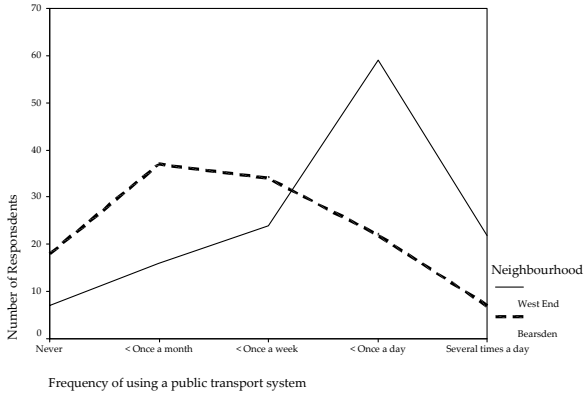


Figure 4-33: Line graph for respondent's frequency of use of public transport system in the West End and Bearsden

29. Frequency of using a private car

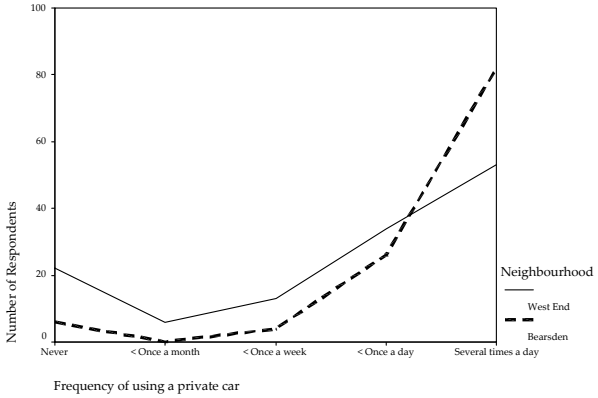


Figure 4-34: Line graph for respondent's frequency of use of a private car in the West End and Bearsden

From the line graphs for respondents' frequencies of use of the three different modes of transportation, it can be noticed that the main difference between the two neighbourhoods appears in the public transport system frequency of use. It can also be remarked that in the West End, the majority of respondents walk several times a day, while in Berasden the largest number of respondents use a private car more than once a day.

Regarding respondent's satisfaction with the public transport system organisation in the residential neighbourhood, this continuous variable will also be presented by line graph for each neighbourhood.

30. Satisfaction with the public transport system organisation

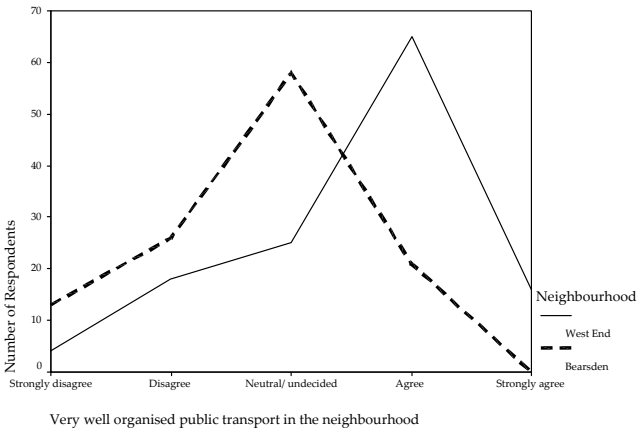


Figure 4-35: Line graph for respondent's satisfaction with the public transport system organisation in the West End and Bearsden

From the line graph given above, it can be noticed that in the West End, responses are mainly concentrated around 'agree' with the statement that the public transport system in the neighbourhood is very well organised. In Bearsden, majority of respondents are neutral on this topic.

Following are the descriptive statistics for respondents' possession of a private car, possibility of those who own a car to manage without one, and their need for an additional car for the household. Since these three variables are categorical, they will

be given numerically in tables and represented in bar graphs, comparatively for the West End and Bearsden.

31. Number of private cars in the household

Number of private cars in the household

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	None	32	25.0	25.0	25.0
		One	72	56.3	56.3	81.3
		Two or more	24	18.8	18.8	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	None	9	7.6	7.6	7.6
		One	46	39.0	39.0	46.6
		Two or more	63	53.4	53.4	100.0
		Total	118	100.0	100.0	

Table 4-21: Descriptive statistics for respondent's household ownership of a private car in the West End and Bearsden

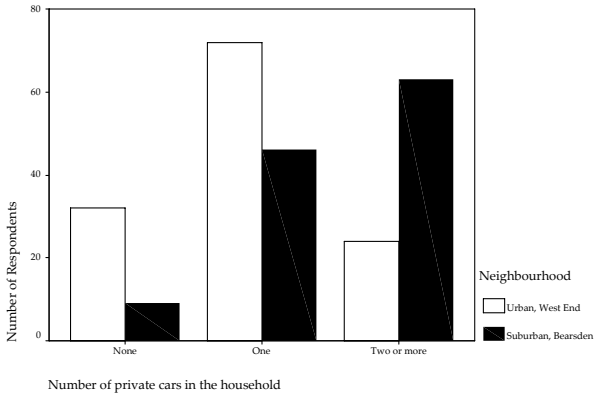


Figure 4-36: Bar graph for respondent's household ownership of a private car in the West End and Bearsden

As it is observable from the bar graph given above, majority of respondents in the West End have one car in the household; while in Bearsden majority of respondents have two or more private cars per household.

32. Possibility to manage without a car

Possibility to manage without a car

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Yes	34	26.6	35.4	35.4
		No	62	48.4	64.6	100.0
		Total	96	75.0	100.0	
	Missing	System	32	25.0		
	Total		128	100.0		
Suburban, Bearsden	Valid	Yes	21	17.8	19.3	19.3
		No	88	74.6	80.7	100.0
		Total	109	92.4	100.0	
	Missing	System	9	7.6		
	Total		118	100.0		

Table 4-22: Descriptive statistics for possibility to manage without a car for those respondents who have a car in the household (the West End and Bearsden)

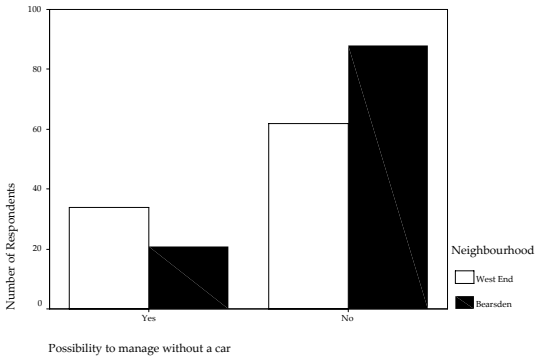


Figure 4-37: Bar graph for possibility to manage without a car for those respondents who have a car in the household (the West End and Bearsden)

33. Need for an additional car in the household

Need for an additional car in the household

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Yes	7	5.5	7.3	7.3
		No	89	69.5	92.7	100.0
		Total	96	75.0	100.0	
	Missing	System	32	25.0		
	Total		128	100.0		
Suburban, Bearsden	Valid	Yes	15	12.7	13.8	13.8
		No	94	79.7	86.2	100.0
		Total	109	92.4	100.0	
	Missing	System	9	7.6		
	Total		118	100.0		

Table 4-23: Descriptive statistics for the need of an additional car in households already having a private car (the West End and Bearsden)

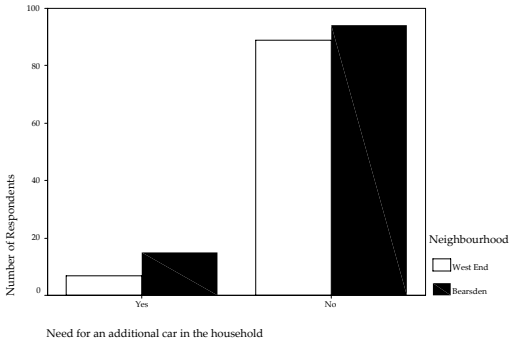


Figure 4-38: Bar graph for the need of an additional car in households already having a private car (the West End and Bearsden)

Bar graph for possibility to manage without a private car shows that respondents who already have a car are less likely to think they can manage without a private car. On the other hand, bar graph for the need of an additional car in the household shows

that the majority of respondents in both neighbourhoods do not need an additional car in the household.

Regarding distance of respondents' place of work (daily activity) from their home, this categorical variable is given in the following descriptive statistics, comparatively for the respondents from the two neighbourhoods.

34. Distance to place of work or daily activity

Distance to place of work or daily activity

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Up to 1 mile (or 40min of walk)	60	46.9	46.9	46.9
		More than 1 mile but less than 10 miles	50	39.1	39.1	85.9
		More than 10 miles but less than 50 miles	7	5.5	5.5	91.4
		More than 50 miles and changeable distances	11	8.6	8.6	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Up to 1 mile (or 40min of walk)	28	23.7	23.7	23.7
		More than 1 mile but less than 10 miles	73	61.9	61.9	85.6
		More than 10 miles but less than 50 miles	16	13.6	13.6	99.2
		More than 50 miles and changeable distances	1	.8	.8	100.0
		Total	118	100.0	100.0	

Table 4-24: Descriptive statistics for respondent's distance to place of daily activity (the West End and Bearsden)

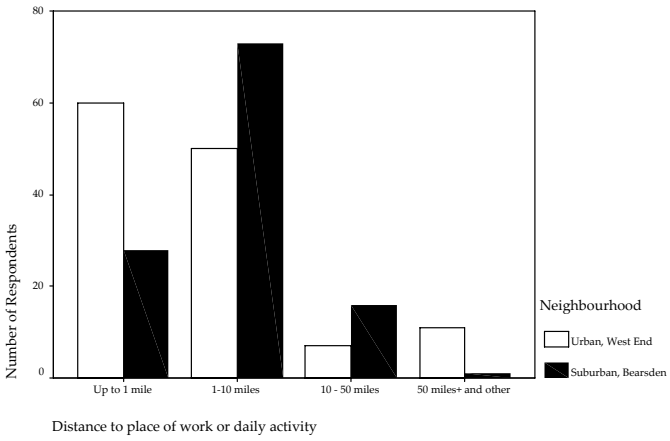


Figure 4-39: Bar graph for respondent's distance to place of daily activity (the West End and Bearsden)

As it can be observed from the bar graph given above, in the West End majority of respondents travel short distances (up to 1 mile or 40min of walk) to their place of work or daily activity, while in Bearsden, majority of respondents travel approximately more than 1 mile but less than 10 miles to the place of work or daily activity.

Following the previous variable, those respondents with children in the household are asked about the distance their children travel to their nursery/ school and means of transport that are used for children's transportation to nursery/ school. Those results are given numerically in tables and in bar graphs, which are comparable for the two neighbourhoods.

35. Distance of child(ren) nursery/ school from home

Distance of child(ren) nursery/ school from home

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Up to one mile (or 40min of walk)	26	20.3	61.9	61.9
		More than one mile but less than 10 miles	16	12.5	38.1	100.0
		Total	42	32.8	100.0	
	Missing	System	86	67.2		
	Total		128	100.0		
Suburban, Bearsden	Valid	Up to one mile (or 40min of walk)	21	17.8	44.7	44.7
		More than one mile but less than 10 miles	24	20.3	51.1	95.7
		More than 10 miles	1	.8	2.1	97.9
		Other (Changeable distances)	1	.8	2.1	100.0
		Total	47	39.8	100.0	
	Missing	System	71	60.2		
	Total		118	100.0		

Table 4-25: Descriptive statistics for distance of child(ren)'s nursery/ school from home (the West End and Bearsden)

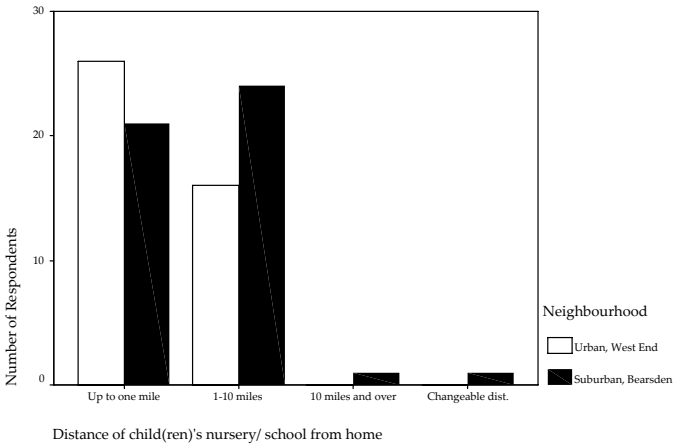


Figure 4-40: Bar graph for distance of child(ren)'s nursery/ school from home (the West End and Bearsden)

From the bar graph given above, it can be observed that the majority of respondents from both neighbourhoods stated that their children travel either less than a mile or up to 10 miles to their nursery/ school.

36. How do child(ren) go to their nursery/ school from home

How do children go to their nursery or school

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	By private car	20	15.6	47.6	47.6
		By public transport	5	3.9	11.9	59.5
		On foot	17	13.3	40.5	100.0
		Total	42	32.8	100.0	
	Missing	System	86	67.2		
	Total		128	100.0		
Suburban, Bearsden	Valid	By private car	27	22.9	57.4	57.4
		By public transport	7	5.9	14.9	72.3
		On foot	13	11.0	27.7	100.0
		Total	47	39.8	100.0	
	Missing	System	71	60.2		
	Total		118	100.0		

Table 4-26: Descriptive statistics for means of transportation used for children to go to their nursery/ school (the West End and Bearsden)

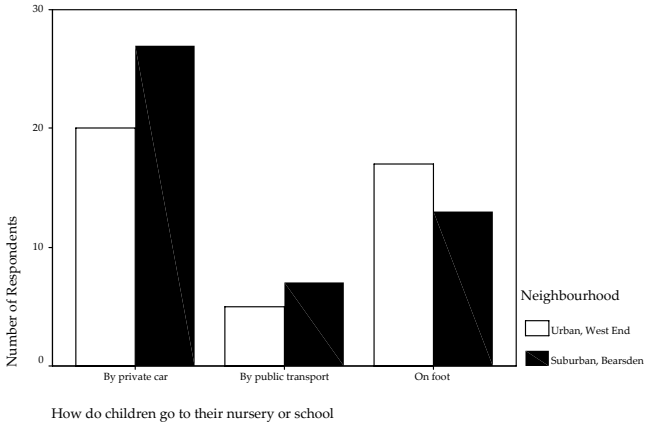


Figure 4-41: Bar graph for means of transportation used for children to go to their nursery/ school (the West End and Bearsden)

What this bar graph shows is that in the West End there is almost an equal number of respondent's children going to the nursery/ school by car and on foot. In Bearsden, there are more children who are taken to their nursery/ school by a private car than those who use other means of transportation.

Finally, since residents of the West End and Bearsden were asked about the most common means of transportation they used in order to reach certain facilities (city centre, daily shopping, weekly shopping, health centre, sport centre, green/ open spaces, post office, bank and other administration business, library, cinema theatre, restaurants, pubs and cafés), these variables are given in the following descriptive statistics.

37. Transportation to the city centre

Transportation to the city centre

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private car	25	19.5	19.7	19.7
		Public transport and other means which are not walk or car	89	69.5	70.1	89.8
		Walk	13	10.2	10.2	100.0
		Total	127	99.2	100.0	
	Missing	System	1	.8		
	Total		128	100.0		
Suburban, Bearsden	Valid	Private car	67	56.8	57.3	57.3
		Public transport and other means which are not walk or car	50	42.4	42.7	100.0
		Total	117	99.2	100.0	
	Missing	System	1	.8		
	Total		118	100.0		

Table 4-27: Descriptive statistics for means of transportation used for reaching the city centre by respondents from the West End and Berasden

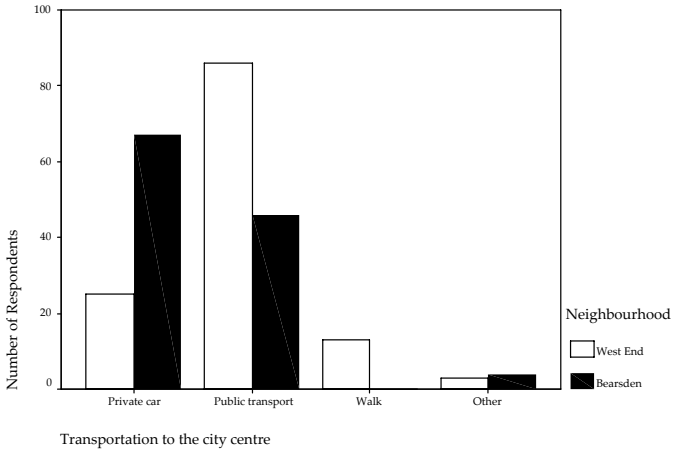


Figure 4-42: Bar graph for means of transportation used for reaching the city centre by respondents from the West End and Berasden

38. Transportation for daily shopping

Transportation to daily shopping

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private car	17	13.3	14.8	14.8
		Public transport, walk and other means which are not a car	98	76.6	85.2	100.0
		Total	115	89.8	100.0	
	Missing	System	13	10.2		
	Total		128	100.0		
Suburban, Bearsden	Valid	Private car	62	52.5	62.0	62.0
		Public transport, walk and other means which are not a car	38	32.2	38.0	100.0
		Total	100	84.7	100.0	
	Missing	System	18	15.3		
	Total		118	100.0		

Table 4-28: Descriptive statistics for means of transportation that respondents use for reaching daily shopping facilities (the West End and Bearsden)

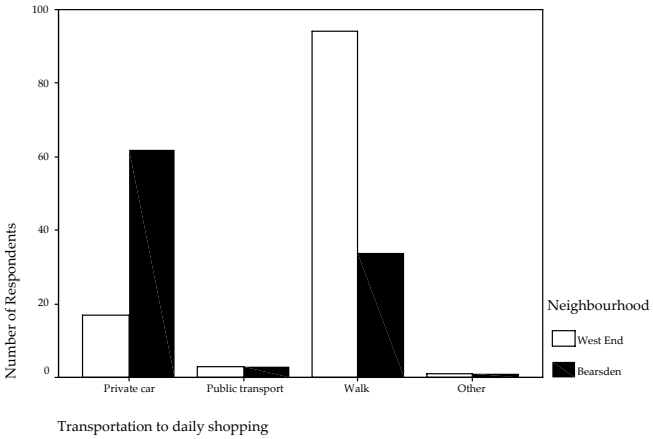


Figure 4-43: Bar graph for means of transportation that respondents use for reaching daily shopping facilities (the West End and Bearsden)

39. Transportation for weekly shopping

Transportation to weekly shopping

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private car	77	60.2	66.4	66.4
		Public transport, walk and other means which are not a car	39	30.5	33.6	100.0
		Total	116	90.6	100.0	
	Missing	System	12	9.4		
	Total		128	100.0		
Suburban, Bearsden	Valid	Private car	93	78.8	92.1	92.1
		Public transport, walk and other means which are not a car	8	6.8	7.9	100.0
		Total	101	85.6	100.0	
	Missing	System	17	14.4		
	Total		118	100.0		

Table 4-29: Descriptive statistics for means of transportation that respondents use for reaching weekly shopping facilities (the West End and Bearsden)

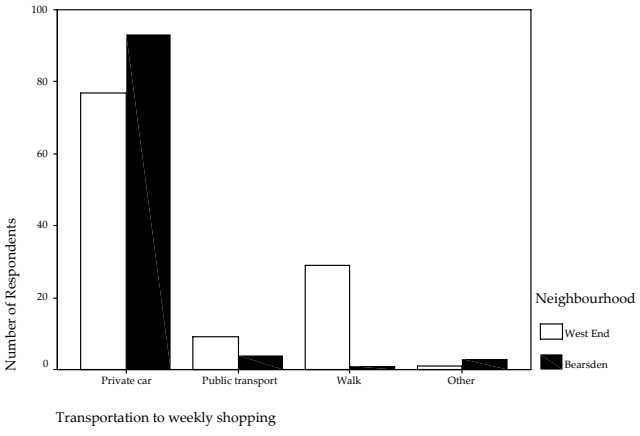


Figure 4-44: Bar graph for means of transportation that respondents use for reaching weekly shopping facilities (the West End and Bearsden)

40. Transportation to a health centre

Transportation to health centre

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private car	34	26.6	36.6	36.6
		Public transport, walk and other means which are not a car	59	46.1	63.4	100.0
		Total	93	72.7	100.0	
	Missing	System	35	27.3		
	Total		128	100.0		
Suburban, Bearsden	Valid	Private car	46	39.0	64.8	64.8
		Public transport, walk and other means which are not a car	25	21.2	35.2	100.0
		Total	71	60.2	100.0	
	Missing	System	47	39.8		
	Total		118	100.0		

Table 4-30: Descriptive statistics for means of transportation that respondents use for reaching a health centre (the West End and Berasden)

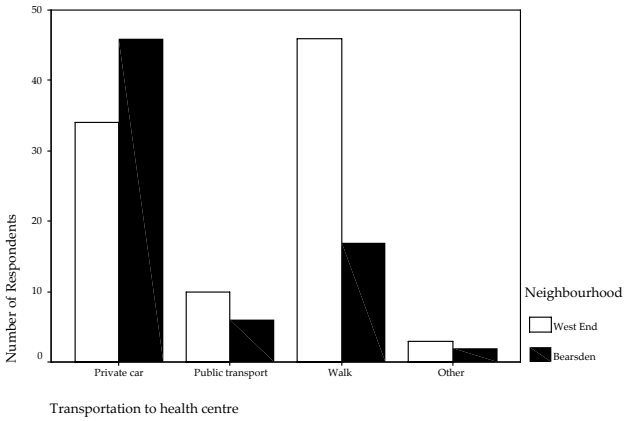


Figure 4-45: Bar graph for means of transportation that respondents use for reaching a health centre (the West End and Berasden)

41. Transportation to a sport centre

Transportation to sport centre

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private car	43	33.6	54.4	54.4
		Public transport, walk and other means which are not a car	36	28.1	45.6	100.0
		Total	79	61.7	100.0	
	Missing	System	49	38.3		
	Total		128	100.0		
Suburban, Bearsden	Valid	Private car	53	44.9	88.3	88.3
		Public transport, walk and other means which are not a car	7	5.9	11.7	100.0
		Total	60	50.8	100.0	
	Missing	System	58	49.2		
	Total		118	100.0		

Table 4-31: Descriptive statistics for means of transportation that respondents use for reaching a sport centre (the West End and Berasden)

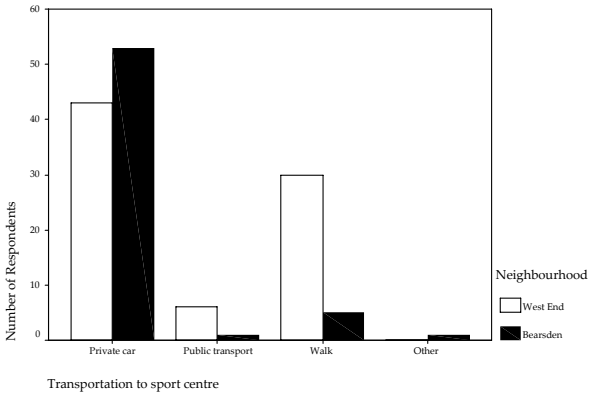


Figure 4-46: Bar graph for means of transportation that respondents use for reaching a sport centre (the West End and Berasden)

42. Transportation to green/ open spaces

Transportation to green/ open spaces

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private car	26	20.3	21.5	21.5
		Public transport, walk and other means which are not a car	95	74.2	78.5	100.0
		Total	121	94.5	100.0	
	Missing	System	7	5.5		
	Total		128	100.0		
Suburban, Bearsden	Valid	Private car	81	68.6	74.3	74.3
		Public transport, walk and other means which are not a car	28	23.7	25.7	100.0
		Total	109	92.4	100.0	
	Missing	System	9	7.6		
	Total		118	100.0		

Table 4-32: Descriptive statistics for means of transportation that respondents use for reaching green/ open spaces (the West End and Bearsden)

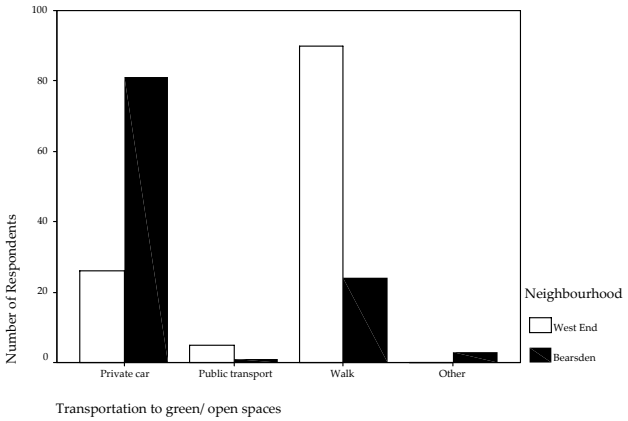


Figure 4-47: Bar graph for means of transportation that respondents use for reaching green/ open spaces (the West End and Bearsden)

43. Transportation to post office, bank and other administration

Transportation to post office, bank and other administration

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private car	19	14.8	15.3	15.3
		Public transport, walk and other means which are not a car	105	82.0	84.7	100.0
		Total	124	96.9	100.0	
	Missing	System	4	3.1		
	Total		128	100.0		
Suburban, Bearsden	Valid	Private car	67	56.8	58.8	58.8
		Public transport, walk and other means which are not a car	47	39.8	41.2	100.0
		Total	114	96.6	100.0	
	Missing	System	4	3.4		
	Total		118	100.0		

Table 4-33: Descriptive statistics for means of transportation that respondents use for reaching post office, bank and other administration (the West End and Bearsden)

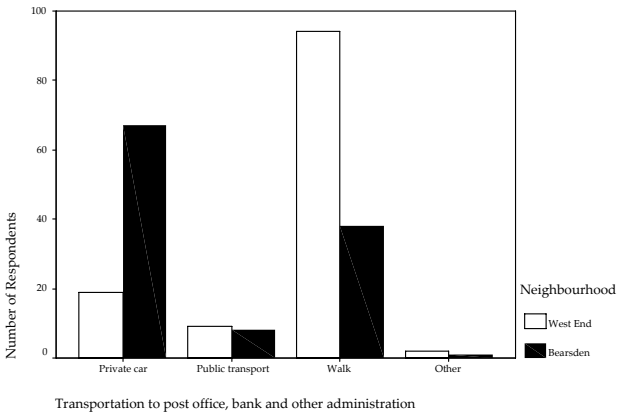


Figure 4-48: Bar graph for means of transportation that respondents use for reaching post office, bank and other administration (the West End and Bearsden)

44. Transportation to the library

Transportation to a library

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private car	14	10.9	15.9	15.9
		Public transport, walk and other means which are not a car	74	57.8	84.1	100.0
		Total	88	68.8	100.0	
	Missing	System	40	31.3		
	Total		128	100.0		
Suburban, Bearsden	Valid	Private car	46	39.0	53.5	53.5
		Public transport, walk and other means which are not a car	40	33.9	46.5	100.0
		Total	86	72.9	100.0	
	Missing	System	32	27.1		
	Total		118	100.0		

Table 4-34: Descriptive statistics for means of transportation that respondents use for reaching the library (the West End and Bearsden)

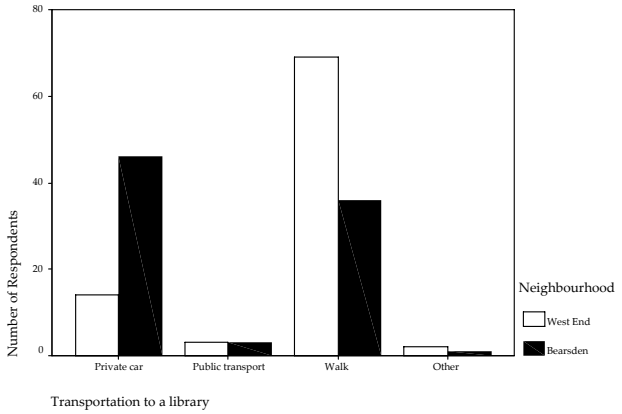


Figure 4-49: Bar graph for means of transportation that respondents use for reaching the library (the West End and Bearsden)

45. Transportation to cinema and theatre

Transportation to cinema/ theatre

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private car	37	28.9	32.2	32.2
		Public transport, walk and other means which are not a car	78	60.9	67.8	100.0
		Total	115	89.8	100.0	
	Missing	System	13	10.2		
	Total		128	100.0		
Suburban, Bearsden	Valid	Private car	84	71.2	85.7	85.7
		Public transport, walk and other means which are not a car	14	11.9	14.3	100.0
		Total	98	83.1	100.0	
	Missing	System	20	16.9		
	Total		118	100.0		

Table 4-35: Descriptive statistics for means of transportation that respondents use for reaching cinema and theatre (the West End and Bearsden)

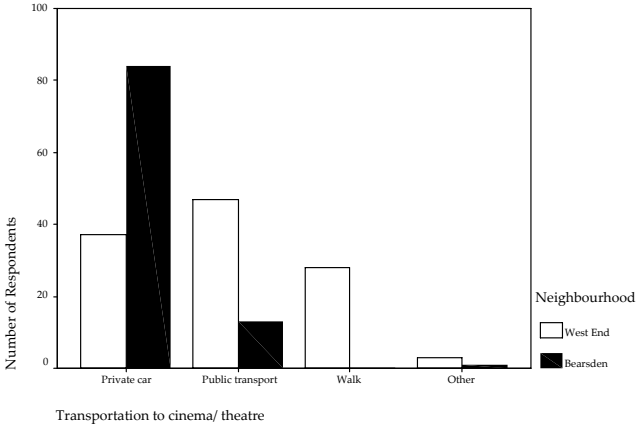


Figure 4-50: Bar graph for means of transportation that respondents use for reaching cinema and theatre (the West End and Bearsden)

46. Transportation to restaurants, pubs and cafés

Transportation to restaurants, pubs and cafes

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Private car	17	13.3	13.7	13.7
		Public transport, walk and other means which are not a car	107	83.6	86.3	100.0
		Total	124	96.9	100.0	
	Missing	System	4	3.1		
	Total		128	100.0		
Suburban, Bearsden	Valid	Private car	70	59.3	64.8	64.8
		Public transport, walk and other means which are not a car	38	32.2	35.2	100.0
		Total	108	91.5	100.0	
	Missing	System	10	8.5		
	Total		118	100.0		

Table 4-36: Descriptive statistics for means of transportation that respondents use for reaching restaurants, pubs and cafés (the West End and Bearsden)

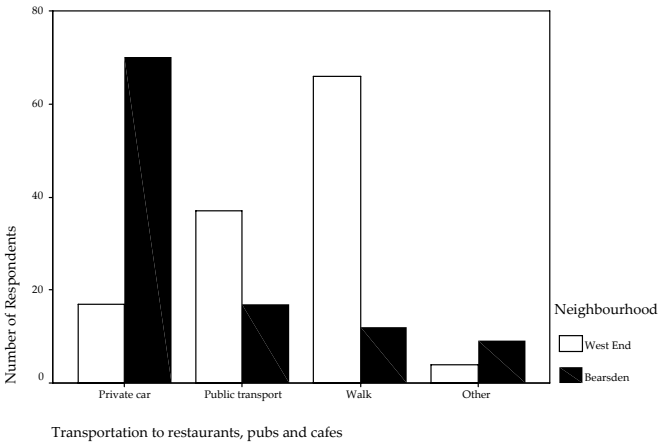


Figure 4-51: Bar graph for means of transportation that respondents use for reaching restaurants, pubs and cafés (the West End and Bearsden)

From the bar graphs given above, it can be noticed that in the West End, people reach certain facilities: daily shopping, health centre, green/ open spaces, post office, bank and other administration, library and restaurants, pubs and cafés, primarily on foot. Respondents from the West End mainly use the public transport system to reach the city centre, and for reaching other facilities they would either use a private car or different types of transportation in equal amounts. In Bearsden, respondents primarily use a private car for reaching all the listed facilities.

4.1.4 Descriptive Statistics for Respondent's use of Facilities in the two Neighbourhoods

In this section the respondents' frequency of using certain facilities and their satisfaction with the overall facilities provided by the neighbourhood will be presented in the form of graphs, and the respondents' perception on the lack of certain facilities in the residential neighbourhood are going to be presented numerically and in a bar graph.

The first block of descriptive statistics in this section regards the same group of facilities that was used for the analysis of transportation habits of residents in the previous section. The difference is that now, the descriptive statistics will be given for frequencies in attending those facilities. Since variables on frequencies of attending facilities are of continuous type, the line graphs will be used for their representation.

47. Frequency in going to the city centre

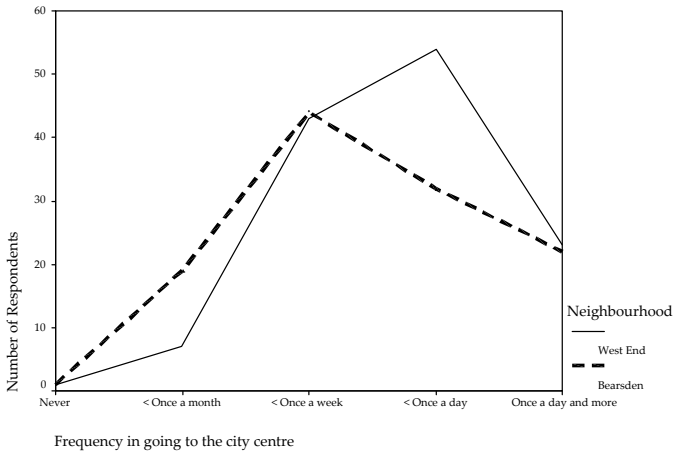


Figure 4-52: Line graph for respondent's frequency in going to Glasgow city centre (the West End and Bearsden)

48. Frequency in daily shopping

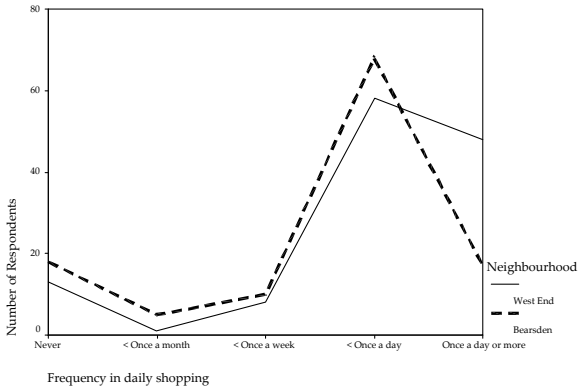


Figure 4-53: Line graph for respondent's frequency of daily shopping (the West End and Bearsden)

49. Frequency in weekly shopping

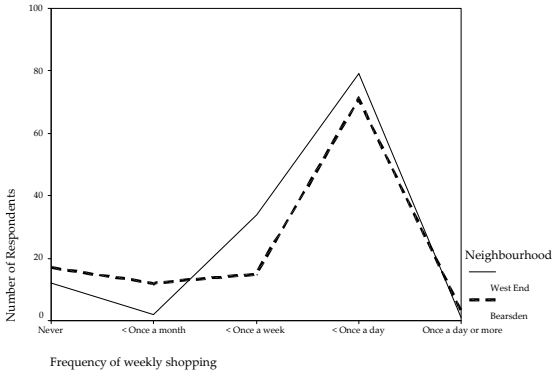


Figure 4-54: Line graph for respondent's frequency of weekly shopping (the West End and Bearsden)

50. Frequency in going to a health centre

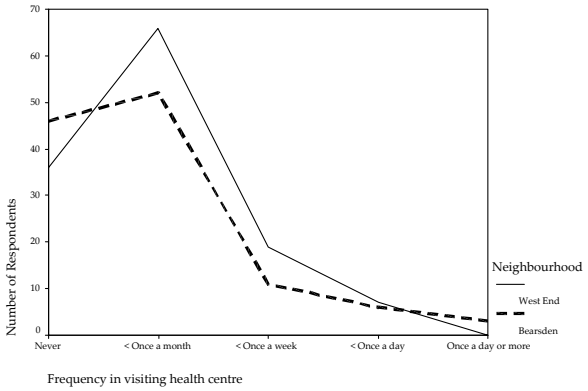


Figure 4-55: Line graph for respondent's frequency of visiting a health centre in the West End and Bearsden

51. Frequency in going to a sport centre

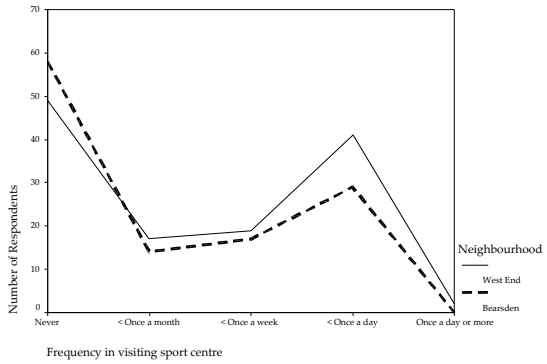


Figure 4-56: Line graph for respondent's frequency of visiting a sport centre in the West End and Bearsden

52. Frequency in going to green/ open spaces

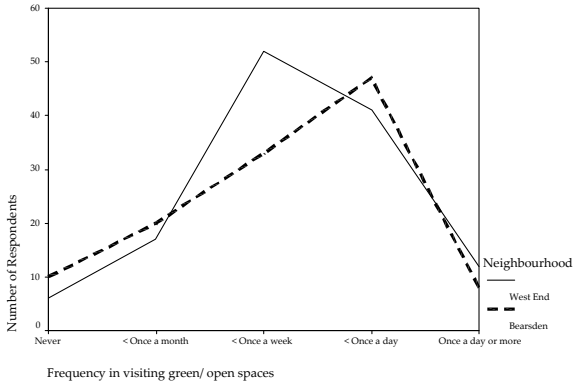


Figure 4-57: Line graph for respondent's frequency in visiting green/ open spaces in the West End and Bearsden

53. Frequency in going to a post office, bank and other administration

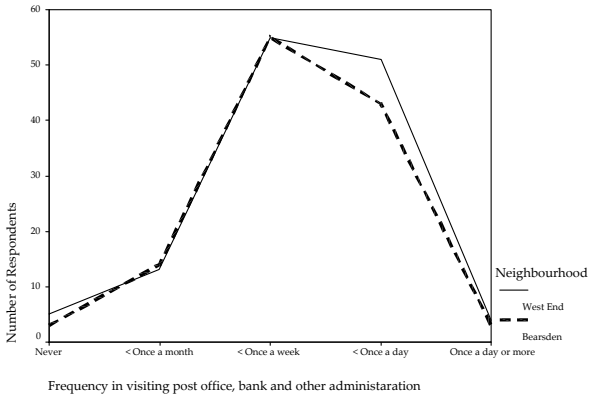


Figure 4-58: Line graph for respondent's frequency in visiting post office, bank and other administration in the West End and Bearsden

54. Frequency in going to a library

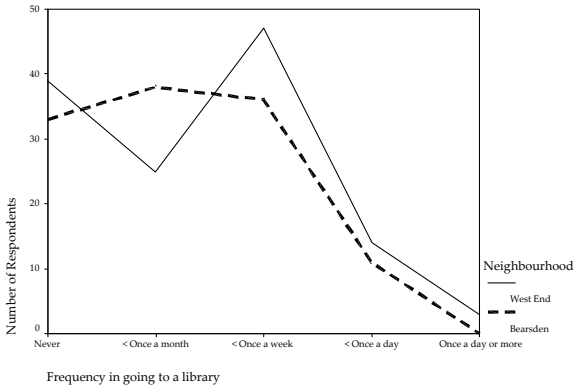


Figure 4-59: Line graph for respondent's frequency in going to a library in the West End and Bearsden

55. Frequency in going to a cinema and theatre

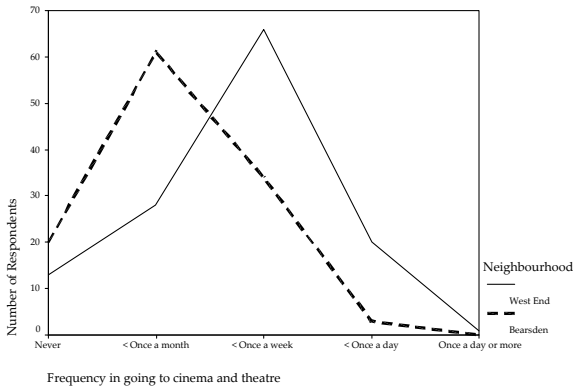


Figure 4-60: Line graph for respondent's frequency in going to cinema and theatre in the West End and Bearsden

56. Frequency in going to restaurants, pubs and cafés

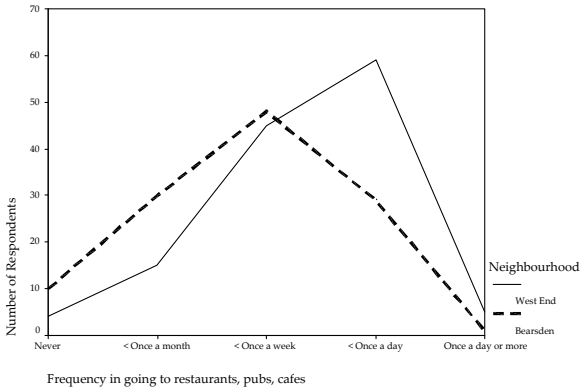


Figure 4-61: Line graph for respondent's frequency in going to restaurants, pubs, cafés in the West End and Bearsden

From the line graphs for respondents' frequencies in visiting certain facilities, it can be noticed that in the West End and Bearsden, shopping facilities (daily and weekly shopping) are the most frequently attended (several times a week). For respondents from the West End, it is Glasgow city centre and restaurants, pubs and cafés that the majority of respondents visit with the same level of frequency as for shopping facilities. Most of the respondents from Bearsden visit green/ open spaces several times a week, while respondents from the West End visit these places less frequently (several times a month). Least frequently attended facilities for both neighbourhoods are health centres (several times a year). In case of frequency in attending sport facilities, graphs in both neighbourhoods had 2 peaks, i.e. most of the respondents either did not use sport facilities at all or used them several times a week.

The following graph refers to respondent's satisfaction with the overall facilities provide by the residential neighbourhood. Since this variable is of a continuous type, it will be represented by the line graph for each neighbourhood, respectively.

57. Very happy with overall facilities provided by neighbourhood

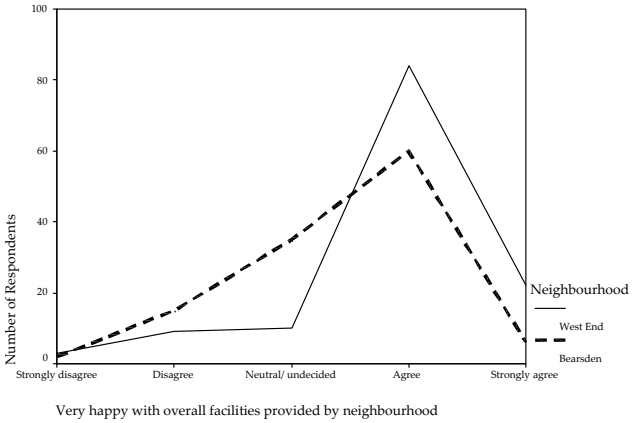


Figure 4-62: Line graph for respondent's happiness with the overall facilities provided by the West End and Bearsden

As seen from the line graph above, in both neighbourhoods, the majority of respondents are happy with the overall facilities provided by the neighbourhood. However, when comparing two neighbourhoods, in the West End there are more respondents than in Bearsden who 'agree' and 'strongly agree' with the statement 'I am very happy with overall facilities provided by my neighbourhood'.

Next table and bar graph show descriptive statistics on residents' perception of the lack of facilities in the residential neighbourhood.

58. Lack of facilities that respondent would require in the neighbourhood

Lack of facilities in the neighbourhood

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	Facilities for young children	13	10.2	10.2	10.2
		Sport facilities	10	7.8	7.8	18.0
		Transport facilities	7	5.5	5.5	23.4
		Shopping facilities	9	7.0	7.0	30.5
		Other facilities	15	11.7	11.7	42.2
		No facilities are lacking	74	57.8	57.8	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	Facilities for young children	11	9.3	9.3	9.3
		Sport facilities	1	.8	.8	10.2
		Cinema, better variety of restaurants and pubs, youth centre	29	24.6	24.6	34.7
		Transport facilities	9	7.6	7.6	42.4
		Shopping facilities	12	10.2	10.2	52.5
		Other facilities	3	2.5	2.5	55.1
		No facilities are lacking	53	44.9	44.9	100.0
		Total	118	100.0	100.0	

Table 4-37: Descriptive statistics for respondent's perception on lack of facilities in the West End and Bearsden

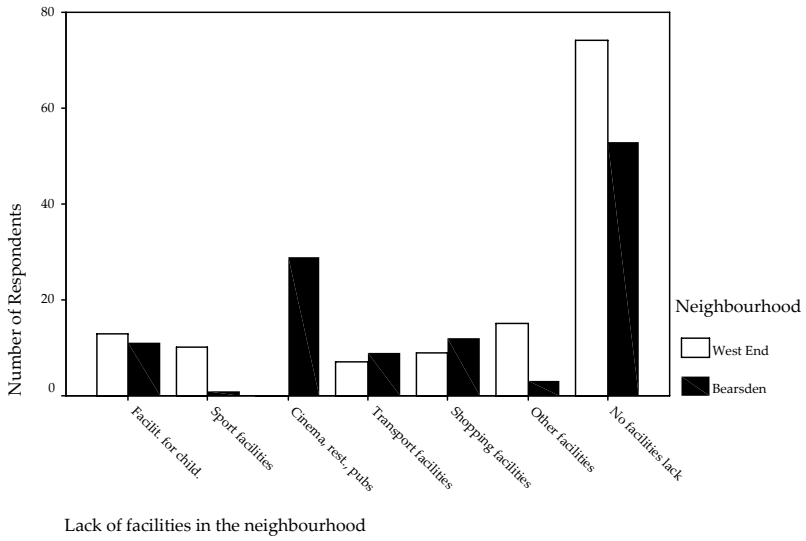


Figure 4-63: Bar graph for respondent's perception on lack of facilities in the West End and Bearsden

First thing it can be noticed from the bar graph given above, is that respondents in each neighbourhood primarily think that no facilities are lacking in their residential neighbourhood. If we observe only those facilities respondents perceived as lacking in the neighbourhood, apart from the cinema, restaurants and pubs, which do not lack

in the West End, there is more or less equal distribution among all other lacking facilities in this neighbourhood. In Bearsden, majority of respondents said their neighbourhood lacked cinema and better variety of restaurants and pubs.

4.1.5 Descriptive Statistics for Amenities of the two Neighbourhoods

Regarding amenities of the West End and Bearsden, the respondents from both neighbourhoods were asked to choose only three amenities from the list of 14, and to give them rank (1st amenity, 2nd amenity and 3rd amenity).

The list of amenities includes: general location (of the neighbourhood), appearance of area (neighbourhood), reduced traffic and noise, proximity to work, quality/ location of schools, community amenities (e.g. shops, parks, recreation areas), places of entertainment, bigger house, private garden, smaller house, type of home, home ownership, property values, and other amenities.

Following are the descriptive statistics of the three variables: first, second and third ranked amenity of the neighbourhood, according to the respondents of the West End and Bearsden.

59. First amenity of the residential neighbourhood

First ranked amenity of the neighbourhood

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	General location of the neighbourhood	51	39.8	39.8	39.8
		Appearance of the neighbourhood	5	3.9	3.9	43.8
		Reduced traffic and noise	3	2.3	2.3	46.1
		Proximity to work or place of daily activity	16	12.5	12.5	58.6
		Quality / location od schools	5	3.9	3.9	62.5
		Community amenities	2	1.6	1.6	64.1
		Places of entertainment	1	.8	.8	64.8
		Change in household size	11	8.6	8.6	73.4
		Bigger house	13	10.2	10.2	83.6
		Private garden	1	.8	.8	84.4
		Smaller house	1	.8	.8	85.2
		Change of household type	2	1.6	1.6	86.7
		Owning a house	3	2.3	2.3	89.1
		Property values, re-sale values	6	4.7	4.7	93.8
		Other	8	6.3	6.3	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	General location of the neighbourhood	38	32.2	32.2	32.2
		Appearance of the neighbourhood	3	2.5	2.5	34.7
		Reduced traffic and noise	1	.8	.8	35.6
		Proximity to work or place of daily activity	7	5.9	5.9	41.5
		Quality / location od schools	12	10.2	10.2	51.7
		Community amenities	2	1.7	1.7	53.4
		Change in household size	4	3.4	3.4	56.8
		Bigger house	15	12.7	12.7	69.5
		Private garden	4	3.4	3.4	72.9
		Change of household type	9	7.6	7.6	80.5
		Owning a house	8	6.8	6.8	87.3
		Property values, re-sale values	6	5.1	5.1	92.4
		Other	9	7.6	7.6	100.0
		Total	118	100.0	100.0	

Table 4-38: Descriptive statistics for respondent's first ranked amenity of the West End and Bearsden

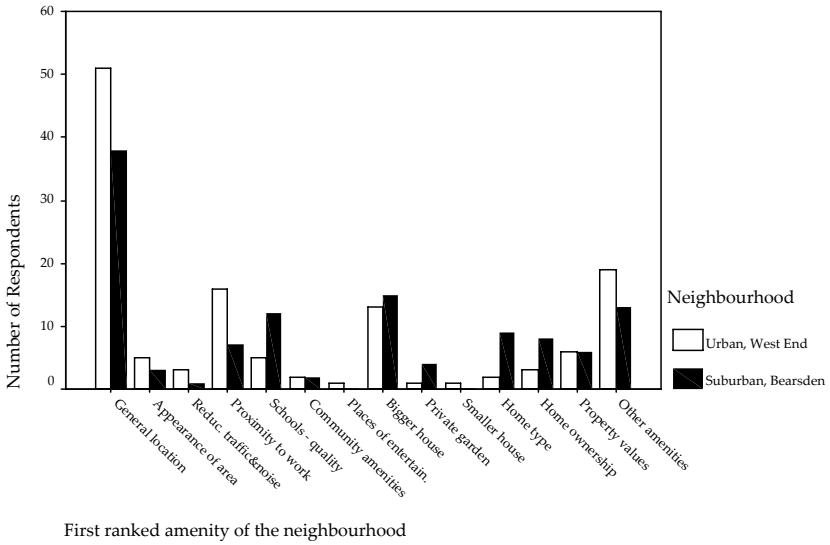


Figure 4-64: Bar graph for respondent's first ranked amenity of the West End and Bearsden

From the bar graph given above, one can notice that the majority of respondents in each neighbourhood give the highest rank to the amenity of the general location of the neighbourhood.

60. Second amenity of the residential neighbourhood

Second ranked amenity of the neighbourhood

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	General location of the neighbourhood	29	22.7	22.7	22.7
		Appearance of the neighbourhood	22	17.2	17.2	39.8
		Reduced traffic and noise	5	3.9	3.9	43.8
		Proximity to work or place of daily activity	19	14.8	14.8	58.6
		Quality / location od schools	6	4.7	4.7	63.3
		Community amenities	16	12.5	12.5	75.8
		Places of entertainment	9	7.0	7.0	82.8
		Change in household size	2	1.6	1.6	84.4
		Bigger house	9	7.0	7.0	91.4
		Private garden	3	2.3	2.3	93.8
		Smaller house	1	.8	.8	94.5
		Change of household type	2	1.6	1.6	96.1
		Owning a house	2	1.6	1.6	97.7
		Property values, re-sale values	1	.8	.8	98.4
		Other	2	1.6	1.6	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	General location of the neighbourhood	30	25.4	25.4	25.4
		Appearance of the neighbourhood	12	10.2	10.2	35.6
		Reduced traffic and noise	3	2.5	2.5	38.1
		Proximity to work or place of daily activity	8	6.8	6.8	44.9
		Quality / location od schools	14	11.9	11.9	56.8
		Community amenities	7	5.9	5.9	62.7
		Change in household size	7	5.9	5.9	68.6
		Bigger house	8	6.8	6.8	75.4
		Private garden	11	9.3	9.3	84.7
		Smaller house	1	.8	.8	85.6
		Change of household type	8	6.8	6.8	92.4
		Owning a house	1	.8	.8	93.2
		Property values, re-sale values	7	5.9	5.9	99.2
		Other	1	.8	.8	100.0
		Total	118	100.0	100.0	

Table 4-39: Descriptive statistics for respondent's second ranked amenity of the West End and Bearsden

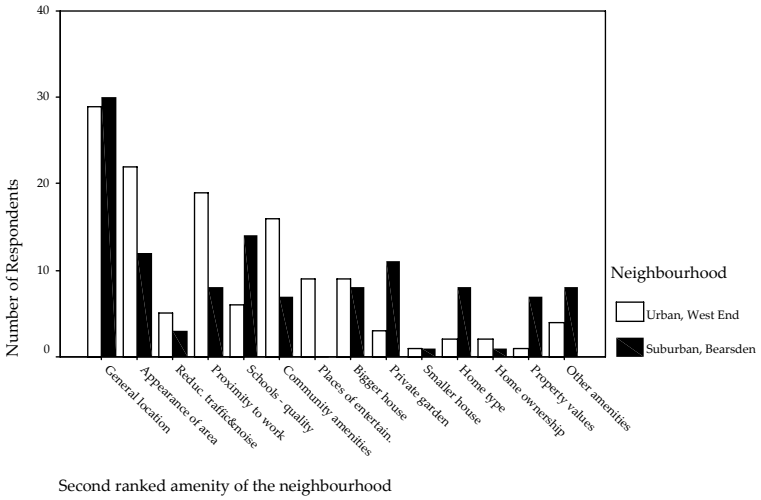


Figure 4-65: Bar graph for respondent's second ranked amenity of the West End and Bearsden

Bar graph on the second ranked amenity of the neighbourhood shows that majority of respondents in the West End and Bearsden, give second rank also to the amenity of general location of the neighbourhood. However, having that general location of the neighbourhood is already first ranked amenity, we can observe that the appearance of area (neighbourhood) is the second ranked amenity in the West End, and the quality of schools is the second ranked amenity in Bearsden.

61. Third ranked amenity of the residential neighbourhood

Third ranked amenity of the neighbnourhood

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	General location of the neighbourhood	20	15.6	15.6	15.6
		Appearance of the neighbourhood	23	18.0	18.0	33.6
		Reduced traffic and noise	7	5.5	5.5	39.1
		Proximity to work or place of daily activity	13	10.2	10.2	49.2
		Quality / location od schools	2	1.6	1.6	50.8
		Community amenities	17	13.3	13.3	64.1
		Places of entertainment	12	9.4	9.4	73.4
		Bigger house	4	3.1	3.1	76.6
		Private garden	9	7.0	7.0	83.6
		Smaller house	2	1.6	1.6	85.2
		Change of household type	2	1.6	1.6	86.7
		Owning a house	5	3.9	3.9	90.6
		Property values, re-sale values	10	7.8	7.8	98.4
		Other	2	1.6	1.6	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	General location of the neighbourhood	26	22.0	22.0	22.0
		Appearance of the neighbourhood	21	17.8	17.8	39.8
		Reduced traffic and noise	3	2.5	2.5	42.4
		Proximity to work or place of daily activity	9	7.6	7.6	50.0
		Quality / location od schools	16	13.6	13.6	63.6
		Community amenities	5	4.2	4.2	67.8
		Places of entertainment	1	.8	.8	68.6
		Change in household size	2	1.7	1.7	70.3
		Bigger house	9	7.6	7.6	78.0
		Private garden	7	5.9	5.9	83.9
		Owning a house	3	2.5	2.5	86.4
		Property values, re-sale values	13	11.0	11.0	97.5
		Other	3	2.5	2.5	100.0
		Total	118	100.0	100.0	

Table 4-40: Descriptive statistics for respondent's third ranked amenity of the West End and Bearsden

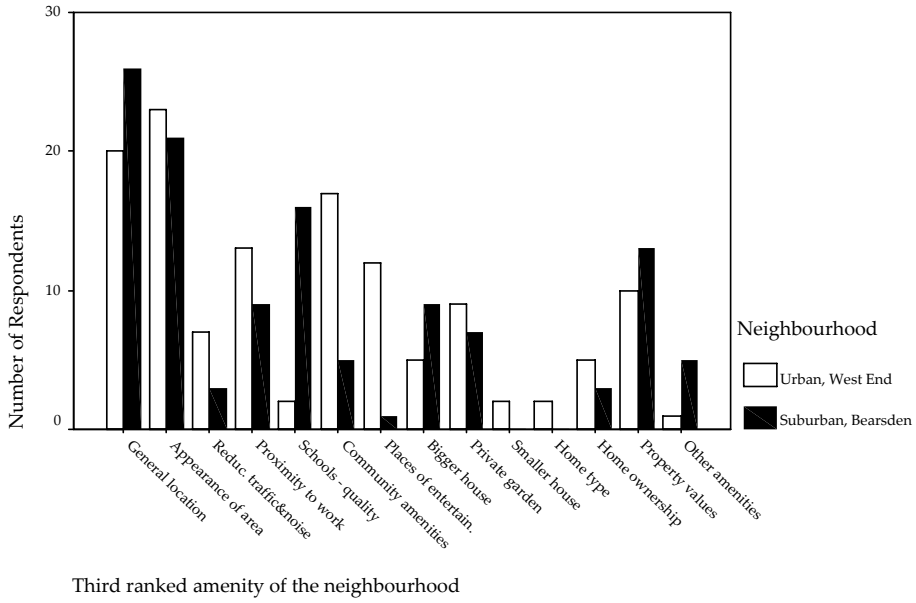


Figure 4-66: Bar graph for respondent's third ranked amenity of the West End and Bearsden

From the bar graph for the third ranked amenity of the neighbourhood, it can be noticed that in the West End, most of the respondents opted for the appearance of the area (neighbourhood). However, as the appearance of the neighbourhood is already second ranked amenity and general location is the first ranked amenity of the West End, it is the community amenities that come on the third place of the West End amenities. In Bearsden, most of the respondents chose the general location of the neighbourhood as the third ranked amenity. Since general location is already the first ranked amenity in Bearsden, it should be excluded from consideration for the third ranked amenity. Therefore, it is the appearance of the area (neighbourhood) that takes a place of a third ranked amenity in Bearsden.

4.1.6 Descriptive Statistics for Residential Mobility Intentions of Respondents in the two Neighbourhoods

This section includes only one question about residential mobility intentions of respondents from the West End and Bearsden. They were asked to say where they would like to live if they could exercise their choice to move anywhere else but within their present neighbourhood. All the responses to this open-ended question were systematised in 3 groups of answers: I would like to move to the opposite type

of neighbourhood (rural or suburban for the West End respondents, and urban for Bearsden respondents); I would like to move to the neighbourhood of the same type as present (another part of Glasgow, which is not the West End or another city, for the respondents from the West End, and other suburban neighbourhood, which is not Bearsden, for the respondents from Bearsden); and I don't want to leave my neighbourhood.

Since the variable on residential mobility intentions is of categorical type, it will be presented in tables and bar graphs, comparatively for respondents from the West End and Bearsden.

62. Living anywhere else but in the present neighbourhood

Residential mobility

Neighbourhood			Frequency	Percent	Valid Percent	Cumulative Percent
Urban, West End	Valid	I'd like to move to oppos. type of neigh. or out of Glw.	48	37.5	37.5	37.5
		I would like to move within the same type of neighbourhood	32	25.0	25.0	62.5
		I don't want to leave my neighbourhood	48	37.5	37.5	100.0
		Total	128	100.0	100.0	
Suburban, Bearsden	Valid	I'd like to move to oppos. type of neigh. or out of Glw.	36	30.5	30.5	30.5
		I would like to move within the same type of neighbourhood	14	11.9	11.9	42.4
		I don't want to leave my neighbourhood	68	57.6	57.6	100.0
		Total	118	100.0	100.0	

Table 4-41: Descriptive statistics for respondent's residential mobility intentions (the West End and Bearsden)

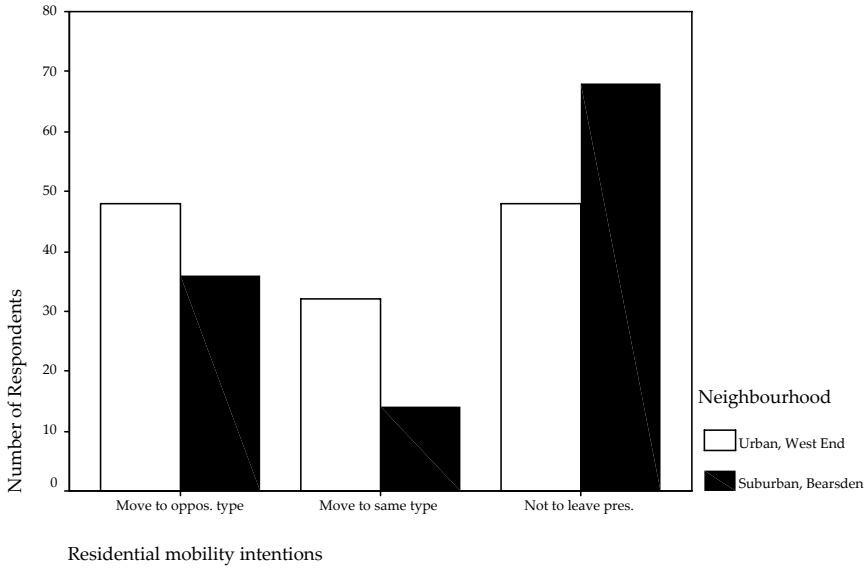


Figure 4-67: Bar graph for respondent's residential mobility intentions (the West End and Bearsden)

From the previous bar graph, it can be noticed that in the West End, there is almost an equal proportion of respondents who wish to move to the opposite type of neighbourhood, those who wish to move to the similar type of neighbourhood and those who wish not to move at all from the West End. In Bearsden, the bar graph shows a slightly different picture. Majority of respondents does not want to leave Bearsden at all, and from those who would like to move somewhere else, there are more respondents who would like to go to the opposite type of neighbourhood (i.e.urban).

5 Findings on the Relationships among Variables of Residential Preference Components in the two types of Neighbourhoods

5.1 Attachment

Attachment is one of the most personal components of residential preferences. It concerns overall emotional attachment people feel toward their neighbourhood, or what we address as *'community sentiment'*, and people's satisfaction with the neighbourhood (or local community) meeting their individual needs, or what we define as *'community evaluation'*.

5.1.1 Community sentiment

This theme is one of the fundamental for the social sciences. Community sentiment is one of the most personal experiences in the residential neighbourhood. It concerns the 'level to which residents feel like they are a part of their community' (Talen, 2001), which applied to our case, represents the degree to which residents of prestigious, i.e. residentially attractive neighbourhoods of urban and suburban type, feel they are emotionally attached to their residential neighbourhoods.

The aim of empirical research is to determine how community sentiment varies by the socio-economic characteristics of residents as well as by the environmental context of their residential neighbourhoods. Community sentiment is regarded as a dependent variable and variables describing socio-economic features of the neighbourhood and environmental context are the independent ones.

For the socio-economic features of the neighbourhood, the following variables were taken in consideration: type of household, gender, age group, marital status, education, job situation and professional occupation of respondents.

Environmental context is described by: present type of home, ownership of home, duration of living in the present home and in the present neighbourhood, type of neighbourhood in the childhood, possession of a private garden and perception on its importance, similarity with neighbours, frequency in meeting the neighbours, happiness with contacts with neighbours, perception on neighbourhood safety,

perception on neighbourhood pollution, satisfaction with the neighbourhood facilities, and perception on lack of facilities in the neighbourhood.

Presuming the difference between the West End of Glasgow (urban neighbourhood) and Bearsden (suburban neighbourhood), community sentiment was analysed independently for each of the case study neighbourhoods. The difference in community sentiment between the two neighbourhoods can be statistically analysed applying the T-test. This statistical test is used because there is one categorical independent variable: type of neighbourhood, with two categories (West End-urban neighbourhood, and Bearsden–suburban neighbourhood) and one continuous dependent variable: emotional attachment to the residential neighbourhood, which is measured by the Likert type of scale (ranks from 1 to 5, where 1 stands for the weakest emotional attachment, and 5 for the strongest emotional attachment towards the residential neighbourhood).

Group Statistics

	Neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the residential neighbourhood	West End-urban	128	3.78	.97	8.59E-02
	Bearsden-suburban	118	4.18	.90	8.31E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the residential neighbourhood	Equal variances assumed	2.472	.117	-3.311	244	.001	-.40	.12	-.63	-.16
	Equal variances not assumed			-3.320	243.985	.001	-.40	.12	-.63	-.16

Table 5-1: Independent samples T-test for difference in mean scores of emotional attachment to the residential neighbourhood between the West End and Bearsden

As we can see from the table, since the *Sig.* value (.117) in Levine's Test for the Equality of Variances is above .05, the assumption on equal variances has not been violated. As *Sig. (2-tailed)* value (.001) is less than .05, we conclude that there is a statistically significant difference in mean scores of emotional attachment to the residential neighbourhood between residents from the West End (urban neighbourhood) and residents from Bearsden (suburban neighbourhood). According to the mean values from the *Group Statistics Table*, Bearsden had higher mean scores on emotional attachment to the residential neighbourhood. However, the magnitude of differences between our two neighbourhoods in terms of emotional attachment to the residential neighbourhood can be calculated using the following formula for eta squared:

$$\text{Eta squared} = \frac{t^2}{t^2 + (N1 + N2 - 2)}$$

Equation 5-1: Formula for calculating Eta-squared value (Pallant, 2001:180)

Replacing with the appropriate values from the T-test above, the following result is obtained:

Eta squared= $(-3.31)^2$: $((-3.31)^2+(128+118-2))=10.9561:254.9561= .04$

The guidelines (proposed by Cohen, 1988) for interpreting this value are: .01=small effect, .06=moderate effect, .14=large effect. According to these guidelines, our result of .04 explains that there is a small effect size for difference between the West End and Bearsden in terms of emotional attachment of their residents to the residential neighbourhood.

5.1.1.1 The West End – urban neighbourhood

Statistical tests for the relationships between the variables of socio-economic characteristics as the independent ones and community sentiment (emotional attachment) in the West End as the dependent variable

Deriving from the Questionnaire on Residential Preferences, there were 8 independent variables of socio-economic characteristics of respondents in the West End that were analysed individually in their relationship with the community sentiment in the West End. The following questions regard these relationships and each one of them has the explanation of the statistical significance of the result.

Question 1: Is there a relationship between the household type and community sentiment (emotional attachment) in the West End?

Independent variable (type of household) is of categorical type (6 categories) and dependent variable (emotional attachment) is continuous, measured by the Likert type of scale (ranging from 1 that stands for the weakest emotional attachment to the West End to 5 standing for the strongest emotional attachment to the West End).

For this type of analysis, Kruskal-Wallis (non-parametric) test has to be applied as an alternative to One-way ANOVA parametric test. One-way ANOVA could not have been applied because the assumption on equal variances has been violated.

Ranks

	Household type	N	Mean Rank
Emotional attachment to the West End	Single adult household (less than 60yrs old)	18	64.44
	Two or more adults (44yrs old and younger) without children	34	47.57
	Parent(s) living with at least one child of 14yrs and under	34	58.28
	Parent(s) living with children of 15yrs and above	10	62.05
	Two or more people of middle to old age (45yrs+)	18	87.00
	Single old household	14	93.61
	Total	128	

Test Statistics[a,b]

	Emotional attachment to the West End
Chi-Square	25.977
df	5
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: Household type

Table 5-2: Kruskal-Wallis Test for the relationship between type of household and emotional attachment to the West End

When interpreting the results from Kruskal-Wallis Test, the main piece of information is *Asymp. Sig.* value (Pallant, 2001). If this significance level is a value less than .05 (in our case this value is .00) than we can conclude that there is a statistically significant difference in our continuous variable (emotional attachment to the West End) across the six groups of household types. An inspection of the mean ranks for the groups suggests that older households and single households of all ages had highest emotional attachment to the West End.

Additionally to this, it is also interesting to see if households with children differ from households without children in terms of their community sentiment.

Question 2: Are households with children in the West End more emotionally attached to their residential neighbourhood than households without children?

Categorical independent variable in this relationship is household type with 2 groups only: households with children and households without children. Emotional attachment to the West End is continuous dependent variable. Having variables of these two types we apply T-test for testing their relationship.

Group Statistics

	Household type 2 groups	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Households with children	44	3.64	1.01	.15
	Households without children	84	3.86	.95	.10

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.884	.349	-1.224	126	.223	-.22	.18	-.58	.14
	Equal variances not assumed			-1.197	82.314	.235	-.22	.18	-.59	.15

Table 5-3: Independent samples T-test for difference in mean scores of emotional attachment to the West End between households with children and households without children

Since *Sig.* value (.349) in Levine's test for the Equality of Variances is above .05, we have not violated the assumption on equal variances and we are looking under the first line for the *Sig. (2-tailed)* value. As this value (.223) is above .05, we conclude that there is <u>not</u> a statistically significant difference in the mean scores of emotional attachment to the West End for households with children and households without children.

Question 3: Is there a difference between males and females in their emotional attachment to the West End?

Categorical independent variable (respondent's gender) is dichotomous, i.e. with 2 categories while emotional attachment to the West End is a continuous dependent variable. According to the types of variables, T-test was chosen for statistical testing of this relationship.

Group Statistics

	Respondent's gender	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Male	62	3.82	.91	.12
	Female	66	3.74	1.03	.13

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	1.930	.167	.465	126	.643	8.02E-02	.17	-.26	.42
	Equal variances not assumed			.467	125.647	.641	8.02E-02	.17	-.26	.42

Table 5-4: Independent samples T-test for difference between males and females in their emotional attachment to the West End

Since the assumption on equal variances has not been violated (*Sig.* value .167 in Levine's Test is above .05) we are looking under the first line for the *Sig. (2-tailed)* value. However, this value (.643) is above the required cut off of .05, and we conclude that in the West End there is <u>not</u> a statistically significant difference in the mean emotional attachment to the residential neighbourhood between males and females.

Question 4: Is there a relationship between the respondent's age and emotional attachment to the West End?

For testing this relationship, we shall use the age group as a categorical independent variable of 4 categories, and emotional attachment to the West End is a continuous dependent variable. For this type of analysis, Kruskal-Wallis (non-parametric) test has to be applied as an alternative to One-way ANOVA parametric test. One-way ANOVA could not have been applied since the assumption on equality of variances has not been met.

Ranks

	Respondent's age group	N	Mean Rank
Emotional attachment to the West End	15-29yrs	29	41.43
	30-44yrs	48	59.03
	45-59yrs	25	71.10
	60yrs+	26	93.98
	Total	128	

Test Statistics[a,b]

	Emotional attachment to the West End
Chi-Square	32.828
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: Respondent's age group

Table 5-5: Kruskal–Wallis Test for the difference in emotional attachment to the West End between different age groups of residents

Since *Asymp. Sig. value* (.00) in the table above is less than .05, there is a statistically significant difference in emotional attachment to the West End across four age groups of respondents, and if we look for the mean ranks of our continuous variable, we conclude that older people are more emotionally attached to the West End than younger people. Therefore we can say that respondents' age influences community sentiment.

Question 5: Is there a relationship between marital status and emotional attachment to the West End?

For testing this relationship, marital status is taken as a categorical independent variable (with 2 categories) and emotional attachment to the West End is continuous dependent variable.

Group Statistics

	Marital status	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Living with a partner/ Married	74	3.70	1.00	.12
	Single/ Divorced/ Separated/ Widowed	54	3.89	.92	.13

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	1.772	.186	-1.071	126	.286	-.19	.17	-.53	.16
	Equal variances not assumed			-1.085	119.252	.280	-.19	.17	-.53	.15

Table 5-6: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents who are married or living with a partner and residents who are single, divorced, separated or widowed

Since *Sig.* value (.186) in Levine's test for equality of variances is above .05, we have not violated the assumption on equal variances and we are looking for the *Sig. (2-tailed)* value in the first line. As this value (.286) is above .05, we conclude that there is not a statistically significant difference in the mean scores of emotional attachment to the West End between respondents who are living with a partner or are married on one side, and those who are single or divorced or separated or widowed on the other side.

Question 6: Is there a relationship between respondent's highest achieved level of formal education and emotional attachment to the West End?

The highest achieved level of education is regarded as categorical independent variable where, for the purposes of easier categorisation, respondents are divided in two groups (those who have not completed undergraduate studies and those with completed undergraduate or postgraduate studies). Emotional attachment to the West End is a continuous dependent variable in this analysis. Because of the type of variables involved, T-test has been used as a statistical technique for testing the relationship among variables.

Group Statistics

	Highest level of education (2 groups)	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Less than completed undergraduate studies	38	4.13	.93	.15
	Completed undergraduate or postgraduate studies	90	3.63	.95	.10

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.350	.555	2.717	126	.008	.50	.18	.14	.86
	Equal variances not assumed			2.738	70.939	.008	.50	.18	.14	.86

Table 5-7: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents who have less than completed undergraduate studies and those with completed undergraduate and postgraduate studies

In this test, the assumption on equal variances has not been violated (*Sig.* value .55) and as the *Sig. (2-tailed)* value .008 is less than .05, we conclude that there is a statistically significant difference in the mean scores of emotional attachment to the West End between people who have less than completed undergraduate studies and those who have completed undergraduate or postgraduate studies. According to the mean values from the *Group Statistics Table*, people with higher education are less emotionally attached to the West End than people with less than completed undergraduate studies. However, when we calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the result .03 which was obtained in this case says that there is a small effect size for difference between people with less than completed undergraduate studies and those with completed undergraduate and postgraduate studies in terms of their emotional attachment to the West End.

Question 7: Is there a relationship between the job situation and emotional attachment to the West End?

For testing this relationship, we shall employ job situation as a categorical independent variable. For the purposes of this testing, this variable includes only two categories (1=employees and 2=others). Emotional attachment to the West End is a continuous dependent variable in this analysis. Because of the type of variables involved, T-test has been used as a statistical technique for testing the relationship among variables.

Group Statistics

	Job situation	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Employee (Full/Part time, Self empl.)	80	3.59	.90	.10
	Other (student,retired, looking after home...)	48	4.10	1.02	.15

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.156	.693	-3.003	126	.003	-.52	.17	-.86	-.18
	Equal variances not assumed			-2.910	89.511	.005	-.52	.18	-.87	-.16

Table 5-8: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents who are employees and others (students, retired people, those who look after home/ family, unemployed, permanently sick/ disabled)

As we can see from the table, since the *Sig.* value (.693) in Levine's Test for the Equality of Variances is above .05, the assumption on equal variances has not been

violated. As *Sig. (2-tailed)* value (.003) is less than .05, we conclude that there is a statistically significant difference in mean scores of emotional attachment to the West End between the residents who are employees (full/ part time or self employed) and others (students, retired people, people looking after home/ family, unemployed, permanently sick/ disabled). According to the mean values from the *Group Statistics Table*, employees are less emotionally attached to the West End than non-employees. However, if we calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the result .03 which is obtained in this case says that there is a small effect size for difference between employees and other, non-employees in terms of their emotional attachment to the West End.

Question 8: Do people of professional and other occupations differ in terms of their community sentiment (emotional attachment) to the West End?

Current occupation is a categorical independent variable (2 categories) and emotional attachment to the West End is continuous dependent variable. Statistical test, which is applied for testing this relationship, is the T-test.

Group Statistics

	Current occupation (2 groups)	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Professionals	70	3.63	.92	.11
	Other, non-professionals	58	3.97	1.01	.13

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.012	.914	-1.975	126	.050	-.34	.17	-.67	6.03E-04
	Equal variances not assumed			-1.958	116.815	.053	-.34	.17	-.68	3.80E-03

Table 5-9: Independent samples T-test for difference in mean scores of emotional attachment to the West End between professionals and people of other occupation

As the *Sig.* value in this test is .914 and that is above .05, we have not violated the assumption on equality of variances. If we look under the *Sig. (2-tailed)* value, since it is equal .05 we conclude that there is a statistically significant difference in the mean scores of emotional attachment to the West End between people who are of professional occupation and those of other occupations (including students and retired population). According to the mean values from the *Group Statistics Table*, professionals are less emotionally attached to the West End than people of other occupations. However, when we calculate the effect size of this result according to Cohen's (1988) formula for eta squared given (see Equation 5-1), the value we

obtain is .01, and that stands for a small effect size for difference between professionals and people of other occupations in terms of their emotional attachment to the West End.

From the statistical analyses on relationships between independent variables of socio-economic characteristics and community sentiment (emotional attachment) in the West End, it can be concluded that many of those relationships showed to be statistically significant. Yet, a few variables (e.g. households with children, gender of respondents and their marital status) have not shown a statistically significant effect on community sentiment in the West End.

In order to have a better view on correlation among all variables of socio-economic characteristics of respondents, which have previously been found to influence the emotional attachment to the West End, table of Pearson's correlations would give us a good general impression. Pearson correlation (r) ranges from –1.00 to 1.00, indicating the strength of the relationship between the two variables. A correlation of 0 indicates no relationship at all, a correlation of 1.0 indicates a perfect positive correlation, and value –1.0 indicates a perfect negative correlation (Pallant, 2001). To interpret the results which are in between, the guidelines suggested by Cohen (1988) are as follows: r = .01 to .29 stands for small correlation; r = .30 to .49 represents medium correlation; and r = .50 to 1.0 represents large correlation. All these values are qualified regardless the sign in front of them, which, basically indicates only the direction of the relationship.

Following are the results of Pearson Correlation among variables: emotional attachment to the West End, household type, respondent's age group, highest achieved level of formal education, job situation, respondent's occupation.

Correlations

		Emotional attachment to the West End	Household type	Respondent's age group	Highest level of education (2 groups)	Job situation, 2 groups)	Current occupation (2 groups)
Emotional attachment to the West End	Pearson Correlation	1.000	.362**	.498**	-.235**	.258**	.173
	Sig. (2-tailed)	.	.000	.000	.008	.003	.050
	N	128	128	128	128	128	128
Household type	Pearson Correlation	.362**	1.000	.767**	-.424**	.447**	.330**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000
	N	128	128	128	128	128	128
Respondent's age group	Pearson Correlation	.498**	.767**	1.000	-.307**	.355**	.229**
	Sig. (2-tailed)	.000	.000	.	.000	.000	.009
	N	128	128	128	128	128	128
Highest level of education	Pearson Correlation	-.235**	-.424**	-.307**	1.000	-.486**	-.645**
	Sig. (2-tailed)	.008	.000	.000	.	.000	.000
	N	128	128	128	128	128	128
Job situation	Pearson Correlation	.258**	.447**	.355**	-.486**	1.000	.592**
	Sig. (2-tailed)	.003	.000	.000	.000	.	.000
	N	128	128	128	128	128	128
Current occupation	Pearson Correlation	.173	.330**	.229**	-.645**	.592**	1.000
	Sig. (2-tailed)	.050	.000	.009	.000	.000	.
	N	128	128	128	128	128	128

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5-10: Pearson Correlation between variables of socio-economic characteristics that are related to emotional attachment to the West End

When observing the results from the table of Pearson correlation, we can notice that respondent's age group has a large correlation with emotional attachment to the West End (r=.50), and there is a medium positive correlation between the household type and emotional attachment to the West End (r=.36). However, it is also important to underline that respondent's age group and household type are in large positive correlation (r=.77).

Statistical tests for the relationships between the variables of environmental context as the independent ones and community sentiment (emotional attachment) in the West End as the dependent variable

Deriving from the Questionnaire on Residential Preferences, there were 13 independent variables of environmental context of respondents in the West End that were analysed individually in their relationship with the community sentiment in the West End. The following questions regard these relationships and each one of them has the explanation of the statistical significance of the result.

Question 9: Do people living in different types of homes differ in terms of emotional attachment to the West End?

The type of home is categorical independent variable, and for the purposes of this analysis, different types of homes in the West End, are generalised in two categories (1=house; 2=flat). Emotional attachment to the West End is continuous dependent

variable. Knowing the type of variables involved in testing this relationship, the T-test will be applied.

Group Statistics

	Type of home (2 groups)	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	House (detached; semi-detached; terraced)	41	4.12	.87	.14
	Flat (tenement; high-rise or block of flat)	87	3.62	.98	.10

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	2.032	.156	2.796	126	.006	.50	.18	.15	.86
	Equal variances not assumed			2.916	87.368	.005	.50	.17	.16	.84

Table 5-11: Independent samples T-test for difference in mean scores of emotional attachment to the West End between people living in houses and in flats

With the assumption on equality of variances not being violated (*Sig.* value in Levine's Test is above .05), we are interested in the *Sig. (2-tailed)* value. As this value (.006) is less than .05, we conclude that there is a statistically significant difference in the mean scores of emotional attachment to the West End between people who live in houses (detached, semi-detached, and terraced) and those living in flats (tenement, high-rise or block of flat). According to the mean values from the *Group Statistics Table*, people living in houses are more emotionally attached to the West End than the people living in flats. However, when we calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the value we obtain is .03, and that stands for a small effect size for difference between people living in houses and people living in flats in terms of their emotional attachment to the West End.

Question 10: Is there a relationship between home ownership and emotional attachment to the West End?

Home ownership is a categorical independent variable with two categories and emotional attachment to the West End is a continuous dependent variable. Statistical test, which is applied for testing this relationship, is the T-test.

Group Statistics

	Ownership of home (2 categories)	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Not owner occupied	22	3.41	1.10	.23
	Owner occupied	106	3.86	.93	9.04E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.457	.500	-1.997	126	.048	-.45	.22	-.89	-4.16E-03
	Equal variances not assumed			-1.791	27.601	.084	-.45	.25	-.96	6.49E-02

Table 5-12: Independent samples T-test for difference in mean scores of emotional attachment to the West End between owner-occupiers and not owner-occupiers

Since the assumption on equality of variances has not been violated and the *Sig. (2-tailed)* value (.048) is less than .05, we conclude that there is a statistically significant difference in the mean scores of emotional attachment to the West End between people who live in owner occupied homes and those living in non owner occupied homes. Although the mean values from the *Group Statistics Table* show that owner occupiers are more emotionally attached to the West End than non owner occupiers, if we calculate the effect size of this result using the Cohen's (1988) formula for eta squared (see Equation 5-1), the result .02 we obtain stands for a small effect size.

Question 11: Is there a relationship between the duration of living in a present home and emotional attachment to the West End?

Duration of living in a present home is a categorical independent variable with two categories (living in a present home for less and equal 5 years and living in a present home 6 years and longer). Emotional attachment to the West End is a continuous dependent variable.

Group Statistics

	Duration of living in a present home	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Less or equal 5 years	76	3.53	.93	.11
	6 years and longer	52	4.15	.92	.13

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.022	.883	-3.771	126	.000	-.63	.17	-.96	-.30
	Equal variances not assumed			-3.783	110.885	.000	-.63	.17	-.96	-.30

Table 5-13: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents living in their present home for up to 5 years and those living in their present home 6 years and longer

The assumption on equality of variances has not been violated and the *Sig. (2-tailed)* value (.000) is less than .05, therefore we conclude that there is a statistically significant difference in the mean scores of emotional attachment to the West End between residents living in their present home for less and equal 5 years and those

living in their homes for 6 years and longer. Test indicates that emotional attachment to the West End increases with longer staying in a present home. If we calculate effect size for this result according to Cohen (1988) formula for eta squared (see Equation 5-1), the value of .06 we obtain explains a medium effect size for the influence of resident's duration of living in a present home on their emotional attachment to the West End.

Question 12: Is there a relationship between the duration of living in the West End and emotional attachment to it?

For testing this relationship, the duration of living in the present neighbourhood (the West End) is taken as categorical independent variable, with 2 categories (up to 10 years of living in the West End, and 11 years and longer of living in the West End). Emotional attachment to the West End is continuous dependent variable. Regarding the types of variables involved, statistical test, which will be applied, is the T-test.

Group Statistics

	Duration of living in a present neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Up to 10 years	60	3.38	.92	.12
	11 years and longer	68	4.13	.88	.11

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.057	.812	-4.700	126	.000	-.75	.16	-1.06	-.43
	Equal variances not assumed			-4.686	122.313	.000	-.75	.16	-1.07	-.43

Table 5-14: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents living in the West End for up to 10 years and those living in the West End for 11 years and longer

The assumption on equality of variances has not been violated and the *Sig. (2-tailed)* value (.000) is less than .05, therefore we conclude that there is a statistically significant difference in the mean scores of emotional attachment to the West End between residents living in this neighbourhood for less and equal 10 years and those living in the West End for 11 years and longer. Test indicates that emotional attachment to the West End increases with longer staying in this neighbourhood. If we calculate effect size for this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the value of .08 we obtain explains a medium effect size for the influence of resident's duration of living in the West End on its emotional attachment to this neighbourhood.

Question 13: Is there a relationship between the resident's type of neighbourhood in the childhood and emotional attachment to the West End?

Type of neighbourhood in childhood is categorical independent variable with two categories (urban type of neighbourhood, and suburban or rural type of neighbourhood). Emotional attachment to the West End is continuous dependent variable. Statistical test, which is applied for testing the relationship between these two variables, is T-test.

Group Statistics

	Type of neighbourhood in childhood	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Urban	48	4.04	.92	.13
	Suburban or rural type of neighbourhood	80	3.63	.97	.11

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	2.157	.144	2.392	126	.018	.42	.17	7.20E-02	.76
	Equal variances not assumed			2.425	103.360	.017	.42	.17	7.59E-02	.76

Table 5-15: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents who lived in the same type of neighbourhood in the childhood and those who lived in opposite types of neighbourhoods in the childhood

Since we have not violated the assumption on equality of variances (*Sig.* value (.144) in Levine's Test is above .05), we can look at the *Sig. (2-tailed)* value for Equal variances assumed. As this value (.018) is less than .05, we conclude that there is a statistically significant difference in the mean scores of emotional attachment to the West End between residents who lived in the same type of neighbourhood in the childhood and those who lived in the opposite type of neighbourhood in the childhood. According to the mean values from the *Group Statistics Table*, those respondents who lived in an urban environment when they were children are more emotionally attached to the West End. However, calculated eta squared value (see Equation 5-1) for this result is .02, and according to Cohen (1988) this stands for a small effect size of the result.

Question 14: Is there a relationship between home having a private garden and emotional attachment to the West End?

For testing this relationship, home having a private garden is a categorical independent variable of 2 categories and emotional attachment to the West End is continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Home having a private garden yes/no	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Yes	35	4.14	.88	.15
	No	93	3.65	.97	.10

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	1.618	.206	2.643	126	.009	.50	.19	.13	.87
	Equal variances not assumed			2.770	67.351	.007	.50	.18	.14	.86

Table 5-16: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents who have home with a private garden and residents who don't have a private garden

The assumption on equality of variances has not been violated and the *Sig. (2-tailed)* value (.009) is less than .05, therefore we conclude that there is a statistically significant difference in the mean scores of emotional attachment to the West End between residents who live in a home having a private garden and those who live in a home without a private garden. Although the mean values from the *Group Statistics Table* show that people who live in a home with a private garden are more emotionally attached to the West End, the magnitude of differences between residents who live in a home with a private garden and those living in home without a private garden in terms of their emotional attachment to the West End can be calculated by Cohen's (1988) formula for eta squared (see Equation 5-1). Since eta squared value in this case is .03, this stands for a small effect size of relationship between home having a private garden and emotional attachment to the West End.

Question 15: Does the perception on importance of having a private garden influence community sentiment in the West End?

For testing this relationship, perceived importance of having a private garden by the respondents is taken as categorical independent variable with 2 categories (having a private garden is less than important and having a private garden is important or very important). Emotional attachment to the West End is taken as a continuous dependent variable. According to the types of variables involved in testing this relationship, it is the T-test that will be applied.

Group Statistics

	Private garden-very important (2 categories)	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End neighbourhood	Less than agree	68	3.94	.91	.11
	Agree to strongly agree	60	3.60	1.01	.13

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	1.236	.268	2.006	126	.047	.34	.17	4.61E-03	.68
	Equal variances not assumed			1.993	119.746	.049	.34	.17	2.25E-03	.68

Table 5-17: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents who think that having a private garden is less than important and those who think that having a private garden is important

Since we have not violated the assumption on equality of variances (*Sig.* value (.268) in Levine's Test is above .05), we can look at the *Sig. (2-tailed)* value for Equal variances assumed. As this value (.047) is less than .05, we conclude that there is a statistically significant difference in the mean scores of emotional attachment to the West End between residents who perceive that having a private garden is less than important and those who think that having a private garden is important or very important. According to the mean values from the *Group Statistics Table*, residents who perceive that having a private garden is less than important are more emotionally attached to the West End. However, if we calculate eta squared for this result (see Equation 5-1), the value obtained is .02, and that stands for a small effect size of this result.

Question 16: Is there a relationship between the next-door neighbours' similarities and community sentiment in the West End?

In testing this relationship, the similarities with the next-door neighbours are taken as a categorical independent variable with two categories (1= there are similarities with the next-door neighbours; 2= there are no similarities between the next-door neighbours), and emotional attachment to the West End is continuous dependent variable. Statistical test, which is applied in testing the relationship between these two variables, is the T-test.

Group Statistics

	Similarities with next-door neighbours	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	There are similarities with the next-door neighbours	74	3.84	1.01	.12
	There are no similarities between the next-door neighbours	54	3.70	.92	.13

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.990	.322	.770	126	.443	.13	.17	-.21	.48
	Equal variances not assumed			.781	119.512	.437	.13	.17	-.21	.47

Table 5-18: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents who feel there are similarities between the next-door neighbours and those who feel there are no similarities between the next-door neighbours

Since *Sig.* value (.322) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.443) is above .05, we conclude that in the West End there is not a statistically significant difference in mean scores of emotional attachment to the present neighbourhood between those respondents who feel there are similarities between them and their next-door neighbours and those who think there are no similarities between them and their next-door neighbours.

Question 17: Is there a relationship between the level of happiness with contacts with neighbours and emotional attachment to the West End?

For this type of analysis, happiness with contacts with neighbours is taken as a categorical independent variable of 4 levels (disagree to strongly agree), and emotional attachment to the West End as a continuous dependent variable. Regarding the type of variables involved, statistical test, which should be applied, is One-way ANOVA.

Descriptives

Emotional attachment to the West End

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Disagree	6	3.00	1.26	.52	1.67	4.33	1	5
Neutral/ undecided	33	3.52	.91	.16	3.19	3.84	2	5
Agree	65	3.86	.92	.11	3.63	4.09	2	5
Strongly agree	24	4.13	.99	.20	3.71	4.54	2	5
Total	128	3.78	.97	8.59E-02	3.61	3.95	1	5

Test of Homogeneity of Variances

Emotional attachment to the West End

Levene Statistic	df1	df2	Sig.
.380	3	124	.768

Since *Sig.* value (.768) in Levine's Test is above .05, we have not violated the assumption on equality of variances.

ANOVA

Emotional attachment to the West End

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.254	3	3.085	3.458	.019
Within Groups	110.621	124	.892		
Total	119.875	127			

As *Sig.* value (.019) in ANOVA table is less than .05, we conclude that there is a statistically significant difference in the mean scores of emotional attachment to the West End between residents who differ in the level of satisfaction with contacts with neighbours.

Multiple Comparisons

Dependent Variable: Emotional attachment to the West End
Tukey HSD

(I) Happy with contacts with neighbours	(J) Happy with contacts with neighbours	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Disagree	Neutral/ undecided	-.52	.42	.608	-1.59	.56
	Agree	-.86	.40	.141	-1.90	.17
	Strongly agree	-1.13*	.43	.045	-2.23	-1.75E-02
Neutral/ undecided	Disagree	.52	.42	.608	-.56	1.59
	Agree	-.35	.20	.315	-.87	.17
	Strongly agree	-.61	.25	.076	-1.26	4.11E-02
Agree	Disagree	.86	.40	.141	-.17	1.90
	Neutral/ undecided	.35	.20	.315	-.17	.87
	Strongly agree	-.26	.23	.647	-.84	.32
Strongly agree	Disagree	1.13*	.43	.045	1.75E-02	2.23
	Neutral/ undecided	.61	.25	.076	-4.11E-02	1.26
	Agree	.26	.23	.647	-.32	.84

*. The mean difference is significant at the .05 level.

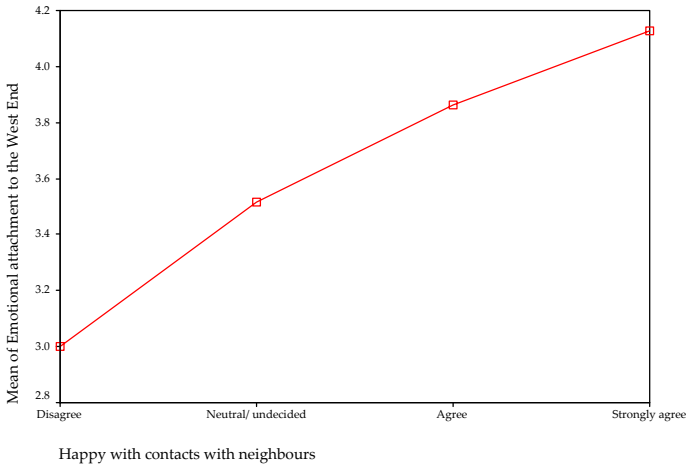


Figure 5-1: Means Plots diagram for the relationship between happiness with contacts with neighbours and emotional attachment to the West End

From the results of this analysis we can conclude that respondents who are happier with the contacts with neighbours are more emotionally attached to the West End. It is possible do determine the effect size for this result by calculating eta squared. The formula is:

$$\text{Eta squared} = \frac{\text{Sum of squares between} - \text{groups}}{\text{Total sum of squares}}$$

Equation 5-2: Formula for calculating Eta-squared, one of the most common effect size statistics (Pallant, 2001:191)

In this way, when we calculate eta squared in our example: 9.254 divided by 119.875, the result is .08. Following the Cohen's (1988) classification of eta-squared

values, .01 stands for a small effect, .06 for a medium effect and .14 for a large effect, we can conclude that in the case of relationship between the happiness with contacts with the next-door neighbours and emotional attachment to the West End, there is a medium effect size of this result.

Question 18: Is there a relationship between feeling of safety in the West End and emotional attachment to it?

Feeling of safety in the West End is taken as a categorical independent variable with 2 categories (1= feeling less than safe in the West End; 2= feeling safe or very safe in the West End), and emotional attachment to the West End is continuous dependent variable. For testing the relationship between these two variables, we shall apply the T-test.

Group Statistics

	Feeling very safe in the West End	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Less than agree	42	3.79	1.02	.16
	Agree to strongly agree	86	3.78	.95	.10

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.514	.475	.036	126	.971	6.64E-03	.18	-.36	.37
	Equal variances not assumed			.035	76.194	.972	6.64E-03	.19	-.37	.38

Table 5-19: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents who feel less than safe in the West End and residents who feel safe in the West End

Since the *Sig.* value (.475) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.971) is above .05, we conclude that in the West End there is <u>not</u> a statistically significant difference in the mean scores of emotional attachment to the residential neighbourhood between the respondents who feel less than safe in the West End in comparison to those who feel safe and very safe in the West End.

Question 19: Do perceived pollution problems in the West End influence community sentiment in this neighbourhood?

Pollution in the West End (as perceived by the respondents) is a categorical independent variable with 2 categories and emotional attachment to the West End is continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Pollution problems in the West End	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Yes	36	3.64	1.02	.17
	No	92	3.84	.95	9.93E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.706	.402	-1.037	126	.302	-.20	.19	-.58	.18
	Equal variances not assumed			-1.007	60.337	.318	-.20	.20	-.59	.20

Table 5-20: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents who feel there are pollution problems in the West End and residents who feel there are no pollution problems in the West End

Since *Sig.* value (.402) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for *Sig. (2-tailed)* value. As this value (.302) is above .05, we conclude that in the West End there is <u>not</u> a statistically significant difference in the mean scores of emotional attachment to the residential neighbourhood between those respondents who feel that the West End has pollution problems and those who think that the West End doesn't have pollution problems.

Question 20: Is there a relationship between resident's satisfaction with the overall facilities provided by the West End and community sentiment in it?

For testing this relationship, satisfaction with the overall facilities provided by the West End is taken as categorical independent variable with 2 categories, and emotional attachment to the West End is continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Very happy with overall facilities provided by	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	Less than agree	22	3.45	1.01	.22
	Agree to strongly agree	106	3.85	.95	9.27E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.084	.773	-1.747	126	.083	-.39	.23	-.84	5.23E-02
	Equal variances not assumed			-1.682	29.285	.103	-.39	.23	-.87	8.51E-02

Table 5-21: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents who are less than happy with the overall facilities provided by the West End and residents who are happy or very happy with the overall facilities provided by the West End

Since *Sig.* value (.773) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.083) is above .05, we conclude that in the West End there is not a statistically significant difference in the mean scores of attachment to the residential neighbourhood between those respondents who are less than happy with the overall facilities provided by the West End and those respondents who are happy or very happy with the overall facilities provided by the West End.

Question 21: Does a lack of certain facilities in the West End affect community sentiment in it?

For analysing this relationship, we shall take lack of certain facilities in the West End as a categorical independent variable with 2 categories, and emotional attachment to the West End as a continuous dependent variable. Statistical test applied, again for testing the relationship between these two variables, is the T-test.

Group Statistics

	Lack of facilities in the neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to the West End	No facilities are lacking in the West End	74	3.91	.98	.11
	There is a lack of certain facilities	54	3.61	.94	.13

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to the West End	Equal variances assumed	.713	.400	1.705	126	.091	.29	.17	-4.73E-02	.64
	Equal variances not assumed			1.717	117.081	.089	.29	.17	-4.52E-02	.63

Table 5-22: Independent samples T-test for difference in mean scores of emotional attachment to the West End between residents who feel there is a lack of certain facilities in the West End and resident who feel there are no facilities lacking in the West End

Since *Sig.* value (.400) in the Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.091) is above .05, we conclude that in the West End there is not statistically significant difference in the mean scores of emotional attachment to the residential neighbourhood between those respondents who don't feel lack of any facilities in the West End and those respondents who feel that certain facilities lack in the West End.

From the statistical analyses on relationships between independent variables of environmental context and community sentiment (emotional attachment) in the West End, it can be noticed that 8 out of 13 independent variables showed a statistically

significant relationship with the emotional attachment to the West End. On the other hand variables, such as: similarities between the next-door neighbours, perceived neighbourhood safety, perceived neighbourhood pollution, satisfaction with the overall facilities provided by the residential neighbourhood, and perception on lack of facilities in the residential neighbourhood have not shown a statistically significant effect on community sentiment in the West End.

Following are the results of Pearson Correlation between variable of emotional attachment to the West End and variables of environmental context of respondents, which have previously shown to be related to the emotional attachment to the West End.

Correlations

		Emotional attachment to the West End	Type of home	Ownership of home	Duration of living in a present home	Duration of living in a present neighbourhood	Type of neighbourhood in childhood	Home having a private garden	Private garden-very important	Happy with contacts with neighbours
Emotional attachment to the West End	Pearson Correlation	1.000	-.242**	.175*	.318**	.386**	-.208*	-.229**	-.176*	.274**
	Sig. (2-tailed)	.	.006	.048	.000	.000	.018	.009	.047	.002
	N	128	128	128	128	128	128	128	128	128
Type of home	Pearson Correlation	-.242**	1.000	-.180*	-.012	-.074	.056	.631**	-.194*	-.145
	Sig. (2-tailed)	.006	.	.043	.896	.404	.529	.000	.028	.103
	N	128	128	128	128	128	128	128	128	128
Ownership of home	Pearson Correlation	.175*	-.180*	1.000	.166	.070	-.053	-.187*	-.029	.330**
	Sig. (2-tailed)	.048	.043	.	.061	.432	.549	.035	.749	.000
	N	128	128	128	128	128	128	128	128	128
Duration of living in a present home	Pearson Correlation	.318**	-.012	.166	1.000	.586**	-.246**	-.028	-.267**	.358**
	Sig. (2-tailed)	.000	.896	.061	.	.000	.005	.755	.002	.000
	N	128	128	128	128	128	128	128	128	128
Duration of living in a present neighbourhood	Pearson Correlation	.386**	-.074	.070	.586**	1.000	-.307**	-.085	-.122	.285**
	Sig. (2-tailed)	.000	.404	.432	.000	.	.000	.343	.172	.001
	N	128	128	128	128	128	128	128	128	128
Type of neighbourhood in childhood	Pearson Correlation	-.208*	.056	-.053	-.246**	-.307**	1.000	.104	.210*	-.018
	Sig. (2-tailed)	.018	.529	.549	.005	.000	.	.242	.017	.839
	N	128	128	128	128	128	128	128	128	128
Home having a private garden	Pearson Correlation	-.229**	.631**	-.187*	-.028	-.085	.104	1.000	-.302**	-.017
	Sig. (2-tailed)	.009	.000	.035	.755	.343	.242	.	.001	.851
	N	128	128	128	128	128	128	128	128	128
Private garden-very important	Pearson Correlation	-.176*	-.194*	-.029	-.267**	-.122	.210*	-.302**	1.000	-.023
	Sig. (2-tailed)	.047	.028	.749	.002	.172	.017	.001	.	.794
	N	128	128	128	128	128	128	128	128	128
Happy with contacts with neighbours	Pearson Correlation	.274**	-.145	.330**	.358**	.285**	-.018	-.017	-.023	1.000
	Sig. (2-tailed)	.002	.103	.000	.000	.001	.839	.851	.794	.
	N	128	128	128	128	128	128	128	128	128

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5-23: Pearson Correlation between variables of environmental context that are related to emotional attachment to the West End

When observing the results from the table of Pearson correlation, we can notice that there is medium positive correlation between emotional attachment to the West End and duration of living in a present home (r=.32), medium positive correlation between emotional attachment to the West End and duration of living in the West End (r= .39), and medium positive correlation between emotional attachment to the West End and happiness with contacts with neighbours (r=.27). It is also important to note that there is a large positive correlation between duration of living in a present home and duration of living in the present neighbourhood (r=.59).

5.1.1.2 Bearsden – suburban neighbourhood

Statistical tests for the relationships between the variables of socio-economic characteristics as the independent ones and community sentiment (emotional attachment) in Bearsden as the dependent variable

Like previously applied in the West End case, in Bearsden the same 8 independent variables of socio-economic characteristics of the respondents were used in testing their individual relationship with the community sentiment (emotional attachment) to Bearsden.

Question 1: Is there a relationship between household type and emotional attachment to Bearsden?

Independent variable (type of household) is categorical (6 categories) and emotional attachment to Bearsden is a continuous dependent variable measured by the same Likert type of scale as in the case of emotional attachment to the West End. Normally, for this type of analysis we would apply One-way ANOVA test, but since we have not met the assumption on equal variances, we have to apply a non-parametric alternative to this test, which is the Kruskal-Wallis Test.

Ranks

	Household type	N	Mean Rank
Emotional attachment to Bearsden	Single adult household (less than 60yrs old)	5	49.80
	Two or more adults (44yrs old and younger) without children	4	16.50
	Parent(s) living with at least one child of 14yrs and under	30	52.48
	Parent(s) living with children of 15yrs and above	17	58.06
	Two or more people of middle to old age (45yrs+)	47	65.04
	Single old household	15	72.50
	Total	118	

Test Statistics[a,b]

	Emotional attachment to Bearsden
Chi-Square	13.160
df	5
Asymp. Sig.	.022

a. Kruskal Wallis Test

b. Grouping Variable: Household type

Table 5-24: Kruskal-Wallis Test for the relationship between type of household and emotional attachment to Bearsden

Since the *Asymp. Sig.* value (.022) from Kruskal-Wallis Test is less than .05, we conclude that there is a statistically significant difference in the emotional attachment to Bearsden across the six groups of household types. An inspection of the mean

ranks for the groups suggests that older households are more attached to Bearsden and the least attached to Bearsden are households of two or more adults up to 44 years old and without children.

Question 2: Are households with children in Bearsden more emotionally attached to their residential neighbourhood than households without children?

Categorical independent variable in this relationship is household type with 2 groups only: households with children and households without children. Emotional attachment to Bearsden is continuous dependent variable. Because of the type of variables involved, in statistical testing of their relationship we shall apply the T-test.

Group Statistics

	Household type, 2groups	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Households with children	47	4.02	.99	.14
	Households without children	71	4.28	.83	9.86E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	.801	.373	-1.544	116	.125	-.26	.17	-.59	7.37E-02
	Equal variances not assumed			-1.490	86.642	.140	-.26	.17	-.61	8.69E-02

Table 5-25: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between households with children and households without children

Since *Sig.* value in Levine's test is .373 and that is above .05, we have not violated assumption on equal variances. However, as *Sig. (2-tailed)* value is .125 and that is above .05, we conclude that there is <u>not</u> a statistically significant difference in mean scores of emotional attachment to Bearsden between households with children and those without children.

Question 3: Is there a difference between males and females in their emotional attachment to Bearsden?

For testing this relationship, categorical independent variable is respondent's gender, and emotional attachment to Bearsden is continuous dependent variable. Statistical test, which is applied regarding the type of variables, is the T-test.

Group Statistics

	Respondent's gender	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Male	65	4.18	.88	.11
	Female	53	4.17	.94	.13

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	.370	.544	.088	116	.930	1.48E-02	.17	-.32	.35
	Equal variances not assumed			.088	108.439	.930	1.48E-02	.17	-.32	.35

Table 5-26: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between males and females

The assumption on equality of variances has not been violated as *Sig.* value (.544) in Levine's Test is above .05. However, since *Sig. (2-tailed)* value (.93) is above .05, we conclude that there is not a statistically significant difference in mean scores of emotional attachment to Bearsden between males and females.

Question 4: Is there a relationship between the respondent's age and emotional attachment to Bearsden?

For testing this relationship, we have taken respondents' age group as a categorical independent variable (with 4 categories) while emotional attachment to Bearsden is continuous dependent variable. As we are able to apply parametric test for this relationship, we shall be using One-way ANOVA statistical test.

Descriptives

Emotional attachment to Bearsden

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
15-29yrs	4	3.75	.96	.48	2.23	5.27	3	5
30-44yrs	24	3.92	1.06	.22	3.47	4.36	1	5
45-59yrs	38	3.97	.88	.14	3.68	4.26	2	5
60yrs+	52	4.48	.75	.10	4.27	4.69	2	5
Total	118	4.18	.90	8.31E-02	4.01	4.34	1	5

Test of Homogeneity of Variances

Emotional attachment to Bearsden

Levene Statistic	df1	df2	Sig.
1.077	3	114	.362

Since the *Sig.* Value (.362) is above .05, we have not violated the assumption on homogeneity of variances.

ANOVA

Emotional attachment to Bearsden

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.725	3	2.908	3.831	.012
Within Groups	86.538	114	.759		
Total	95.263	117			

As *Sig.* value (.012) in ANOVA table is less than .05, we conclude that there is a statistically significant difference in the mean scores of emotional attachment to Bearsden between residents who are of four different age groups. Calculated eta-squared value (see Equation 5-2) is .09, therefore, according to Cohen (1988), we conclude that there is a medium effect size for this result.

Multiple Comparisons

Dependent Variable: Emotional attachment to Bearsden

Tukey HSD

(I) Respondent's age group	(J) Respondent's age group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
15-29yrs	30-44yrs	-.17	.47	.985	-1.39	1.06
	45-59yrs	-.22	.46	.962	-1.42	.97
	60yrs+	-.73	.45	.374	-1.91	.45
30-44yrs	15-29yrs	.17	.47	.985	-1.06	1.39
	45-59yrs	-5.70E-02	.23	.994	-.65	.54
	60yrs+	-.56*	.22	.048	-1.12	-3.51E-03
45-59yrs	15-29yrs	.22	.46	.962	-.97	1.42
	30-44yrs	5.70E-02	.23	.994	-.54	.65
	60yrs+	-.51*	.19	.037	-.99	-2.23E-02
60yrs+	15-29yrs	.73	.45	.374	-.45	1.91
	30-44yrs	.56*	.22	.048	3.51E-03	1.12
	45-59yrs	.51*	.19	.037	2.23E-02	.99

*. The mean difference is significant at the .05 level.

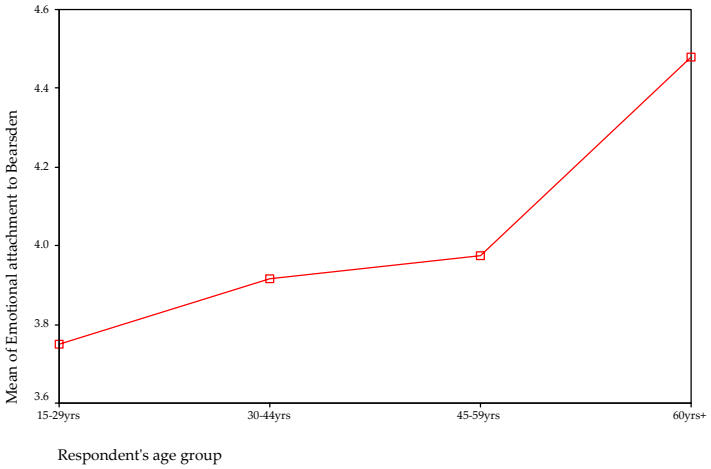


Figure 5-2: Means Plots diagram for the relationship between respondent's age and emotional attachment to Bearsden

Like it was previously shown in the West End (urban neighbourhood), in Bearsden (suburban neighbourhood) people's age also plays a significant role in determining community sentiment.

Question 5: Is there a relationship between marital status and emotional attachment to Bearsden?

For testing this relationship, marital status is taken as categorical independent variable (with 2 categories) and emotional attachment to Bearsden is continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Marital status	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Living with a partner/ Married	89	4.17	.89	9.49E-02
	Single/ Divorced/ Separated/ Widowed	29	4.21	.94	.17

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	.751	.388	-.198	116	.843	-3.84E-02	.19	-.42	.35
	Equal variances not assumed			-.193	45.698	.848	-3.84E-02	.20	-.44	.36

Table 5-27: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who are married or living with a partner and residents who are single, divorced, separated or widowed

Since *Sig.* value (.388) in Levine's Test for the Equality of Variances is above .05, we have not violated the assumption on equality of variances and we look under the first line for *Sig. (2-tailed)* value. As this value (.843) is above .05, we conclude that there is not a statistically significant difference in the mean scores of emotional attachment to Bearsden between those respondents living with a partner / married and those who are single/ divorced/ separated/ widowed.

Question 6: Is there a relationship between respondent's highest achieved level of formal education and emotional attachment to Bearsden?

The highest achieved level of education is regarded as categorical independent variable where, for the purposes of easier categorisation, respondents are divided in two groups (those who have not completed undergraduate studies and those with completed undergraduate or postgraduate studies). Emotional attachment to Bearsden is a continuous dependent variable of this analysis. Statistical test, which will be applied, is the T-test.

Group Statistics

	Highest level of education (2 groups)	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Less than completed undergraduate studies	51	4.27	.98	.14
	Completed undergraduate or postgraduate studies	67	4.10	.84	.10

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	1.167	.282	1.014	116	.313	.17	.17	-.16	.50
	Equal variances not assumed			.993	97.970	.323	.17	.17	-.17	.51

Table 5-28: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who have less than completed undergraduate studies and those with completed undergraduate and postgraduate studies

Since *Sig.* value (.282) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-*

tailed) value. As this value (.313) is above .05, we conclude that there is not a statistically significant difference in mean scores of emotional attachment to Bearsden between those respondents who are with less than completed undergraduate studies and those respondents with completed undergraduate or postgraduate studies.

Question 7: Is there a relationship between the job situation and emotional attachment to Bearsden?

For testing this relationship, we shall employ job situation as a categorical independent variable. For the purposes of this testing, this variable includes only two categories (1=employees and 2=others). Emotional attachment to Bearsden is a continuous dependent variable in this analysis. Because of the type of variables involved, T-test has been used as a statistical technique for testing the relationship among variables.

Group Statistics

	Job situation	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Employee (Full/Part time, Self empl.)	61	3.90	.96	.12
	Other (student,retired, looking after home...)	57	4.47	.73	9.73E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	3.116	.080	-3.614	116	.000	-.57	.16	-.89	-.26
	Equal variances not assumed			-3.647	111.697	.000	-.57	.16	-.88	-.26

Table 5-29: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who are employees and others (students, retired people, those who look after home/ family, unemployed, permanently sick/ disabled)

Since the *Sig.* value (.08) in Levine's test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.000) is less than .05, we conclude that there is a statistically significant difference in the mean scores of emotional attachment to Bearsden between residents who are employees (full/ part time or self employed) and others (students, retired people, people looking after home/ family, unemployed, permanently sick/ disabled). According to the mean values from the *Group Statistics Table*, employees are less emotionally attached to Bearsden than non-employees. However, if we calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the result .05 which is obtained in this

case says that there is a small effect size for difference between employees and other, non-employees in terms of their emotional attachment to Bearsden.

Question 8: Do people of professional and other occupations differ in terms of community sentiment in Bearsden?

Current occupation is a categorical independent variable (2 categories) and emotional attachment to Bearsden is continuous dependent variable. For the statistical testing of this relationship we shall apply the T-test.

Group Statistics

	Current occupation (2 groups)	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Professionals	57	3.96	.89	.12
	Other, non-professionals	61	4.38	.88	.11

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	.000	.988	-2.536	116	.013	-.41	.16	-.73	-9.03E-02
	Equal variances not assumed			-2.536	115.328	.013	-.41	.16	-.73	-9.02E-02

Table 5-30: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between professionals and people of other occupation

Since the *Sig.* value (.988) in Levine's test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.013) is less than .05, we conclude that there is a statistically significant difference in the mean scores of emotional attachment to Bearsden between residents of professional occupations and those of other occupations, latter being more emotionally attached to Bearsden according to the mean scores in *Group Statistics Table*. However, when we calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the result .03 which was obtained in this case says that there is a small effect size for difference between people of professional and other occupations in terms of their emotional attachment to Bearsden as their residential neighbourhood.

From the statistical analyses on relationships between independent variables of socio-economic characteristics and community sentiment (emotional attachment) in Bearsden, it can be observed that only 4 out of 8 independent variables proved to have a statistically significant relationship with the community sentiment in Bearsden. These four variables are: household type, age group, job situation, and current occupation.

In order to illustrate the correlation between these three variables and emotional attachment to Bearsden, we shall apply the Pearson correlation.

Correlations

		Emotional attachment to Bearsden	Household type	Respondent's age group	Job situation, 2 groups)	Current occupation (2 groups)
Emotional attachment to Bearsden	Pearson Correlation	1.000	.300**	.277**	.318**	.229*
	Sig. (2-tailed)	.	.001	.002	.000	.013
	N	118	118	118	118	118
Household type	Pearson Correlation	.300**	1.000	.787**	.589**	.313**
	Sig. (2-tailed)	.001	.	.000	.000	.001
	N	118	118	118	118	118
Respondent's age group	Pearson Correlation	.277**	.787**	1.000	.672**	.306**
	Sig. (2-tailed)	.002	.000	.	.000	.001
	N	118	118	118	118	118
Job situation, 2 groups)	Pearson Correlation	.318**	.589**	.672**	1.000	.459**
	Sig. (2-tailed)	.000	.000	.000	.	.000
	N	118	118	118	118	118
Current occupation (2 groups)	Pearson Correlation	.229*	.313**	.306**	.459**	1.000
	Sig. (2-tailed)	.013	.001	.001	.000	.
	N	118	118	118	118	118

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5-31: Pearson Correlation between variables of socio-economic characteristics that are related to emotional attachment to Bearsden

When observing the results from the table of Pearson correlation, it can be noticed that current occupation has small positive correlation with emotional attachment to Bearsden, while other three independent variables of respondents' socio-economic characteristics have a medium positive correlation with emotional attachment to Bearsden. However, it is also important to note that these three variables have large positive correlations among themselves.

Statistical tests for the relationships between the variables of environmental context as the independent ones and community sentiment (emotional attachment) in Bearsden as the dependent variable

Similarly to statistical analyses performed for the West End, there were 12 independent variables of environmental context of respondents in Bearsden, which were analysed individually in their relationship with the community sentiment in Bearsden. The following questions regard these relationships and each one of them has the explanation of the statistical significance of the result.

Question 9: Do people living in different types of homes differ in terms of emotional attachment to Bearsden?

For testing this relationship, the type of home is categorical independent variable consisting of 2 categories: houses and flats, and emotional attachment to Bearsden is continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Type of home (2 groups)	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	House (detached; semi-detached; terraced)	108	4.20	.88	8.50E-02
	Flat (tenement; high-rise or block of flat)	10	3.90	1.10	.35

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	1.301	.256	1.018	116	.311	.30	.30	-.29	.89
	Equal variances not assumed			.848	10.103	.416	.30	.36	-.49	1.10

Table 5-32: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between people living in houses and in flats

Since *Sig.* value (.256) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.311) is above .05, we conclude that there is <u>not</u> a statistically significant difference in the mean scores of emotional attachment to Bearsden between respondents living in houses and those living in flats. It is important to note that in Bearsden houses are the dominant type of dwellings and for that reason there was a majority of respondents who lived in houses.

Since in Bearsden owner occupied homes greatly outnumber not owner occupied homes, the statistical analysis of relationship between home ownership and emotional attachment to Bearsden was not possible to conduct.

Question 10: Is there a relationship between the duration of living in a present home and emotional attachment to Bearsden?

Duration of living in a present home is a categorical independent variable with two categories (living in a present home for less and equal 5 years and living in a present home 6 years and longer). Emotional attachment to Bearsden is a continuous dependent variable. T-test has been used as a statistical technique for testing the relationship between these two variables.

Group Statistics

	Duration of living in a present home (2 groups)	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Less or equal 5 years	26	3.73	1.04	.20
	6 years and longer	92	4.30	.82	8.57E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	1.926	.168	-2.955	116	.004	-.57	.19	-.96	-.19
	Equal variances not assumed			-2.590	34.284	.014	-.57	.22	-1.02	-.12

Table 5-33: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents living in their present home for up to 5 years and those living in their present home 6 years and longer

The assumption of equality of variances has not been violated (*Sig.* value is .168 and that is above .05), and the *Sig. (2-tailed)* value (.004) is less than .05, therefore we conclude that there is a statistically significant difference in the mean scores of emotional attachment to Bearsden between residents living in their present home for less and equal 5 years and those living in their homes for 6 years and longer. According to the mean values from the *Group Statistics Table*, people living in the present house for 6 years and longer are more emotionally attached to Bearsden than people living in their present home for up to 5 years. However, when we calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the value we obtain is .04, and that stands for a small effect size for difference between people living in their present home for less and equal 5 years and those living in their present home for 6 years and longer in terms of their emotional attachment to Bearsden.

Question 11: Is there a relationship between the duration of living in Bearsden and emotional attachment to it?

For testing this relationship, duration of living in the present neighbourhood (Bearsden) is taken as categorical independent variable, with 2 categories (up to 10 years of living in Bearsden, and 11 years and longer of living in Bearsden). Emotional attachment to Bearsden is continuous dependent variable. Regarding the types of variables involved statistical test, which will be applied, is the T-test.

Group Statistics

	Duration of living in a present neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Up to 10 years	30	3.53	.97	.18
	11 years and more	88	4.40	.77	8.17E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	2.195	.141	-4.969	116	.000	-.86	.17	-1.21	-.52
	Equal variances not assumed			-4.420	41.928	.000	-.86	.20	-1.26	-.47

Table 5-34: Independent samples T-test for difference in mean scores of emotional attachment Bearsden between residents living in Bearsden for up to 10 years and those living in Bearsden for 11 years and longer

The assumption on equality of variances has not been violated and the *Sig. (2-tailed)* value (.000) is less than .05, therefore we conclude that there is a statistically significant difference in the mean scores of emotional attachment to Bearsden between residents living in this neighbourhood for less and equal 10 years and those living in Bearsden for 11 years and longer. Test indicates that emotional attachment to Bearsden increases with longer staying in this neighbourhood. If we calculate effect size for this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the value of .09 we obtain explains a medium effect size for the influence of resident's duration of living in Bearsden on its emotional attachment to this neighbourhood.

Question 12: Is there a relationship between respondent's type of neighbourhood in the childhood and emotional attachment to Bearsden?

The type of neighbourhood in childhood is a categorical independent variable with two categories (suburban type of neighbourhood, which is the same type as Bearsden, and urban or rural type of neighbourhood as the opposite type of neighbourhoods to Bearsden). Emotional attachment to Bearsden is continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Type of neighbourhood in childhood (2 groups)	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Suburban	63	4.21	.94	.12
	Urban or rural type of neighbourhood	55	4.15	.87	.12

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	.012	.913	.364	116	.716	6.09E-02	.17	-.27	.39
	Equal variances not assumed			.366	115.535	.715	6.09E-02	.17	-.27	.39

Table 5-35: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who lived in the same type of neighbourhood in the childhood and those who lived in opposite types of neighbourhoods in the childhood

Since the *Sig.* value (.913) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.716) is above .05, we conclude that there is not a statistically significant difference in mean scores of emotional attachment to Bearsden between residents who had been living in the similar type of neighbourhood in the childhood as presently, and those residents who had been living in urban or rural types of neighbourhoods when they were children.

Question 13: Is there a relationship between home having a private garden and emotional attachment to Bearsden?

For testing this relationship, home having a private garden is a categorical independent variable of 2 categories and emotional attachment to Bearsden is continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Home having a private garden	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Yes	107	4.21	.84	8.08E-02
	No	11	3.82	1.40	.42

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	8.540	.004	1.394	116	.166	.40	.28	-.17	.96
	Equal variances not assumed			.922	10.744	.377	.40	.43	-.55	1.35

Table 5-36: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who have home with a private garden and residents who don't have a private garden

Although the assumption on equality of variances has been violated since *Sig.* value in Levene's Test is .004 and that is less than .05, we can look for *Sig. (2-tailed)* value under equal variances not assumed. Since this value (.377) is above .05, we conclude that there is not a statistically significant difference in the mean scores of emotional attachment to Bearsden between residents living in homes with a private garden and those living in homes without a private garden.

Question 14: Does the perception on importance of having a private garden influence community sentiment in Bearsden?

For testing this relationship, importance of having a private garden is taken as categorical independent variable with two categories (private garden is less than important and private garden is important or very important), and emotional

attachment to Bearsden is continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Private garden-very important	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Less than agree	10	4.30	.82	.26
	Agree to strongly agree	108	4.17	.91	8.78E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	.118	.732	.446	116	.657	.13	.30	-.46	.73
	Equal variances not assumed			.485	11.149	.637	.13	.27	-.47	.74

Table 5-37: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who think that having a private garden is less than important and those who think that having a private garden is important

Since the *Sig.* value (.732) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.657) is above .05, we conclude that there is <u>not</u> a statistically significant difference in the mean scores of emotional attachment to Bearsden between those respondents who think that having a private garden is not important and those who think that having a private garden is important or very important.

Question 15: Is there a relationship between the next-door neighbours' similarities and community sentiment in Bearsden?

In testing this relationship, categorical independent variable is similarities with the next-door neighbours and it includes two categories (there are similarities with the next-door neighbours and there is a great diversity between the neighbours). Emotional attachment to Bearsden is continuous dependent variable.

Group Statistics

	Similarities with next-door neighbours	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	There are similarities with the next-door neighbours	84	4.18	.84	9.15E-02
	There is a great diversity between the neighbours	34	4.18	1.06	.18

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	5.765	.018	.011	116	.991	2.10E-03	.18	-.36	.37
	Equal variances not assumed			.010	50.600	.992	2.10E-03	.20	-.41	.41

Table 5-38: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who feel there are similarities between the next-door neighbours and those who feel there are no similarities between the next-door neighbours

Since the *Sig.* value (.018) in Levine's Test is less than .05, we have violated the assumption on equal variances. However, we can look under the second line of the table for the *Sig. (2-tailed)* value. Since this value (.992) is above .05, we conclude that there is not a statistically significant difference in the mean scores of emotional attachment to Bearsden between respondents who think there are similarities between next-door neighbours and those who think there are no similarities between next-door neighbours.

Question 16: Is there a relationship between the level of happiness with contacts with next-door neighbours and emotional attachment to Bearsden?

For testing this relationship, happiness with contacts with next-door neighbours is taken as a categorical independent variable with 2 categories (1=I am less than happy with contacts with neighbours, and 2= I am happy or very happy with the contacts with neighbours). Emotional attachment to Bearsden is a continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Happy with contacts with neighbours (2 groups)	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Less than agree	19	4.21	.98	.22
	Agree to strongly agree	99	4.17	.89	8.97E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	.584	.446	.171	116	.865	3.88E-02	.23	-.41	.49
	Equal variances not assumed			.161	24.124	.874	3.88E-02	.24	-.46	.54

Table 5-39: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who are less than happy with contacts with their next-door neighbours and residents who are happy with contacts with next-door neighbours

Since the *Sig.* value (.446) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-*

tailed) value. As this value (.865) is above .05, we conclude that there is not a statistically significant difference in mean scores of emotional attachment to Bearsden between respondents who feel less than happy with contacts with next-door neighbours and respondents who feel happy or very happy with contacts with the next-door neighbours.

Question 17: Is there a relationship between feeling of safety in Bearsden and emotional attachment to it?

Feeling of safety in Bearsden is taken as a categorical independent variable with 2 categories (1= feeling less than safe in Bearsden; 2= feeling safe or very safe in Bearsden), and emotional attachment to Bearsden is continuous dependent variable. For testing the relationship between these two variables, we shall apply the T-test.

Group Statistics

	Feeling very safe in my neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Less than agree	32	3.97	1.06	.19
	Agree to strongly agree	86	4.26	.83	8.94E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	2.097	.150	-1.545	116	.125	-.29	.19	-.65	8.08E-02
	Equal variances not assumed			-1.381	45.779	.174	-.29	.21	-.71	.13

Table 5-40: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who feel less than safe in Bearsden and residents who feel safe or very safe in Bearsden

Since *Sig.* value (.150) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.125) is above .05, we conclude that there is not a statistically significant difference in the mean score of emotional attachment to Bearsden between those respondents who feel less than safe and those who feel safe or very safe in this neighbourhood.

Question 18: Do perceived pollution problems in Bearsden influence community sentiment in this neighbourhood?

Pollution in Bearsden (as perceived by the respondents) is a categorical independent variable with 2 categories and emotional attachment to Bearsden is continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Does Bearsden have pollution problems	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Yes	25	3.88	1.13	.23
	No	93	4.26	.82	8.50E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	2.495	.117	-1.880	116	.063	-.38	.20	-.78	2.03E-02
	Equal variances not assumed			-1.566	31.108	.127	-.38	.24	-.87	.11

Table 5-41: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who feel there are pollution problems in Bearsden and residents who feel there are no pollution problems in Bearsden

Since *Sig.* value (.117) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.063) is above .05, we conclude that there is not a statistically significant difference in the mean emotional attachment to Bearsden between residents who feel Bearsden has pollution problems and those residents who feel Bearsden doesn't have pollution problems.

Question 19: Is there a relationship between resident's satisfaction with the overall facilities provided by Bearsden and community sentiment in it?

For testing this relationship, satisfaction with the overall facilities provided by Bearsden is taken as categorical independent variable with 2 categories, and emotional attachment to Bearsden is continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Very happy with overall provided by Bearsden	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	Less than agree	52	4.06	.98	.14
	Agree to strongly agree	66	4.27	.83	.10

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Berasden	Equal variances assumed	1.021	.314	-1.289	116	.200	-.22	.17	-.55	.12
	Equal variances not assumed			-1.264	100.223	.209	-.22	.17	-.55	.12

Table 5-42: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who are less than happy with the overall facilities provided by Bearsden and residents who are happy or very happy with the overall facilities provided by Bearsden

Since *Sig.* value (.314) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.200) is above .05, we conclude that there is not a statistically significant difference in the mean scores of emotional attachment to Bearsden between respondents who are less than satisfied with overall facilities provided by this neighbourhood and respondents who are satisfied or very satisfied with overall facilities provided by this neighbourhood.

Question 20: Is there a relationship between the respondent's perception on lack of certain facilities in Bearsden and emotional attachment to Bearsden?

For testing this relationship, lack of certain facilities in the neighbourhood is taken as a categorical independent variable with two categories: no facilities are lacking in Bearsden, and certain facilities in Bearsden are lacking. Emotional attachment to Bearsden is continuous dependent variable. For testing the relationship among variables, we shall use the T-test because of the types of variables involved in the statistical testing.

Group Statistics

	Lack of facilities in the neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Emotional attachment to Bearsden	No facilities are lacking in Bearsden	53	4.42	.72	9.87E-02
	There is a lack of certain facilities	65	3.98	.99	.12

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Emotional attachment to Bearsden	Equal variances assumed	2.763	.099	2.643	116	.009	.43	.16	.11	.75
	Equal variances not assumed			2.729	114.517	.007	.43	.16	.12	.74

Table 5-43: Independent samples T-test for difference in mean scores of emotional attachment to Bearsden between residents who think that there is a lack of certain facilities in Bearsden and those who think that no facilities are lacking in Bearsden

The assumption of equality of variances has not been violated (*Sig.* value in Levine's Test is .099 and that is above .05) and the *Sig. (2-tailed)* value (.009) is less than .05, therefore we conclude that there is a statistically significant difference in the mean scores of emotional attachment to Bearsden between residents who feel that no facilities are lacking and those residents who feel there is a lack of certain facilities in Bearsden. According to the mean values from the *Group Statistics Table*, we can see that residents who think that no facilities are lacking in Bearsden are more emotionally attached to it in comparison to residents who think that there are some

facilities lacking in Bearsden. This was not found to be a statistically significant relationship in the West End. However, when we calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the value we obtain is .03, and that stands for a small effect size for difference between people who think that there is a lack of certain facilities in Bearsden and those who think there are no facilities lacking in Bearsden, in terms of their emotional attachment to this neighbourhood.

From the statistical analyses on relationships between independent variables of environmental context and community sentiment (emotional attachment) in Bearsden, it can be observed that only 3 out of 12 independent variables showed a statistically significant relationship with the community sentiment in Bearsden. Those three variables are: duration of living in a present home, duration of living in Bearsden, and perception on lack of certain facilities in Bearsden.

In order to have an overall view of relationships between independent variables of environmental context in Bearsden, which have already shown to be in relation with the community sentiment in this neighbourhood, we look at the Pearson correlation table.

Correlations

		Emotional attachment to Bearsden	Duration of living in a present home (2 groups)	Duration of living in a present neighbourhood (2 categories)	Lack of facilities in the neighbourhood
Emotional attachment to Bearsden	Pearson Correlation	1.000	.265**	.419**	-.238**
	Sig. (2-tailed)	.	.004	.000	.009
	N	118	118	118	118
Duration of living in a present home (2 groups)	Pearson Correlation	.265**	1.000	.629**	-.233*
	Sig. (2-tailed)	.004	.	.000	.011
	N	118	118	118	118
Duration of living in a present neighbourhood (2 categories)	Pearson Correlation	.419**	.629**	1.000	-.136
	Sig. (2-tailed)	.000	.000	.	.142
	N	118	118	118	118
Lack of facilities in the neighbourhood	Pearson Correlation	-.238**	-.233*	-.136	1.000
	Sig. (2-tailed)	.009	.011	.142	.
	N	118	118	118	118

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5-44: Pearson Correlation between variables of environmental context that are related to emotional attachment to Bearsden

If we follow the guidelines given by Cohen (1988) for interpreting the strength of correlation, we can observe that there is a medium positive correlation between emotional attachment to Bearsden and duration of living in it (r=.42) and also a medium positive correlation between emotional attachment to Bearsden and duration of living in a present home (r=.27). However, it is important to note that between these two independent variables there is a large correlation (r=.63).

5.1.2 Community evaluation

This component of attachment to the residential neighbourhood refers to resident's satisfaction with the local community in meeting its individual needs (Adams, 1992a). Unlike community sentiment, which relates to residents' emotions towards their residential neighbourhood, *community evaluation*, in contrast, refers to rational assessment of the relative advantages or disadvantages of living in a particular neighbourhood (Adams, 1992a; Hunter, 1974, 1978; Michelson 1977; Miller et al. 1980). Distinction between these two types of attachment is primarily made because people's attachment to the residential neighbourhood is formed involving both their emotions and rational perspectives.

5.1.2.1 Neighbourhood Satisfaction Scale

The empirical research involving community evaluation was based on development of **Neighbourhood Satisfaction Scale (NSS)** for each of the two neighbourhoods as a measure of their residents' community evaluation (total neighbourhood satisfaction). NSS consists of 7 items, each one of them ranked from 1 to 7 (1=strongly disagree; 2=disagree; 3=mildly disagree; 4=neutral/undecided; 5=mildly agree; 6=agree; 7=strongly agree). The 7 items of scale are: *1) like of convenient location; 2) like of 'village feel' (friendly people); 3) like of facilities, amenities and house values; 4) like of quietness and safety; 5) like of good neighbours; 6) like of public transport system and; 7) like of environmental quality and level of cleanliness*. When forming a scale like NSS, the most important fact is its *reliability*. There are many aspects of scale's reliability, but one of the main issues reliability concerns is the scale's internal consistency, or the degree to which the items that make up the scale 'hang together' (Pallant, 2001). All the items have to measure the same underlying construct or otherwise the scale we developed is not reliable. The most common measure of internal consistency of scale is *Cronbach alpha coefficient*. This coefficient should be above .7 for considering a scale to be reliable with our sample. In the case of NSS, for either of the two neighbourhoods, Cronbach's alpha was above this critical value: for the West End (.82), and for Bearsden (.79). Following is a thorough report on checking up of NSS reliability for both the West End and Bearsden.

THE WEST END: Reliability of NSS (Neighbourhood Satisfaction Scale)

Items of the scale: LIK1 (like of convenient location); LIK2 (like of a 'village feel', friendly people); LIK3 (like of facilities, amenities, and house values); LIK4 (like of quietness and safety); LIK5 (like of good neighbours); LIK6 (like of public transport system in the West End); LIK7 (like of environmental quality and level of cleanliness in the West End)

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

		Mean	Std Dev	Cases
1.	LIK1	4.9219	.9358	128.0
2.	LIK2	4.9453	.7767	128.0
3.	LIK3	4.9375	.8488	128.0
4.	LIK4	4.6016	1.0298	128.0
5.	LIK5	4.7891	.8753	128.0
6.	LIK6	4.7344	1.1258	128.0
7.	LIK7	4.9219	1.0319	128.0

Statistics for	Mean	Variance	Std Dev	N of Variables
SCALE	33.8516	21.3242	4.6178	7

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
LIK1	28.9297	14.6171	.8149	.7499
LIK2	28.9063	17.4242	.5084	.8037
LIK3	28.9141	17.0398	.5086	.8030
LIK4	29.2500	15.9055	.5306	.8003
LIK5	29.0625	17.3031	.4470	.8122
LIK6	29.1172	16.8759	.3439	.8380
LIK7	28.9297	13.8139	.8403	.7401

Reliability Coefficients

N of Cases = 128.0 N of Items = 7

Alpha = .8188

Table 5-45: Reliability analysis of NSS for the West End

BEARSDEN: Reliability of NSS (Neighbourhood Satisfaction Scale)

Items of the scale: LIK1 (like of convenient location); LIK2 (like of a 'village feel', friendly people); LIK3 (like of facilities, amenities, and house values); LIK4 (like of quietness and safety); LIK5 (like of good neighbours); LIK6 (like of public transport system in Bearsden); LIK7 (like of environmental quality and level of cleanliness on Bearsden)

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

		Mean	Std Dev	Cases
1.	LIK1	4.8051	1.0065	118.0
2.	LIK2	4.8390	1.0040	118.0
3.	LIK3	4.4746	.9031	118.0
4.	LIK4	4.7627	.7809	118.0
5.	LIK5	5.0254	.7675	118.0
6.	LIK6	3.5763	1.1724	118.0
7.	LIK7	4.6441	.9201	118.0

Statistics for	Mean	Variance	Std Dev	N of Variables
SCALE	32.1271	19.3427	4.3980	7

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
LIK1	27.3220	12.5963	.8025	.7005
LIK2	27.2881	14.9077	.4420	.7775
LIK3	27.6525	15.0492	.4964	.7661
LIK4	27.3644	15.9943	.4384	.7763
LIK5	27.1017	16.2118	.4112	.7805
LIK6	28.5508	14.6940	.3643	.8013
LIK7	27.4831	13.5168	.7360	.7197

Reliability Coefficients

N of Cases = 118.0 N of Items = 7

Alpha = .7893

Table 5-46: Reliability analysis of NSS for Bearsden

After developing the NSS, it is important to find out which of the independent variables correlate with community evaluation (total neighbourhood satisfaction), which is measured by the NSS developed for each neighbourhood. The aim of research was also to try to determine how well a set of certain independent variables is able to predict the community evaluation (total neighbourhood satisfaction) of the residential neighbourhood.

Presuming the difference between the West End of Glasgow (urban neighbourhood) and Bearsden (suburban neighbourhood), community evaluation was analysed independently for each of the case study neighbourhoods. The difference in community evaluation between the two neighbourhoods can be statistically analysed by applying the T-test. This statistical test is used because there is one categorical independent variable: type of neighbourhood, with two categories (West End-urban neighbourhood, and Bearsden–suburban neighbourhood) and one continuous dependent variable: community evaluation (total neighbourhood satisfaction) measured by NSS, which can take values from 7 (because this is the number of variables forming the scale) to 49 (since each variable can also range from 1 to 7, where 1 is strongly disagree and 7 is strongly agree).

Group Statistics

	Neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Total neighbourhood satisfaction	Urban, West End	128	33.85	4.62	.41
	Suburban, Bearsden	118	32.13	4.40	.40

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total neighbourhood satisfaction	Equal variances assumed	.001	.969	2.994	244	.003	1.72	.58	.59	2.86
	Equal variances not assumed			3.000	243.736	.003	1.72	.57	.59	2.86

Table 5-47: Independent samples T-test for difference in mean scores of total neighbourhood satisfaction between the West End and Bearsden

Since *Sig.* value (.969) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for the *Sig. (2-tailed)* value. As this value (.003) is less than .05 that means there is a statistically significant difference between the West End and Bearsden in the mean scores of total neighbourhood satisfaction. According to the mean values from the *Group Statistics Table*, respondents from the West End have a higher mean total neighbourhood

satisfaction than respondents in Bearsden. However, the magnitude of differences between our two neighbourhoods in terms of community evaluation of the residential neighbourhood can be calculated by the formula for eta squared (see Equation 5-1). According to guidelines for interpreting eta square values (Cohen, 1988), our result of .03 explains that there is a small effect size for difference between the West End and Bearsden in terms of their residents' community evaluation (total neighbourhood satisfaction) of the residential neighbourhood.

The next step of analyses regarding community evaluation concerns testing the hypotheses on relationship among certain independent variables and community evaluation. Those independent variables are identified from the literature review, and they can be summarised to what Adams (1992a) addresses as 'ecological conditions' and 'perception on those conditions'. In this case, ecological conditions include 2 variables: duration of living in a present home (less and equal 5 years and 6 years and more), which is a measure of stability of the local area, and home ownership. Perception of ecological conditions is described by the following variables: perception on similarity between neighbours; happiness with contacts with neighbours; perception on neighbourhood safety; satisfaction with public transport in the neighbourhood; satisfaction with the overall facilities, and perception on lack of certain facilities in the residential neighbourhood.

5.1.2.2 The West End – urban neighbourhood

Statistical tests for the relationships between the variables of ecological conditions as the independent ones and community evaluation (total neighbourhood satisfaction) in the West End as the dependent variable

Question 1: Is there a relationship between the duration of staying in the present home and community evaluation (total neighbourhood satisfaction) in the West End?

For testing this relationship, we will take the duration of staying in the present home (2 categories: less and equal 5 years, and 6 years and longer) as a categorical independent variable. Total neighbourhood satisfaction (measured by NSS for the

West End) is continuous dependent variable. Statistical test, which we shall apply, is the T-test.

Group Statistics

	Duration of living in a present home (2	N	Mean	Std. Deviation	Std. Error Mean
Total neighbourhood satisfaction, the West End	Less or equal 5 years	76	33.45	4.43	.51
	6 years and longer	52	34.44	4.86	.67

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total neighbourhood satisfaction, the West End	Equal variances assumed	.162	.688	-1.199	126	.233	-.99	.83	-2.64	.65
	Equal variances not assumed			-1.179	102.993	.241	-.99	.84	-2.67	.68

Table 5-48: Independent samples T-test for difference in mean scores of total neighbourhood satisfaction in the West End between residents living in their present home for less and equal 5 years and residents living in their present home for 6 years and longer

Since *Sig.* value (.688) in Levine's Test is above .05, we have not violated the assumption on equality of variances, and we can look under the first line for the *Sig. (2-tailed)* value. As this value (.233) is above .05, we conclude that there is not a statistically significant difference in mean scores of total neighbourhood satisfaction in the West End between residents who have been living in their present home for less or equal 5 years and those who have been living in their present home for 6 years and longer. In contrast to other researchers' findings that duration of living in the neighbourhood relates to community evaluation of it, the results in the West End reject that hypothesis.

Question 2: Do owner-occupiers of homes in the West End have higher community evaluation than non owner-occupiers?

In this relationship, ownership of home (2 categories) is taken as categorical independent variable, while total neighbourhood satisfaction in the West End is continuous dependent variable. Statistical test, which we shall apply, is the T-test.

Group Statistics

	Ownership of home (2 categories)	N	Mean	Std. Deviation	Std. Error Mean
Total neighbourhood satisfaction, the West End	Not owner occupied	22	31.09	4.73	1.01
	Owner occupied	106	34.42	4.40	.43

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total neighbourhood satisfaction, the West End	Equal variances assumed	.118	.731	-3.191	126	.002	-3.33	1.04	-5.40	-1.27
	Equal variances not assumed			-3.043	29.046	.005	-3.33	1.10	-5.57	-1.09

Table 5-49: Independent samples T-test for difference in mean scores of total neighbourhood satisfaction in the West End between owner-occupiers and non owner-occupiers

Since the *Sig.* value (.731) in Levine's Test is above .05, we have not violated the assumption on equality of variances. After that, if we look for *Sig. (2-tailed)* value, as this value (.002) is less than .05, we conclude that there is a statistically significant difference in mean scores of total neighbourhood satisfaction in the West End between owner-occupiers and non owner-occupiers. According to the mean values from the *Group Statistics Table*, people living in owner occupied homes have higher total neighbourhood satisfaction with the West End than people living in non-owner occupied homes. However, when we calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the value we obtain is .04, and that stands for a small effect size for difference between people living in owner occupied and people living in non-owner occupied homes in terms of their total neighbourhood satisfaction with the West End.

Statistical tests for the relationships between the variables of perception of ecological conditions as the independent ones and community evaluation (total neighbourhood satisfaction) in the West End as the dependent variable

Question 3: Is there a relationship between the perception on next-door neighbours' similarities and total neighbourhood satisfaction in the West End?

In order to test this hypothesis, we are taking in account two variables: similarities between next-door neighbours, as categorical independent variable with 2 categories, and total neighbourhood satisfaction in the West End, as a continuous dependent variable measured by NSS. Statistical test, which is applied, is the T-test.

Group Statistics

	Similarities with next-door neighbours	N	Mean	Std. Deviation	Std. Error Mean
Total neighbourhood satisfaction, the West End	There is a great diversity between the neighbours	54	33.06	4.49	.61
	There are similarities with the next-door neighbours	74	34.43	4.65	.54

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total neighbourhood satisfaction, the West End	Equal variances assumed	.192	.662	-1.678	126	.096	-1.38	.82	-3.00	.25
	Equal variances not assumed			-1.687	116.604	.094	-1.38	.82	-2.99	.24

Table 5-50: Independent samples T-test for difference in mean scores of total neighbourhood satisfaction in the West End between residents who feel there are similarities between next-door neighbours and those who feel there is a great diversity between neighbours

Since the *Sig.* value (.662) in Levine's test is above .05, we have not violated the assumption on equality of variances and we are looking under the first line for the *Sig. (2-tailed)* value. As this value (.096) is above .05, we conclude that there is not a statistically significant difference in mean scores of total neighbourhood satisfaction in the West End between residents who feel there are similarities between them and their next-door neighbours and residents who feel there is a great diversity between the next-door neighbours.

Question 4: Is there a relationship between the happiness with contacts with the next-door neighbours and total neighbourhood satisfaction in the West End?

For testing this relationship, we take happiness with contacts with the next-door neighbours as a categorical independent variable with 4 categories corresponding to different levels of happiness with contacts with neighbours (1=disagree; 2=neutral/undecided; 3=agree; 4=strongly agree). Total neighbourhood satisfaction in the West End is continuous dependent variable. Statistical test, which is applied, is One-way ANOVA because the categorical independent variable includes more than 3 categories and dependent variable is of continuous type.

Descriptives

Total neighbourhood satisfaction, the West End

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Disagree	6	27.33	6.19	2.53	20.84	33.83	19	34
Neutral/ undecided	33	31.82	3.50	.61	30.58	33.06	26	40
Agree	65	34.43	4.12	.51	33.41	35.45	21	42
Strongly agree	24	36.71	4.32	.88	34.88	38.53	28	46
Total	128	33.85	4.62	.41	33.04	34.66	19	46

Test of Homogeneity of Variances

Total neighbourhood satisfaction, the West End

Levene Statistic	df1	df2	Sig.
1.569	3	124	.200

Since the *Sig.* value (.20) in Levine's Test is above .05, we have not violated the assumption on homogeneity of variance.

ANOVA

Total neighbourhood satisfaction, the West End

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	609.040	3	203.013	11.992	.000
Within Groups	2099.139	124	16.929		
Total	2708.180	127			

In the ANOVA table we are interested in *Sig.* value. Since this value (.00) is less than .05, we conclude that there is a statistically significant difference in mean scores of total neighbourhood satisfaction between respondents of different levels of happiness with contacts with neighbours.

Multiple Comparisons

Dependent Variable: Total neighbourhood satisfaction, the West End

Tukey HSD

(I) Happy with contacts with neighbours	(J) Happy with contacts with neighbours	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Disagree	Neutral/ undecided	-4.48	1.83	.067	-9.18	.21
	Agree	-7.10*	1.76	.000	-11.61	-2.59
	Strongly agree	-9.38*	1.88	.000	-14.20	-4.55
Neutral/ undecided	Disagree	4.48	1.83	.067	-.21	9.18
	Agree	-2.61*	.88	.016	-4.87	-.35
	Strongly agree	-4.89*	1.10	.000	-7.73	-2.05
Agree	Disagree	7.10*	1.76	.000	2.59	11.61
	Neutral/ undecided	2.61*	.88	.016	.35	4.87
	Strongly agree	-2.28	.98	.094	-4.80	.25
Strongly agree	Disagree	9.38*	1.88	.000	4.55	14.20
	Neutral/ undecided	4.89*	1.10	.000	2.05	7.73
	Agree	2.28	.98	.094	-.25	4.80

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

Total neighbourhood satisfaction, the West End

Tukey HSD[a,b]

Happy with contacts with neighbours	N	Subset for alpha = .05		
		1	2	3
Disagree	6	27.33		
Neutral/ undecided	33		31.82	
Agree	65		34.43	34.43
Strongly agree	24			36.71
Sig.		1.000	.282	.406

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 15.747.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

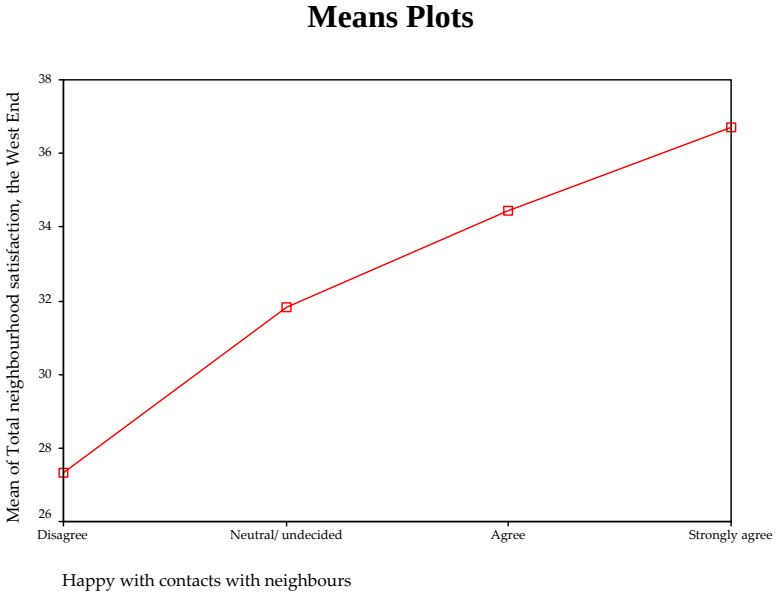


Figure 5-3: Means Plots diagram for the relationship between happiness with contacts with neighbours and total neighbourhood satisfaction in the West End

From the results of this analysis we can conclude that respondents who are happier with contacts with neighbours have higher total neighbourhood satisfaction scores for the West End. It is possible do determine the effect size for this result by calculating eta squared (see Equation 5-2). Since calculated eta squared in this case is .22 and that is over .14, there is a large effect size for this result, which says that total neighbourhood satisfaction in the West End largely depends on happiness with contacts with the next-door neighbours.

Question 5: Does feeling of safety in the West End relate to community evaluation of the West End?

For testing this hypothesis, we include feeling of safety in the West End as a categorical independent variable (represented by categories ranked 1 to 5, from strongly disagree to strongly agree with feeling very safe in the West End), and total neighbourhood satisfaction in the West End as a continuous dependent variable. Regarding the types of variables involved in testing the relationship statistical test, which is applied, is One-way ANOVA.

Descriptives

Total neighbourhood satisfaction, the West End

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Strongly disagree	2	20.00	1.41	1.00	7.29	32.71	19	21
Disagree	11	28.91	2.43	.73	27.28	30.54	25	33
Neutral/ undecided	29	32.17	3.33	.62	30.91	33.44	26	39
Agree	66	34.74	4.04	.50	33.75	35.73	22	42
Strongly agree	20	37.45	3.50	.78	35.81	39.09	29	46
Total	128	33.85	4.62	.41	33.04	34.66	19	46

Test of Homogeneity of Variances

Total neighbourhood satisfaction, the West End

Levene Statistic	df1	df2	Sig.
.980	4	123	.421

Since the *Sig.* value (.421) in Levine's Test is above .05, we have not violated the assumption on equality of variances.

ANOVA

Total neighbourhood satisfaction, the West End

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1045.561	4	261.390	19.338	.000
Within Groups	1662.618	123	13.517		
Total	2708.180	127			

In ANOVA table, we are interested in *Sig.* value. As this value (.00) is less than .05, we conclude that there is a statistically significant difference in mean scores of total neighbourhood satisfaction in the West End between residents of 5 levels of feeling safe in the West End.

Multiple Comparisons

Dependent Variable: Total neighbourhood satisfaction, the West End

Tukey HSD

(I) Feeling very safe in my neighbourhood	(J) Feeling very safe in my neighbourhood	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Strongly disagree	Disagree	-8.91*	2.83	.014	-16.62	-1.20
	Neutral/ undecided	-12.17*	2.69	.000	-19.50	-4.84
	Agree	-14.74*	2.64	.000	-21.94	-7.54
	Strongly agree	-17.45*	2.73	.000	-24.89	-10.01
Disagree	Strongly disagree	8.91*	2.83	.014	1.20	16.62
	Neutral/ undecided	-3.26	1.30	.089	-6.81	.29
	Agree	-5.83*	1.20	.000	-9.10	-2.57
	Strongly agree	-8.54*	1.38	.000	-12.31	-4.78
Neutral/ undecided	Strongly disagree	12.17*	2.69	.000	4.84	19.50
	Disagree	3.26	1.30	.089	-.29	6.81
	Agree	-2.57*	.82	.015	-4.80	-.34
	Strongly agree	-5.28*	1.07	.000	-8.19	-2.36
Agree	Strongly disagree	14.74*	2.64	.000	7.54	21.94
	Disagree	5.83*	1.20	.000	2.57	9.10
	Neutral/ undecided	2.57*	.82	.015	.34	4.80
	Strongly agree	-2.71*	.94	.032	-5.27	-.15
Strongly agree	Strongly disagree	17.45*	2.73	.000	10.01	24.89
	Disagree	8.54*	1.38	.000	4.78	12.31
	Neutral/ undecided	5.28*	1.07	.000	2.36	8.19
	Agree	2.71*	.94	.032	.15	5.27

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

Total neighbourhood satisfaction, the West End

Tukey HSD[a,b]

Feeling very safe in my neighbourhood	N	Subset for alpha = .05			
		1	2	3	4
Strongly disagree	2	20.00			
Disagree	11		28.91		
Neutral/ undecided	29		32.17	32.17	
Agree	66			34.74	34.74
Strongly agree	20				37.45
Sig.		1.000	.441	.672	.627

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 7.241.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Means Plots

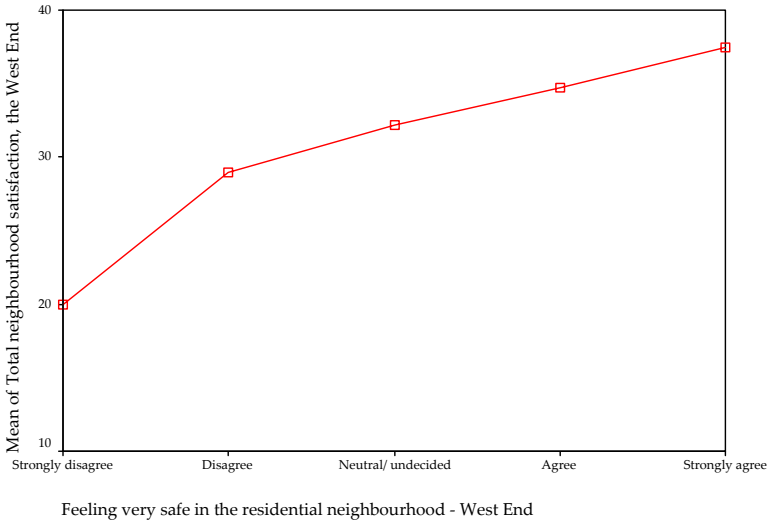


Figure 5-4: Means Plots diagram for the relationship between feeling of safety in the West End and total neighbourhood satisfaction in the West End

From the results of this analysis we can conclude that respondents who feel safer living in the West End achieve higher total neighbourhood satisfaction scores. It is possible do determine the effect size for this result by calculating eta squared (see Equation 5-2). Since calculated eta squared for this type of relationship is .39, we conclude that there is a large effect size for this result, meaning there is a great influence of feeling of safety in the West End on the total neighbourhood satisfaction with the West End.

Question 6: Is there a relationship between the respondent's satisfaction with the public transport system organisation in the West End and community evaluation in the West End?

For testing this relationship, we are using satisfaction with the public transport system organisation in the West End as a categorical independent variable (with 5 categories) and total neighbourhood satisfaction in the West End as a continuous

dependent variable. Regarding the nature of variables we apply One-way ANOVA statistical test.

Descriptives

Total neighbourhood satisfaction, the West End

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Strongly disagree	4	30.50	5.07	2.53	22.44	38.56	27	38
Disagree	18	30.06	3.92	.92	28.11	32.00	22	38
Neutral/ undecided	25	33.96	2.86	.57	32.78	35.14	28	38
Agree	65	34.25	4.85	.60	33.04	35.45	19	46
Strongly agree	16	37.19	3.41	.85	35.37	39.00	33	43
Total	128	33.85	4.62	.41	33.04	34.66	19	46

Test of Homogeneity of Variances

Total neighbourhood satisfaction, the West End

Levene Statistic	df1	df2	Sig.
1.224	4	123	.304

Since the *Sig.* value (.304) in Levine's test is above .05, we have not violated the assumption on equality of variances.

ANOVA

Total neighbourhood satisfaction, the West End

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	492.776	4	123.194	6.840	.000
Within Groups	2215.403	123	18.011		
Total	2708.180	127			

In the ANOVA table, we are interested in *Sig.* value. As this value (.00) is less than .05, we conclude that there is a statistically significant difference in mean scores of total neighbourhood satisfaction in the West End between residents of different level of satisfaction with the public transport in the West End.

Multiple Comparisons

Dependent Variable: Total neighbourhood satisfaction, the West End

Tukey HSD

(I) Very well organised public transport in the neighbourhood	(J) Very well organised public transport in the neighbourhood	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Strongly disagree	Disagree	.44	2.35	1.000	-5.95	6.84
	Neutral/ undecided	-3.46	2.29	.553	-9.69	2.77
	Agree	-3.75	2.19	.426	-9.71	2.22
	Strongly agree	-6.69*	2.37	.039	-13.16	-.22
Disagree	Strongly disagree	-.44	2.35	1.000	-6.84	5.95
	Neutral/ undecided	-3.90*	1.31	.024	-7.48	-.33
	Agree	-4.19*	1.13	.002	-7.27	-1.11
	Strongly agree	-7.13*	1.46	.000	-11.11	-3.15
Neutral/ undecided	Strongly disagree	3.46	2.29	.553	-2.77	9.69
	Disagree	3.90*	1.31	.024	.33	7.48
	Agree	-.29	1.00	.999	-3.01	2.44
	Strongly agree	-3.23	1.36	.122	-6.93	.48
Agree	Strongly disagree	3.75	2.19	.426	-2.22	9.71
	Disagree	4.19*	1.13	.002	1.11	7.27
	Neutral/ undecided	.29	1.00	.999	-2.44	3.01
	Strongly agree	-2.94	1.18	.094	-6.17	.29
Strongly agree	Strongly disagree	6.69*	2.37	.039	.22	13.16
	Disagree	7.13*	1.46	.000	3.15	11.11
	Neutral/ undecided	3.23	1.36	.122	-.48	6.93
	Agree	2.94	1.18	.094	-.29	6.17

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

Total neighbourhood satisfaction, the West End

Tukey HSD[a,b]

Very well organised public transport in	N	Subset for alpha = .05	
		1	2
Disagree	18	30.06	
Strongly disagree	4	30.50	
Neutral/ undecided	25	33.96	33.96
Agree	65	34.25	34.25
Strongly agree	16		37.19
Sig.		.115	.346

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 11.808.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

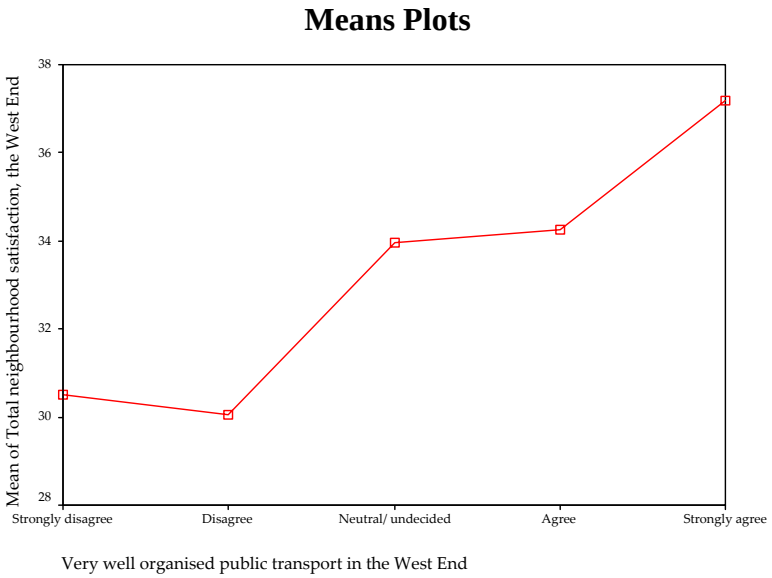


Figure 5-5: Means Plots diagram for the relationship between satisfaction with the public transport in the West End and total neighbourhood satisfaction in the West End

From the results of this analysis we can conclude that respondents who are more satisfied with the public transport system organisation in the West End achieve higher total neighbourhood satisfaction scores. It is possible do determine the effect size for this result by calculating eta squared (see Equation 5-2). Since calculated eta squared for this type of relationship is .18, we conclude that there is a large effect size for this result, which shows that, the more people are satisfied with the public transport system organisation in the West End; the higher is their community evaluation (total neighbourhood satisfaction) of this neighbourhood.

Question 7: Does level of satisfaction with overall facilities provided by the West End influence total neighbourhood satisfaction in the West End?

For testing this hypothesis, we involve satisfaction with overall facilities provided by the West End as categorical independent variable (5 categories) and total

neighbourhood satisfaction in the West End as a continuous dependent variable. Statistical method, which is applied, is One-way ANOVA.

Descriptives

Total neighbourhood satisfaction, the West End

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Strongly disagree	3	29.33	6.66	3.84	12.79	45.87	22	35
Disagree	9	29.56	5.15	1.72	25.60	33.51	21	38
Neutral/ undecided	10	29.60	3.10	.98	27.38	31.82	27	34
Agree	84	34.15	4.00	.44	33.29	35.02	19	46
Strongly agree	22	37.00	4.15	.89	35.16	38.84	28	43
Total	128	33.85	4.62	.41	33.04	34.66	19	46

Test of Homogeneity of Variances

Total neighbourhood satisfaction, the West End

Levene Statistic	df1	df2	Sig.
.704	4	123	.591

Since Sig. value (.591) in Levine's Test is above .05, we have not violated the assumption on equality of variances.

ANOVA

Total neighbourhood satisfaction, the West End

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	633.903	4	158.476	9.397	.000
Within Groups	2074.277	123	16.864		
Total	2708.180	127			

From ANOVA table we are mainly interested in *Sig.* value. As this value (.00) is less than .05, we conclude that there is a statistically significant difference in mean scores of total neighbourhood satisfaction in the West End between respondents of 5 levels of satisfaction with the overall facilities provided by the West End.

Multiple Comparisons

Dependent Variable: Total neighbourhood satisfaction, the West End
Tukey HSD

(I) Very happy with overall facilities provided by neighbourhood	(J) Very happy with overall facilities provided by neighbourhood	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Strongly disagree	Disagree	-.22	2.74	1.000	-7.69	7.25
	Neutral/ undecided	-.27	2.70	1.000	-7.64	7.11
	Agree	-4.82	2.41	.267	-11.40	1.76
	Strongly agree	-7.67*	2.53	.020	-14.56	-.77
Disagree	Strongly disagree	.22	2.74	1.000	-7.25	7.69
	Neutral/ undecided	-4.44E-02	1.89	1.000	-5.19	5.10
	Agree	-4.60*	1.44	.012	-8.53	-.67
	Strongly agree	-7.44*	1.62	.000	-11.88	-3.01
Neutral/ undecided	Strongly disagree	.27	2.70	1.000	-7.11	7.64
	Disagree	4.44E-02	1.89	1.000	-5.10	5.19
	Agree	-4.55*	1.37	.008	-8.30	-.81
	Strongly agree	-7.40*	1.57	.000	-11.67	-3.13
Agree	Strongly disagree	4.82	2.41	.267	-1.76	11.40
	Disagree	4.60*	1.44	.012	.67	8.53
	Neutral/ undecided	4.55*	1.37	.008	.81	8.30
	Strongly agree	-2.85*	.98	.031	-5.53	-.16
Strongly agree	Strongly disagree	7.67*	2.53	.020	.77	14.56
	Disagree	7.44*	1.62	.000	3.01	11.88
	Neutral/ undecided	7.40*	1.57	.000	3.13	11.67
	Agree	2.85*	.98	.031	.16	5.53

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

Total neighbourhood satisfaction, the West End

Tukey HSD[a,b]

Very happy with overall facilities provided by	N	Subset for alpha = .05	
		1	2
Strongly disagree	3	29.33	
Disagree	9	29.56	
Neutral/ undecided	10	29.60	
Agree	84	34.15	34.15
Strongly agree	22		37.00
Sig.		.117	.620

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 8.308.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Means Plots

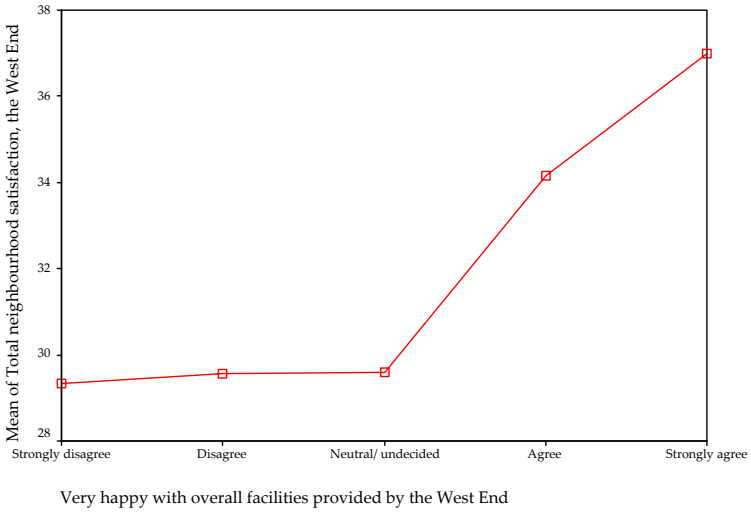


Figure 5-6: Means Plots diagram for the relationship between satisfaction with overall facilities provided by the West End and total neighbourhood satisfaction in the West End

From the results of this analysis we can conclude that respondents who are more satisfied with the overall facilities in the West End achieve higher total neighbourhood satisfaction scores. It is possible do determine the effect size for this result by calculating eta squared (see Equation 5-2). Since calculated eta squared for this type of relationship is .23, we conclude that there is a large effect size for this result, meaning there is a large influence of respondent's satisfaction with the overall facilities provided by the West End on total neighbourhood satisfaction with the West End.

Question 8: Is there a relationship between the respondent's perception of the lack of certain facilities in the West End and total neighbourhood satisfaction with the West End?

For testing this relationship, we include the lack of certain facilities in the West End as a categorical independent variable with 2 categories, and total neighbourhood satisfaction with the West End as a continuous dependent variable. Statistical test, which is applied, is the T-test.

Group Statistics

	Lack of facilities in the neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Total neighbourhood satisfaction, the West End	No facilities are lacking in the neighbourhood	74	35.01	3.92	.46
	There is a lack of certain facilities	54	32.26	5.05	.69

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total neighbourhood satisfaction, the West End	Equal variances assumed	5.524	.020	3.475	126	.001	2.75	.79	1.19	4.32
	Equal variances not assumed			3.341	96.227	.001	2.75	.82	1.12	4.39

Table 5-51: Independent samples T-test for difference in mean scores of total neighbourhood satisfaction in the West End between respondents who feel there are no facilities that are lacking in the West End and those who feel there is a lack of certain facilities in the West End

Since the *Sig.* value (.02) in Levine's Test is less than .05, we have violated the assumption on equality of variances. However, T-test allows us to analyse results even if equal variances are not assumed, so we can look under the second line of Independent Samples Test Table for *Sig. (2-tailed)* value. As this value (.001) is less than .05, we conclude that there is a statistically significant difference in mean scores of total neighbourhood satisfaction in the West End between residents who think there are no facilities lacking in the West End and those who think that there is a lack of certain facilities in the West End. According to the mean values from the *Group Statistics Table*, residents who think that no facilities are lacking in the West End achieve higher mean scores of total neighbourhood satisfaction in the West End than residents who think that there is a lack of certain facilities in the West End.

From the statistical analyses on relationships between independent variables of respondents' perception of ecological conditions and community evaluation (total neighbourhood satisfaction) in the West End, it can be noticed that 5 out of 6 independent variables showed a statistically significant relationship with the

community evaluation in the West End. Among all variables on perception of ecological conditions that were analysed, it was only the perception on next-door neighbours similarities that didn't show a statistically significant relationship with community evaluation in the West End.

Standard multiple regression for predicting total neighbourhood satisfaction in the West End

After performing statistical tests on relationships between independent variables of ecological conditions and perception of those conditions on one side and community evaluation (total neighbourhood satisfaction) in the West End on the other side as a dependent variable, we would like to know if it is possible to predict a particular outcome (total neighbourhood satisfaction in the West End) by using a set of independent variables. The statistical test which is used for this purpose is Standard multiple regression. It enables us not only to predict total neighbourhood satisfaction in the West End by using a set of variables (in this case 6 variables that showed statistically significant relationships with total neighbourhood satisfaction in the West End), but also to see which one of those six variables is the best predictor of total neighbourhood satisfaction in the West End.

Correlations

		Total neighbourhood satisfaction, the West End	Ownership of home (2 categories)	Happy with contacts with neighbours	Feeling very safe in my neighbourhood	Very well organised public transport in the neighbourhood	Very happy with overall facilities provided by neighbourhood	Lack of facilities in the neighbourhood
Pearson Correlation	Total neighbourhood satisfaction, the West End	1.000	.273	.467	.600	.393	.457	-.296
	Ownership of home (2 categories)	.273	1.000	.330	.272	-.185	-.014	-.114
	Happy with contacts with neighbours	.467	.330	1.000	.237	.037	.077	-.084
	Feeling very safe in my neighbourhood	.600	.272	.237	1.000	.086	.214	-.239
	Very well organised public transport in the neighbourhood	.393	-.185	.037	.086	1.000	.245	-.241
	Very happy with overall facilities provided by neighbourhood	.457	-.014	.077	.214	.245	1.000	-.365
	Lack of facilities in the neighbourhood	-.296	-.114	-.084	-.239	-.241	-.365	1.000
Sig. (1-tailed)	Total neighbourhood satisfaction, the West End	.	.001	.000	.000	.000	.000	.000
	Ownership of home (2 categories)	.001	.	.000	.001	.018	.438	.100
	Happy with contacts with neighbours	.000	.000	.	.003	.338	.194	.172
	Feeling very safe in my neighbourhood	.000	.001	.003	.	.169	.008	.003
	Very well organised public transport in the neighbourhood	.000	.018	.338	.169	.	.003	.003
	Very happy with overall facilities provided by neighbourhood	.000	.438	.194	.008	.003	.	.000
	Lack of facilities in the neighbourhood	.000	.100	.172	.003	.003	.000	.
N	Total neighbourhood satisfaction, the West End	128	128	128	128	128	128	128
	Ownership of home (2 categories)	128	128	128	128	128	128	128
	Happy with contacts with neighbours	128	128	128	128	128	128	128
	Feeling very safe in my neighbourhood	128	128	128	128	128	128	128
	Very well organised public transport in the neighbourhood	128	128	128	128	128	128	128
	Very happy with overall facilities provided by neighbourhood	128	128	128	128	128	128	128
	Lack of facilities in the neighbourhood	128	128	128	128	128	128	128

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.814[a]	.663	.647	2.75

a. Predictors: (Constant), Lack of facilities in the neighbourhood, Happy with contacts with neighbours, Very well organised public transport in the neighbourhood, Feeling very safe in my neighbourhood, Very happy with overall facilities provided by neighbourhood, Ownership of home (2 categories)

b. Dependent Variable: Total neighbourhood satisfaction, the West End

From the Model Summary Table we are interested in the *Adjusted R Square* value, which tells us how much variance in the dependent variable (total neighbourhood satisfaction in the West End) is explained by the model (which includes six variables). Instead of using *R Square*, which is normally used when the sample is big, we are using the *Adjusted R Square* value because the size of our sample in the West End is 128. Since this value is .647 (expressed as a percentage, it is 64.7%), this

means that our model explains 64.7 per cent of the variance in total neighbourhood satisfaction in the West End.

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1796.112	6	299.352	39.714	.000[a]
	Residual	912.068	121	7.538		
	Total	2708.180	127			

a. Predictors: (Constant), Lack of facilities in the neighbourhood, Happy with contacts with neighbours, Very well organised public transport in the neighbourhood, Feeling very safe in my neighbourhood, Very happy with overall facilities provided by neighbourhood, Ownership of home (2 categories)

b. Dependent Variable: Total neighbourhood satisfaction, the West End

In order to assess a statistical significance of our model, we look for the *Sig.* value in the ANOVA table. Since this value (.00) is less than .05 the model in this example reaches statistical significance.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.186	2.567		2.020	.046		
	Ownership of home (2 categories)	1.537	.722	.126	2.128	.035	.793	1.261
	Happy with contacts with neighbours	1.747	.336	.296	5.198	.000	.860	1.162
	Feeling very safe in my neighbourhood	2.149	.299	.414	7.177	.000	.838	1.193
	Very well organised public transport in the neighbourhood	1.433	.266	.306	5.389	.000	.863	1.159
	Very happy with overall facilities provided by neighbourhood	1.506	.314	.279	4.799	.000	.821	1.218
	Lack of facilities in the neighbourhood	.168	.548	.018	.307	.759	.805	1.242

a. Dependent Variable: Total neighbourhood satisfaction, the West End

A Table of Coefficients tells us which of the variables included in the model contributed to the prediction of the total neighbourhood satisfaction in the West End. To find this information, we have to look in the column labelled *Beta* under *Standardized Coefficients.* From this column, we identify the beta value, which is the largest (ignoring any negative signs out the front) and, in this case, it is the beta for feeling of safety in the West End (.414). This means that feeling of safety in the West End makes the strongest unique contribution to explaining the total neighbourhood satisfaction in the West End. If the *Sig.* value in the Coefficients table is less and equal .05, it means that individual variable made a unique and statistically significant contribution to the prediction of total neighbourhood satisfaction in the West End. However, among 6 variables included in the model, there is a lack of facilities in the

neighbourhood, which did not make a statistically significant contribution, because its corresponding *Sig.* value is .759.

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Total neighbourhood satisfaction, the West End

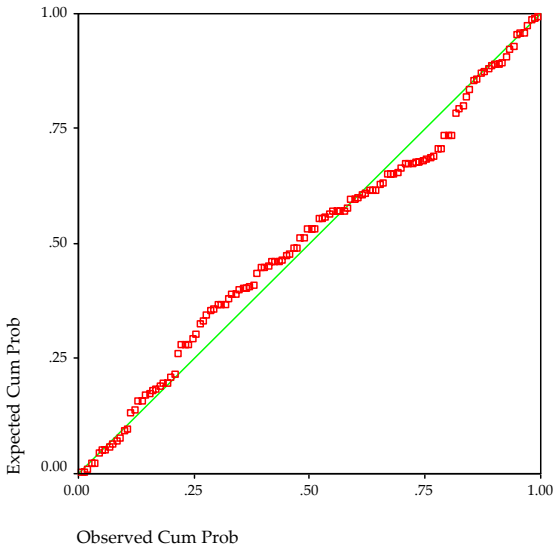


Figure 5-7: Normal Probability Plot of the multiple regression model for total neighbourhood satisfaction in the West End

Normal Probability Plot, with its relatively straight diagonal line from bottom left to top right suggests no major deviations from normality.

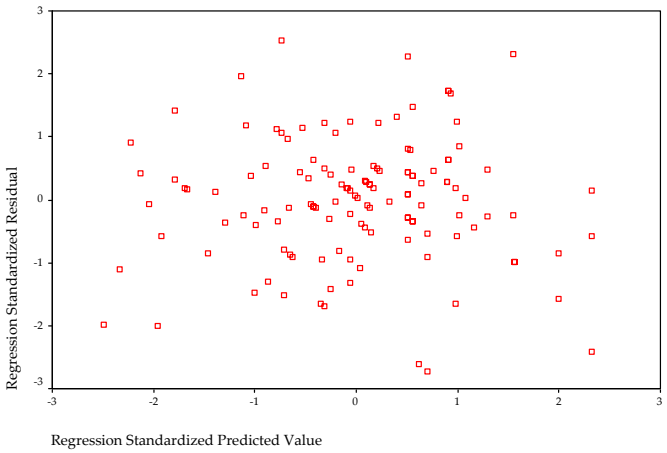


Figure 5-8: Scatterplot - Dependent Variable: Total neighbourhood satisfaction, the West End

In the Scatterplot of the standardised residuals, the residuals are roughly rectangularly distributed, with most of the scores concentrated along 0 point (in the centre), which suggests there are no violations of the assumptions for multiple regression in the case of total neighbourhood satisfaction for the West End.

5.1.2.3 Bearsden – suburban neighbourhood

Statistical tests for the relationships between the variables of ecological conditions as the independent ones and community evaluation (total neighbourhood satisfaction) in Bearsden as the dependent variable

In Bearsden, it was only the duration of staying in a present home that was analysed as an independent variable of ecological conditions in relationship with community evaluation in this neighbourhood. In Bearsden, since the owner occupied homes greatly outnumber not owner occupied homes, the statistical analysis of relationship between home ownership and community evaluation was not possible to conduct.

Question 1: Is there a relationship between the duration of staying in the present home and community evaluation (total neighbourhood satisfaction) in Bearsden?

For testing this relationship, we will employ the duration of staying in the present home in Bearsden as a categorical independent variable of two categories (less and equal 5 years, and 6 years and longer), and total neighbourhood satisfaction (measured by NSS for Bearsden) as the continuous dependent variable. Statistical test, which we shall apply, is the T test.

Group Statistics

	Duration of living in a present home (2 groups)	N	Mean	Std. Deviation	Std. Error Mean
Total neighbourhood satisfaction, Bearsden	Less or equal 5 years	26	31.31	4.11	.81
	6 years and longer	92	32.36	4.47	.47

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total neighbourhood satisfaction, Bearsden	Equal variances assumed	.107	.744	-1.077	116	.284	-1.05	.98	-2.98	.88
	Equal variances not assumed			-1.130	43.226	.265	-1.05	.93	-2.93	.83

Table 5-52: Independent samples T-test for difference in mean scores of total neighbourhood satisfaction in Bearsden between residents living in their present home for less and equal 5 years and residents living in their present home for 6 years and longer

Since *Sig.* value (.744) in Levine's Test is above .05, we have not violated the assumption on equality of variances, and we can look under the first line for the *Sig. (2-tailed)* value. As this value (.284) is above .05, we conclude that there is <u>not</u> a statistically significant difference in mean scores of total neighbourhood satisfaction

in Bearsden between residents who have been living in their present home for less and equal 5 years and those who have been living in their present home for 6 year and longer. Like it was already shown in the West End, in Bearsden there is not a statistically significant relationship between the duration of staying in the present home community evaluation.

Statistical tests for the relationships between the variables of perception of ecological conditions as the independent ones and community evaluation (total neighbourhood satisfaction) in Bearsden as the dependent variable

Question 2: Is there a relationship between the perception on next-door neighbours' similarities and total neighbourhood satisfaction in Bearsden?

In order to test this hypothesis, we are taking in account two variables: similarities between the next-door neighbours, as a categorical independent variable with 2 categories, and total neighbourhood satisfaction in Bearsden, as a continuous dependent variable. Statistical test we shall apply is the T test.

Group Statistics

	Similarities with next-door neighbours	N	Mean	Std. Deviation	Std. Error Mean
Total neighbourhood satisfaction, Bearsden	There is a great diversity between the neighbours	34	30.18	4.93	.84
	There are similarities with the next-door neighbours	84	32.92	3.93	.43

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total neighbourhood satisfaction, Bearsden	Equal variances assumed	2.083	.152	-3.183	116	.002	-2.74	.86	-4.45	-1.03
	Equal variances not assumed			-2.892	50.826	.006	-2.74	.95	-4.64	-.84

Table 5-53: Independent samples T-test for difference in mean scores of total neighbourhood satisfaction in Bearsden between residents who feel there are similarities between next-door neighbours and those who feel there is a great diversity between neighbours

Since *Sig.* value (.152) in Levine's Test is above .05, we have not violated the assumption on equality of variances and we look under the first line for *Sig. (2-tailed)* value. As this value (.002) is less than .05, we conclude that there is a statistically significant difference in mean scores of total neighbourhood satisfaction in Bearsden between respondents who feel there is a great diversity between them and their next-door neighbours and respondents who feel there are similarities

between them and their next-door neighbours in Bearsden. According to the mean values from the *Group Statistics Table*, residents who think there are similarities between them and their next-door neighbours in Bearsden achieve higher mean scores of total neighbourhood satisfaction in Berasden than the residents who think there is a great diversity between them and their next-door neighbours. However, when we calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the value we obtain is .04, and that stands for a small effect size for difference between people who think there is a great diversity between them and their next-door neighbours and those who think there are similarities between them and their next-door neighbours in terms of their total neighbourhood satisfaction in Bearsden.

Question 3: Is there a relationship between the happiness with contacts with the next-door neighbours and total neighbourhood satisfaction in Bearsden?

For testing this relationship, we employ happiness with contacts with the next-door neighbours as a categorical independent variable of 5 categories corresponding to different levels of happiness with contacts with the next-door neighbours (1=strongly disagree; 2=disagree 3=neutral/undecided; 4=agree; 5=strongly agree), and total neighbourhood satisfaction in Bearsden as a continuous dependent variable. Statistical test, which is applied, is the One-way ANOVA.

Descriptives

Total neighbourhood satisfaction, Bearsden

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Strongly disagree	3	26.67	3.79	2.19	17.26	36.07	24	31
Disagree	2	27.50	.71	.50	21.15	33.85	27	28
Neutral/ undecided	14	28.93	2.53	.68	27.47	30.39	22	32
Agree	67	32.45	4.43	.54	31.37	33.53	23	43
Strongly agree	32	33.66	4.02	.71	32.21	35.11	24	42
Total	118	32.13	4.40	.40	31.33	32.93	22	43

Test of Homogeneity of Variances

Total neighbourhood satisfaction, Bearsden

Levene Statistic	df1	df2	Sig.
2.350	4	113	.058

Since the *Sig.* value (.058) in Levine's Test is greater than .05, we have not violated the assumption on homogeneity of variances.

ANOVA

Total neighbourhood satisfaction, Bearsden

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	357.212	4	89.303	5.295	.001
Within Groups	1905.881	113	16.866		
Total	2263.093	117			

In ANOVA test we are primarily interested in *Sig.* value. As this value (.001) is less than .05 we conclude that there is a statistically significant difference in mean scores of total neighbourhood satisfaction in Bearsden between the five groups of resident's satisfaction with contacts with the next-door neighbours.

Multiple Comparisons

Dependent Variable: Total neighbourhood satisfaction, Bearsden

Tukey HSD

(I) Happy with contacts with neighbours	(J) Happy with contacts with neighbours	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Strongly disagree	Disagree	-.83	3.75	.999	-11.23	9.56
	Neutral/ undecided	-2.26	2.61	.909	-9.51	4.98
	Agree	-5.78	2.42	.127	-12.50	.94
	Strongly agree	-6.99*	2.48	.044	-13.86	-.11
Disagree	Strongly disagree	.83	3.75	.999	-9.56	11.23
	Neutral/ undecided	-1.43	3.10	.991	-10.04	7.18
	Agree	-4.95	2.95	.451	-13.12	3.22
	Strongly agree	-6.16	2.99	.246	-14.45	2.14
Neutral/ undecided	Strongly disagree	2.26	2.61	.909	-4.98	9.51
	Disagree	1.43	3.10	.991	-7.18	10.04
	Agree	-3.52*	1.21	.034	-6.86	-.17
	Strongly agree	-4.73*	1.32	.004	-8.38	-1.08
Agree	Strongly disagree	5.78	2.42	.127	-.94	12.50
	Disagree	4.95	2.95	.451	-3.22	13.12
	Neutral/ undecided	3.52*	1.21	.034	.17	6.86
	Strongly agree	-1.21	.88	.648	-3.66	1.24
Strongly agree	Strongly disagree	6.99*	2.48	.044	.11	13.86
	Disagree	6.16	2.99	.246	-2.14	14.45
	Neutral/ undecided	4.73*	1.32	.004	1.08	8.38
	Agree	1.21	.88	.648	-1.24	3.66

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

Total neighbourhood satisfaction, Bearsden

Tukey HSD[a,b]

Happy with contacts with neighbours	N	Subset for alpha = .05
		1
Strongly disagree	3	26.67
Disagree	2	27.50
Neutral/ undecided	14	28.93
Agree	67	32.45
Strongly agree	32	33.66
Sig.		.052

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5.258.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

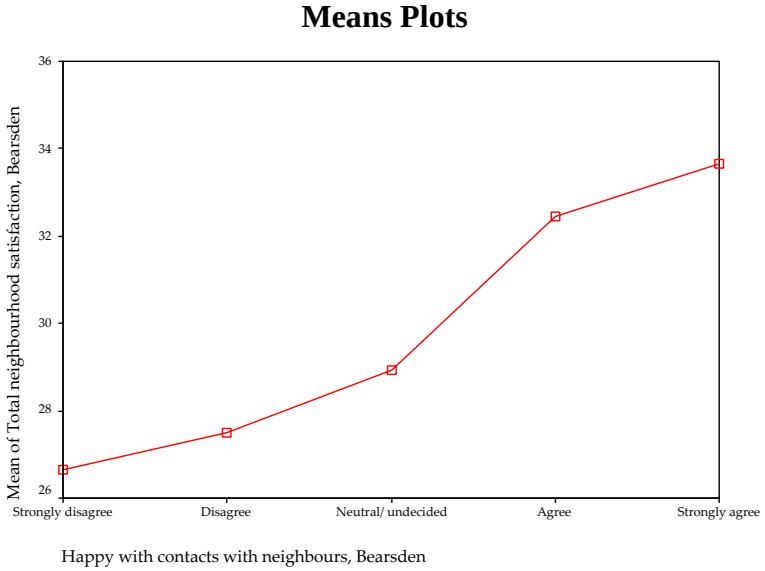


Figure 5-9: Means Plots diagram for the relationship between happiness with contacts with neighbours and total neighbourhood satisfaction in Bearsden

From results of this analysis we can conclude that in Bearsden those respondents who are happier with contacts with their next-door neighbours show higher total neighbourhood satisfaction scores. It is possible do determine the effect size for this result by calculating eta squared (see Equation 5-2). Since calculated eta squared for this type of relationship is .16 and that is over .14, we conclude that there is a large effect size for this result.

Question 4: Does feeling of safety in Bearsden relate to community evaluation of this neighbourhood?

For testing this hypothesis, we include feeling of safety in Bearsden as a categorical independent variable (categories ranked 1 to 4, from disagree to strongly agree with feeling safe in Bearsden), and total neighbourhood satisfaction in Bearsden as the continuous dependent variable. Statistical test, which we shall use, is One-way ANOVA.

Descriptives

Total neighbourhood satisfaction, Bearsden

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Disagree	7	27.71	2.50	.94	25.40	30.02	24	32
Neutral/ undecided	25	29.44	3.27	.65	28.09	30.79	22	34
Agree	71	33.46	4.03	.48	32.51	34.42	24	43
Strongly agree	15	32.33	5.26	1.36	29.42	35.25	25	42
Total	118	32.13	4.40	.40	31.33	32.93	22	43

Test of Homogeneity of Variances

Total neighbourhood satisfaction, Bearsden

Levene Statistic	df1	df2	Sig.
2.198	3	114	.092

Since Sig. value (.092) in Levine's Test is above .05, we have not violated the assumption on equality of variances.

ANOVA

Total neighbourhood satisfaction, Bearsden

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	444.509	3	148.170	9.288	.000
Within Groups	1818.584	114	15.952		
Total	2263.093	117			

In ANOVA table we are looking for the *Sig.* value. As this value (.00) is less than .05, we conclude that there is a statistically significant difference in mean scores of total neighbourhood satisfaction between respondents of 4 different levels of feeling safe in Bearsden.

Multiple Comparisons

Dependent Variable: Total neighbourhood satisfaction, Bearsden

Tukey HSD

(I) Feeling very safe in my neighbourhood	(J) Feeling very safe in my neighbourhood	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Disagree	Neutral/ undecided	-1.73	1.71	.744	-6.18	2.73
	Agree	-5.75*	1.58	.002	-9.88	-1.62
	Strongly agree	-4.62	1.83	.061	-9.39	.15
Neutral/ undecided	Disagree	1.73	1.71	.744	-2.73	6.18
	Agree	-4.02*	.93	.000	-6.45	-1.60
	Strongly agree	-2.89	1.30	.125	-6.29	.51
Agree	Disagree	5.75*	1.58	.002	1.62	9.88
	Neutral/ undecided	4.02*	.93	.000	1.60	6.45
	Strongly agree	1.13	1.13	.751	-1.83	4.09
Strongly agree	Disagree	4.62	1.83	.061	-.15	9.39
	Neutral/ undecided	2.89	1.30	.125	-.51	6.29
	Agree	-1.13	1.13	.751	-4.09	1.83

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

Total neighbourhood satisfaction, Bearsden

Tukey HSD[a,b]

Feeling very safe in my neighbourhood	N	Subset for alpha = .05		
		1	2	3
Disagree	7	27.71		
Neutral/ undecided	25	29.44	29.44	
Strongly agree	15		32.33	32.33
Agree	71			33.46
Sig.		.634	.196	.863

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 15.174.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

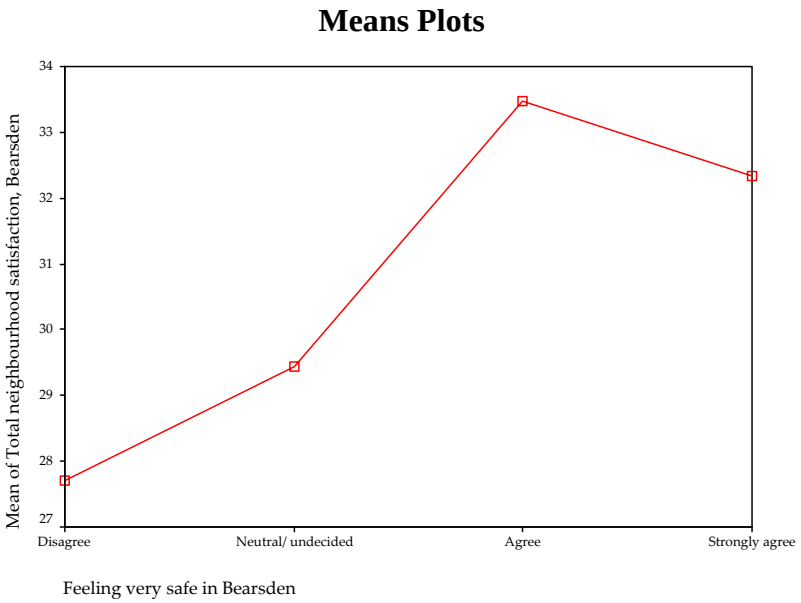


Figure 5-10: Means Plots diagram for the relationship between feeling of safety in Bearsden and total neighbourhood satisfaction in Bearsden

From the results of this analysis we can conclude that respondents who feel safer living in Bearsden achieve higher total neighbourhood satisfaction scores. It is possible do determine the effect size for this result by calculating eta squared (see Equation 5-2). Since calculated eta squared for this type of relationship is .20, we conclude that there is a large effect size for this result, meaning there is a great relationship between feeling of safety in Bearsden and total neighbourhood satisfaction with Bearsden.

Question 5: Is there a relationship between the respondent's satisfaction with the public transport system organisation in Bearsden and community evaluation in Bearsden?

For testing this hypothesis, we employ respondent's satisfaction with the public transport system organisation in Bearsden as a categorical independent variable (4 categories) and total neighbourhood satisfaction in Bearsden as a continuous dependent variable. Normally, we should apply One-way ANOVA as a statistical test for this relationship, but since we do not meet the assumption on equality of variances, which is a prerequisite for conducting One-way ANOVA, we shall use its non-parametrical alternative, which is Kruskal-Wallis Test.

Ranks

	Well organised PT	N	Mean Rank
Total neighbourhood satisfaction, Bearsden	Strongly disagree	13	16.38
	Disagree	26	34.37
	Neutral/ undecided	58	72.98
	Agree	21	80.07
	Total	118	

Test Statistics[a,b]

	Total neighbourhood satisfaction, Bearsden
Chi-Square	51.579
df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: Very well organised public transport in the neighbourhood

Table 5-54: Kruskal-Wallis Test for testing the difference in mean scores of total neighbourhood satisfaction in Bearsden between residents of different levels of satisfaction with the public transport system organisation in Bearsden

The main information from Kruskal-Wallis test is: the *Chi-Square* value, the degrees of freedom *(df)*, and the significance level *(Asymp. Sig.)*. *Chi-Square* value (51.579) is higher than critical value of the chi-square distribution (7.82) for *alpha*=.05 with *df*(3). This means we can reject the Null-Hypothesis (there is no relationship between the two variables) and conclude that there is a statistically significant difference in total neighbourhood satisfaction in Bearsden across the four levels of satisfaction with public transport system in Bearsden. *Asymp. Sig.* value (.00) is smaller than .05, which also supports the previous conclusion. Then we can look in *Ranks Table* to examine the Mean Rank. These results show that the more people are satisfied with the public transport system organisation in Bearsden, the higher are their scores of total neighbourhood satisfaction in Bearsden.

Question 6: Does level of satisfaction with overall facilities provided by Bearsden influence total neighbourhood satisfaction with it?

For testing this hypothesis, we include respondent's satisfaction with the overall facilities provided by Bearsden as categorical independent variable (5 categories), and total neighbourhood satisfaction in Bearsden as a continuous dependent variable. Statistical method, which is applied, is One-way ANOVA.

Descriptives

Total neighbourhood satisfaction, Bearsden

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Strongly disagree	2	27.50	4.95	3.50	-16.97	71.97	24	31
Disagree	15	26.67	2.66	.69	25.19	28.14	22	32
Neutral/ undecided	35	31.09	3.24	.55	29.97	32.20	24	37
Agree	60	34.12	3.81	.49	33.13	35.10	25	43
Strongly agree	6	33.50	5.47	2.23	27.76	39.24	28	42
Total	118	32.13	4.40	.40	31.33	32.93	22	43

Test of Homogeneity of Variances

Total neighbourhood satisfaction, Bearsden

Levene Statistic	df1	df2	Sig.
1.227	4	113	.303

Since *Sig.* value (.303) in Levine's Test is above .05, we have not violated the assumption on equality of variances.

ANOVA

Total neighbourhood satisfaction, Bearsden

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	776.834	4	194.208	14.766	.000
Within Groups	1486.260	113	13.153		
Total	2263.093	117			

In the ANOVA table, we are interested in *Sig.* value. As this value (.00) is less than .05, we conclude that there is a statistically significant difference in mean scores of total neighbourhood satisfaction in Bearsden between residents of 5 levels of satisfaction with the overall facilities provided by Bearsden.

Multiple Comparisons

Dependent Variable: Total neighbourhood satisfaction, Bearsden
Tukey HSD

(I) Very happy with overall facilities provided by neighbourhood	(J) Very happy with overall facilities provided by neighbourhood	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Strongly disagree	Disagree	.83	2.73	.998	-6.74	8.40
	Neutral/ undecided	-3.59	2.64	.654	-10.90	3.72
	Agree	-6.62	2.61	.089	-13.84	.61
	Strongly agree	-6.00	2.96	.260	-14.21	2.21
Disagree	Strongly disagree	-.83	2.73	.998	-8.40	6.74
	Neutral/ undecided	-4.42*	1.12	.001	-7.52	-1.32
	Agree	-7.45*	1.05	.000	-10.35	-4.55
	Strongly agree	-6.83*	1.75	.002	-11.69	-1.98
Neutral/ undecided	Strongly disagree	3.59	2.64	.654	-3.72	10.90
	Disagree	4.42*	1.12	.001	1.32	7.52
	Agree	-3.03*	.77	.001	-5.17	-.89
	Strongly agree	-2.41	1.60	.560	-6.86	2.03
Agree	Strongly disagree	6.62	2.61	.089	-.61	13.84
	Disagree	7.45*	1.05	.000	4.55	10.35
	Neutral/ undecided	3.03*	.77	.001	.89	5.17
	Strongly agree	.62	1.55	.995	-3.69	4.92
Strongly agree	Strongly disagree	6.00	2.96	.260	-2.21	14.21
	Disagree	6.83*	1.75	.002	1.98	11.69
	Neutral/ undecided	2.41	1.60	.560	-2.03	6.86
	Agree	-.62	1.55	.995	-4.92	3.69

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

Total neighbourhood satisfaction, Bearsden

Tukey HSD[a,b]

Very happy with overall facilities provided by	N	Subset for alpha = .05	
		1	2
Disagree	15	26.67	
Strongly disagree	2	27.50	
Neutral/ undecided	35	31.09	31.09
Strongly agree	6		33.50
Agree	60		34.12
Sig.		.194	.566

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 6.422.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Means Plots

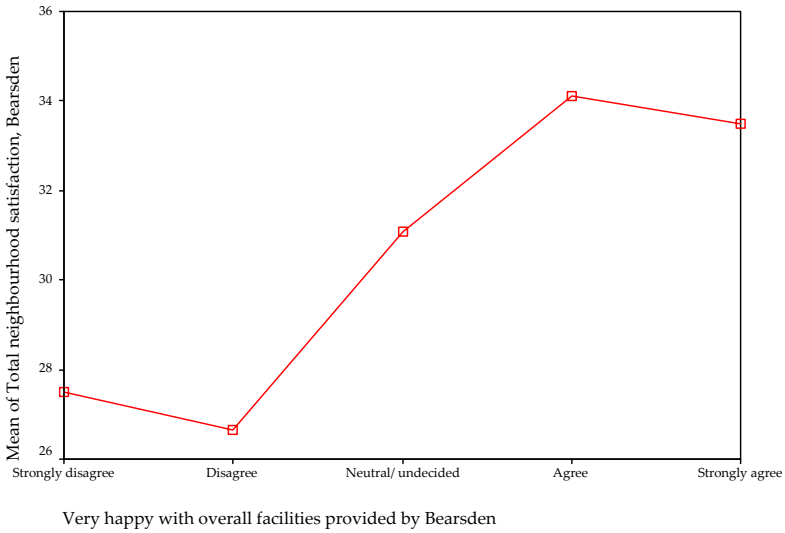


Figure 5-11: Means Plots diagram for the relationship between satisfaction with overall facilities provided by Bearsden and total neighbourhood satisfaction in Bearsden

From the results of this analysis we can conclude that the respondents who are more satisfied with the overall facilities in Bearsden achieve higher total neighbourhood satisfaction scores. It is possible do determine the effect size for this result by calculating eta squared (see Equation 5-2). Since calculated eta squared for this type of relationship is .34, we conclude that there is a large effect size for this result, meaning that total neighbourhood satisfaction with Bearsden is largely influenced by the resident's satisfaction with the overall facilities provided by Bearsden.

Question 7: Is there a relationship between the respondent's perception of the lack of certain facilities in Bearsden and total neighbourhood satisfaction with Bearsden?

For testing this relationship, we include the lack of certain facilities in Bearsden as a categorical independent variable with 2 categories, and total neighbourhood satisfaction with Bearsden as a continuous dependent variable. Statistical test, which is applied, is the T-test because the categorical variable of this relationship is dichotomous (2 categories).

Group Statistics

	Lack of facilities in the neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Total neighbourhood satisfaction, Bearsden	No facilities are lacking in the neighbourhood	53	34.45	3.47	.48
	There is a lack of certain facilities	65	30.23	4.17	.52

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total neighbourhood satisfaction, Bearsden	Equal variances assumed	2.901	.091	5.886	116	.000	4.22	.72	2.80	5.64
	Equal variances not assumed			5.997	115.946	.000	4.22	.70	2.83	5.62

Table 5-55: Independent samples T-test for difference in mean scores of total neighbourhood satisfaction in Bearsden between respondents who feel there are no facilities that are lacking in Bearsden and those who feel there is a lack of certain facilities in this neighbourhood

Since the *Sig.* value (.091) in Levine's test is above .05, we have not violated the assumption on equality of variances and we can look under the first line for the *Sig. (2-tailed)* value. Since this value (.00) is less than .05, we conclude that there is a statistically significant difference in mean scores of total neighbourhood satisfaction in Bearsden between respondents who think that no facilities are lacking in Bearsden and those who think that there is a lack of certain facilities in Bearsden. According to the mean values from the *Group Statistics Table*, those respondents who think that no facilities are lacking in Bearsden have higher mean scores of total neighbourhood satisfaction with Bearsden than respondents who think there is a lack of certain facilities in this neighbourhood. However, the magnitude of differences between these two groups of respondents in terms of their community evaluation of Bearsden can be calculated using the formula for eta squared (see Equation 5-1). The value for eta squared we have obtained is .12 and that stands for the moderate effect of this result.

From the statistical analyses on relationships between independent variables of respondents' perception of ecological conditions and community evaluation (total neighbourhood satisfaction) in Bearsden, it can be noticed that all independent variables showed a statistically significant relationship with the community evaluation in Bearsden.

Standard multiple regression for predicting total neighbourhood satisfaction in Bearsden

As we have already applied Standard Multiple Regression in the West End for prediction of community evaluation in it, we shall apply the same test in Bearsden in order to know if it is possible to predict a particular outcome (total neighbourhood satisfaction in Bearsden) by using a set of 6 independent variables of perception of ecological conditions. Standard multiple regression will also enable us to see which one of those variables is the best predictor of total neighbourhood satisfaction in Bearsden.

Correlations

		Total neighbourhood satisfaction, Bearsden	Similarities with next-door neighbours	Happy with contacts with neighbours	Feeling very safe in my neighbourhood	Very well organised public transport in the neighbourhood	Very happy with overall facilities provided by neighbourhood	Lack of facilities in the neighbourhood
Pearson Correlation	Total neighbourhood satisfaction, Bearsden	1.000	.283	.377	.349	.631	.544	-.480
	Similarities with next-door neighbours	.283	1.000	.213	.105	.279	.184	-.010
	Happy with contacts with neighbours	.377	.213	1.000	-.098	.272	.046	-.263
	Feeling very safe in my neighbourhood	.349	.105	-.098	1.000	.128	.163	-.041
	Very well organised public transport in the neighbourhood	.631	.279	.272	.128	1.000	.241	-.329
	Very happy with overall facilities provided by neighbourhood	.544	.184	.046	.163	.241	1.000	-.471
	Lack of facilities in the neighbourhood	-.480	-.010	-.263	-.041	-.329	-.471	1.000
Sig. (1-tailed)	Total neighbourhood satisfaction, Bearsden	.	.001	.000	.000	.000	.000	.000
	Similarities with next-door neighbours	.001	.	.010	.130	.001	.023	.456
	Happy with contacts with neighbours	.000	.010	.	.146	.001	.311	.002
	Feeling very safe in my neighbourhood	.000	.130	.146	.	.084	.039	.328
	Very well organised public transport in the neighbourhood	.000	.001	.001	.084	.	.004	.000
	Very happy with overall facilities provided by neighbourhood	.000	.023	.311	.039	.004	.	.000
	Lack of facilities in the neighbourhood	.000	.456	.002	.328	.000	.000	.
N	Total neighbourhood satisfaction, Bearsden	118	118	118	118	118	118	118
	Similarities with next-door neighbours	118	118	118	118	118	118	118
	Happy with contacts with neighbours	118	118	118	118	118	118	118
	Feeling very safe in my neighbourhood	118	118	118	118	118	118	118
	Very well organised public transport in the neighbourhood	118	118	118	118	118	118	118
	Very happy with overall facilities provided by neighbourhood	118	118	118	118	118	118	118
	Lack of facilities in the neighbourhood	118	118	118	118	118	118	118

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.826[a]	.682	.665	2.54

a. Predictors: (Constant), Lack of facilities in the neighbourhood, Similarities with next-door neighbours, Feeling very safe in my neighbourhood, Happy with contacts with neighbours, Very well organised public transport in the neighbourhood, Very happy with overall facilities provided by neighbourhood

b. Dependent Variable: Total neighbourhood satisfaction, Bearsden

From the Model Summary Table we are interested in the *Adjusted R Square* value, which tells us how much variance in the dependent variable (total neighbourhood satisfaction in Bearsden) is explained by the model (which includes six variables). Instead of using *R Square*, which is normally used when the sample is big, we are using the *Adjusted R Square* value because the size of our sample in Bearsden is 118. Since this value is .665 (expressed as a percentage, it is 66.5%), this means that our

model explains 66.5 per cent of the variance in total neighbourhood satisfaction in Bearsden.

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1544.342	6	257.390	39.750	.000[a]
	Residual	718.752	111	6.475		
	Total	2263.093	117			

a. Predictors: (Constant), Lack of facilities in the neighbourhood, Similarities with next-door neighbours, Feeling very safe in my neighbourhood, Happy with contacts with neighbours, Very well organised public transport in the neighbourhood, Very happy with overall facilities provided by neighbourhood

b. Dependent Variable: Total neighbourhood satisfaction, Bearsden

In order to assess a statistical significance of our model, we look for the *Sig.* value in the ANOVA table. Since this value (.00) is less than .05 the model in this example reaches statistical significance.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	10.617	2.583		4.111	.000		
	Similarities with next-door neighbours	.281	.562	.029	.500	.618	.846	1.182
	Happy with contacts with neighbours	1.274	.311	.241	4.101	.000	.831	1.204
	Feeling very safe in my neighbourhood	1.550	.330	.259	4.693	.000	.941	1.063
	Very well organised public transport in the neighbourhood	2.025	.301	.406	6.716	.000	.784	1.275
	Very happy with overall facilities provided by neighbourhood	1.745	.329	.334	5.295	.000	.717	1.395
	Lack of facilities in the neighbourhood	-1.009	.577	-.115	-1.747	.083	.665	1.503

a. Dependent Variable: Total neighbourhood satisfaction, Bearsden

A Table of Coefficients tells us which of the variables included in the model contributed to the prediction of the total neighbourhood satisfaction in Bearsden. To find this information, we have to look in the column labelled *Beta* under *Standardized Coefficients.* From this column, we identify the beta value, which is the largest (ignoring any negative signs out the front) and, in this case, it is the beta for satisfaction with public transport in Bearsden (.406). This means that satisfaction with public transport system in Bearsden makes the strongest unique contribution to explaining the total neighbourhood satisfaction in Bearsden. If the *Sig.* value in the Coefficients table is less and equal .05, it means that individual variable made a unique and statistically significant contribution to the prediction of total neighbourhood satisfaction in Bearsden. However, among 6 variables included in the model, there are two variables: similarities with next-door neighbours and a lack of

facilities in the neighbourhood, which did not make a statistically significant contribution, because corresponding *Sig.* values to these two variables are .618 and .083 respectively, and that is higher than .05.

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Total neighbourhood satisfaction, Bearsden

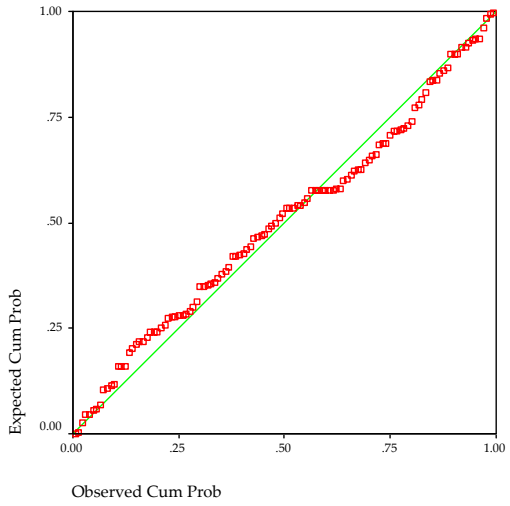


Figure 5-12: Normal Probability Plot of the multiple regression model for total neighbourhood satisfaction in Bearsden

Normal Probability Plot, with its relatively straight diagonal line from bottom left to top right suggests no major deviations from normality.

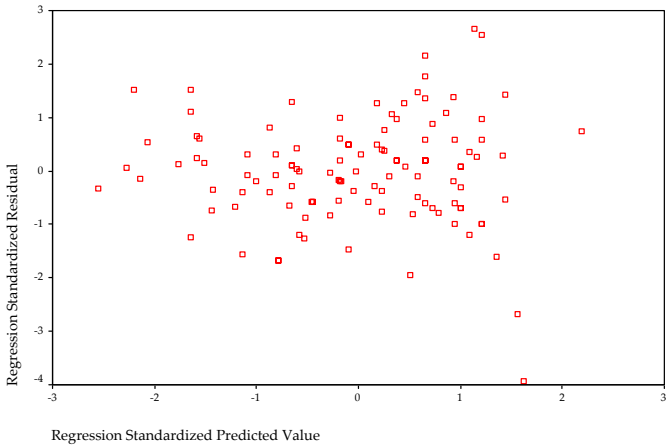


Figure 5-13: Scatterplot - Dependent Variable: Total neighbourhood satisfaction, Bearsden

In the Scatterplot of the standardised residuals, the residuals are roughly rectangularly distributed, with most of the scores concentrated along 0 point (in the centre), which suggests that there are no violations of the assumptions for multiple regression in the case of total neighbourhood satisfaction for Bearsden.

5.2 Social and Environmental Context

A second dimension of residential preferences involves analysis of differences in respondents' social and environmental context between the two case-study neighbourhoods.

Social and environmental context is described by: neighbourhood bonds, neighbourhood safety, facilities in the neighbourhood, private garden as an environmental comfort and, perceived pollution as an environmental discomfort. Subsequently, these features are translated in the set of dependent variables, which are observed in relation to the type of neighbourhood (independent variable).

Dependent variables that describe neighbourhood bonds are: similarities with the next-door neighbours, frequency in meeting the next-door neighbours, and happiness with contacts with neighbours.

Neighbourhood safety is represented by dependent variable: feeling very safe in the residential neighbourhood.

Facilities in the neighbourhood are represented by dependent variables: happiness with the overall facilities provided by the neighbourhood, lack of certain facilities in the neighbourhood and, frequency in attending certain facilities.

Private garden as a comfort of residential neighbourhood is represented by independent variable: home having a private garden, and the dependent variable: perceived importance of a private garden.

Pollution as an environmental discomfort is described by the dependent variable: perceived pollution in the residential neighbourhood.

Question 1: Are the residents in suburban neighbourhood (Bearsden) more similar to their next-door neighbours than residents in urban neighbourhood (the West End)?

For testing this hypothesis, we are using the type of neighbourhood as a categorical independent variable (2 categories), and similarity with the next-door neighbours as a categorical dependent variable of 2 categories (1=there are no similarities between the next-door neighbours, and 2=there are similarities between the next-door neighbours). Statistical test, which is used, is the Chi-Square Test because variables that are used in this test are of categorical type. The Null-Hypothesis is that there is

no relationship between the type of neighbourhood and similarities between the next-door neighbours.

Neighbourhood * Similarities with next-door neighbours Crosstabulation

			Similarities with next-door neighbours		
			No similarities between next-door neighb.	There are similarities between the next-door neighb.	Total
Neighbourhood	Urban, West End	Count	54	74	128
		Expected Count	45.8	82.2	128.0
		% within Neighbourhood	42.2%	57.8%	100.0%
		% within Similarities with next-door neighbours	61.4%	46.8%	52.0%
		% of Total	22.0%	30.1%	52.0%
	Suburban, Bearsden	Count	34	84	118
		Expected Count	42.2	75.8	118.0
		% within Neighbourhood	28.8%	71.2%	100.0%
		% within Similarities with next-door neighbours	38.6%	53.2%	48.0%
		% of Total	13.8%	34.1%	48.0%
Total		Count	88	158	246
		Expected Count	88.0	158.0	246.0
		% within Neighbourhood	35.8%	64.2%	100.0%
		% within Similarities with next-door neighbours	100.0%	100.0%	100.0%
		% of Total	35.8%	64.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.780[b]	1	.029		
Continuity Correction[a]	4.215	1	.040		
Likelihood Ratio	4.812	1	.028		
Fisher's Exact Test				.033	.020
Linear-by-Linear Association	4.760	1	.029		
N of Valid Cases	246				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 42.21.

Table 5-56: Chi-Square Test for exploring the relationship between type of neighbourhood and similarities between the next-door neighbours

First thing we have to check from the output of Chi-Square Test is whether we have violated the assumption concerning the 'minimum expected cell frequency', which should be 5 or greater (or that at least 80% of cells have expected frequencies of 5 or more) (Pallant, 2001; Gravetter & Wallnau, 2000; Siegel & Castellan, 1988). When we have 2x2 table, this information is given in footnote *b* of Chi-Square Test Table, and in this case it is that 0 cells have expected count less than 5, so we have not violated the assumption for conducting the Chi-Square Test.

The main value we are interested in from the output is the *Pearson Chi-Square* value. However, since we have 2x2 table, we shall use Yate's Correction for Continuity, which compensates for the overestimate of the chi-square value when used with a

2 by 2 table. In our example, *Continuity Correction* value is 4.215, with an associated significance level (*Asymp. Sig.* value) of .04. Since this value is less than alpha value of .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in similarities with next-door neighbours between the two neighbourhoods, where in Bearsden residents feel more similar to their next-door neighbours than in the West End.

Question 2: Is there a relationship between the type of neighbourhood and frequency in meeting the next-door neighbours?

For testing this relationship, we are using the type of neighbourhood as a categorical independent variable of 2 categories (1=Urban, the West End, and 2=Suburban, Bearsden), and frequency in meeting the next-door neighbours as a continuous dependent variable measured by the Likert type of scale (with ranks 1 to 6, where 1=never, 2=very rarely, 3=rarely, 4=occasionally, 5=frequently, and 6=very frequently). Regarding the types of variables involved in testing this relationship, we shall use the T-test.

Group Statistics

	Neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Meeting next-door neighbours	Urban, West End	128	3.99	1.17	.10
	Suburban, Bearsden	118	4.17	1.05	9.65E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Meeting next-door neighbours	Equal variances assumed	.487	.486	-1.245	244	.214	-.18	.14	-.46	.10
	Equal variances not assumed			-1.251	243.762	.212	-.18	.14	-.46	.10

Table 5-57: Independent samples T-test for difference in mean scores of frequency in meeting the next-door neighbours between the West End and Bearsden

In Levine's Test, the *Sig.* value (.486) is higher than .05, which means that the assumption of equal variances has not been violated. The *Sig. (2-tailed)* value is .214, which is above .05, and that means there is not a statistically significant difference in mean scores of frequency in meeting next-door neighbours between the West End and Bearsden respondents.

Question 3: Is there a relationship between the type of neighbourhood and happiness with contacts with neighbours?

For testing this relationship, we are using the type of neighbourhood as a categorical independent variable, and the happiness with contacts with neighbours as a continuous dependent variable measured by Likert type of scale (ranks 1 to 5, where 1=strongly disagree, 2=disagree, 3= neutral/ undecided, 4=agree, 5=strongly agree to the statement: I am very happy with contacts neighbours). Statistical test, which is applied, is the T-test.

Group Statistics

	Neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Happy with contacts with neighbours	Urban, West End	128	3.84	.78	6.91E-02
	Suburban, Bearsden	118	4.04	.83	7.65E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Happy with contacts with neighbours	Equal variances assumed	1.315	.253	-2.008	244	.046	-.21	.10	-.41	-3.93E-03
	Equal variances not assumed			-2.003	239.120	.046	-.21	.10	-.41	-3.40E-03

Table 5-58: Independent samples T-test for difference in mean scores of happiness with contacts with neighbours between the West End and Bearsden

In Levine's Test for the homogeneity of variances the *Sig.* value is .253, which is above .05. Therefore, the assumption of equal variances has not been violated. Since the *Sig. (2-tailed)* value is .046, which is equal .05, we can conclude that there is a statistically significant difference between the West End and Bearsden in the mean scores of happiness with contacts with neighbours. After making this conclusion, if we look in the first table of *Group Statistics*, we can see that mean score of happiness with contacts with neighbours is higher in Bearsden than in the West End. However, when we calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the value we obtain is .02, and that stands for a small effect size for difference between the West End and Bearsden in terms of their residents' happiness with contacts with their next-door neighbours.

Question 4: Is there a relationship between the type of neighbourhood and neighbourhood safety?

For testing this relationship, we are using the type of neighbourhood as a categorical independent variable and, neighbourhood safety as a categorical dependent variable

of 2 categories (1=feeling less than safe in the residential neighbourhood; 2=feeling safe or very safe in the residential neighbourhood). For testing this relationship we shall apply Chi-Square Test. The Null-Hypothesis is that there is no relationship between the type of residential neighbourhood and feeling of safety in the residential neighbourhood.

Neighbourhood * Feeling very safe in my neighbourhood Crosstabulation

			Neighbourhood safety		
			Feeling less than safe in the neighbourhood	Feeling safe or very safe in the neighbourhood	Total
Neighbourhood	Urban, West End	Count	42	86	128
		Expected Count	38.5	89.5	128.0
		% within Neighbourhood	32.8%	67.2%	100.0%
		% within Neighbourhood safety	56.8%	50.0%	52.0%
		% of Total	17.1%	35.0%	52.0%
	Suburban, Bearsden	Count	32	86	118
		Expected Count	35.5	82.5	118.0
		% within Neighbourhood	27.1%	72.9%	100.0%
		% within Neighbourhood safety	43.2%	50.0%	48.0%
		% of Total	13.0%	35.0%	48.0%
Total		Count	74	172	246
		Expected Count	74.0	172.0	246.0
		% within Neighbourhood	30.1%	69.9%	100.0%
		% within Neighbourhood safety	100.0%	100.0%	100.0%
		% of Total	30.1%	69.9%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.946[b]	1	.331		
Continuity Correction[a]	.695	1	.404		
Likelihood Ratio	.949	1	.330		
Fisher's Exact Test				.404	.202
Linear-by-Linear Association	.943	1	.332		
N of Valid Cases	246				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 35.50.

Table 5-59: Chi-Square Test for exploring the relationship between the type of neighbourhood and neighbourhood safety

If we look under footnote *b* of *Chi-Square Test* Table, we can see that 0% of cells have expected count less than 5, which means that we have not violated the assumption of this test on minimum expected cell frequency. Since we have 2x2 table, we are observing the *Asymp. Sig.(2-sided)* value corresponding to the Continuity Correction line. As this value (.404) is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in the feeling of safety in the residential neighbourhood between residents of the West End and Bearsden.

Question 5: Is there a relationship between the type of neighbourhood and resident's happiness with the overall facilities provided by the neighbourhood?

For testing this relationship, we will use the type of neighbourhood as a categorical independent variable and happiness with the overall facilities provided by the neighbourhood as continuous dependent variable measured by the Likert type of scale (with ranks1 to 5, where 1=strongly disagree; 2=disagree; 3=neutral/undecided; 4=agree and 5=strongly agree to statement: I am very happy with the overall facilities provided by the residential neighbourhood). Statistical test, which is used, is the T-test.

Group Statistics

	Neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Very happy with overall facilities provided by neighbourhood	Urban, West End	128	3.88	.86	7.57E-02
	Suburban, Bearsden	118	3.45	.84	7.76E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Very happy with overall facilities provided by neighbourhood	Equal variances assumed	6.180	.014	3.996	244	.000	.43	.11	.22	.65
	Equal variances not assumed			3.999	242.951	.000	.43	.11	.22	.65

Table 5-60: Independent samples T-test for difference in mean scores of happiness with the overall facilities provided by the neighbourhood between the West End and Bearsden

In Levine's Test for the equality of variances, the *Sig.* value (.014) is bellow .05 which means that the equal variances are not assumed. However, we can look at *Sig. (2-tailed)* value for the equal variances not assumed. Since this value (.00) is less than .05, we can conclude that there is a statistically significant difference in mean scores of happiness with the overall facilities provided by the neighbourhood between the West End and Bearsden. This test shows that mean scores of happiness with the overall facilities in the residential neighbourhood are higher in the West End (urban neighbourhood) than in Bearsden (suburban neighbourhood). However, when we calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1), the result .06 which is obtained in this case says that there is a medium effect size for difference between the West End and Bearsden in terms of their residents' happiness with the overall facilities provided by the residential neighbourhood.

Question 6: Do people in suburban type of neighbourhood lack more facilities than people in urban type of neighbourhood?

For testing the relationship between the neighbourhood type and lack of facilities in the neighbourhood, we have used the type of neighbourhood as a categorical independent variable and the lack of facilities in the neighbourhood as a categorical dependent variable of 2 categories (1=no facilities are lacking in the neighbourhood; 2=there is a lack of certain facilities in the neighbourhood). Because both variables are of categorical type, we shall use the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the type of neighbourhood and the lack of facilities in the neighbourhood.

Neighbourhood * Lack of facilities in the neighbourhood Crosstabulation

			Lack of facilities in the neighbourhood		
			No facilities are lacking in the neighbourhood	There is a lack of certain facilities	Total
Neighbourhood	Urban, West End	Count	74	54	128
		Expected Count	66.1	61.9	128.0
		% within Neighbourhood	57.8%	42.2%	100.0%
		% within Lack of facilities in the neighbourhood	58.3%	45.4%	52.0%
		% of Total	30.1%	22.0%	52.0%
	Suburban, Bearsden	Count	53	65	118
		Expected Count	60.9	57.1	118.0
		% within Neighbourhood	44.9%	55.1%	100.0%
		% within Lack of facilities in the neighbourhood	41.7%	54.6%	48.0%
		% of Total	21.5%	26.4%	48.0%
Total		Count	127	119	246
		Expected Count	127.0	119.0	246.0
		% within Neighbourhood	51.6%	48.4%	100.0%
		% within Lack of facilities in the neighbourhood	100.0%	100.0%	100.0%
		% of Total	51.6%	48.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.090[b]	1	.043		
Continuity Correction[a]	3.589	1	.058		
Likelihood Ratio	4.100	1	.043		
Fisher's Exact Test				.055	.029
Linear-by-Linear Association	4.073	1	.044		
N of Valid Cases	246				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 57.08.

Table 5-61: Chi-Square Test for exploring the relationship between the type of neighbourhood and lack of facilities in the neighbourhood

If we look under the footnote *b* of *Chi-Square Test* Table, we can see that 0% of cells have expected count less than 5, which means that we have not violated the assumption of this test on minimum expected cell frequency. Since we have 2x2

table, we are observing the *Asymp. Sig.(2-sided)* value corresponding to the *Continuity Correction* line. As this value (.06) is above .05 we accept the Null Hypothesis and conclude that there is not a statistically significant difference in the people's perception of lack of facilities in the residential neighbourhood between urban neighbourhood (the West End) and suburban neighbourhood (Bearsden).

Before proceeding with the statistical analyses regarding frequencies of attending certain facilities as dependent variables, we shall perform the Pearson correlation between the type of neighbourhood and frequencies in attending 10 facilities that were listed in the questionnaire. Those facilities are: city centre; daily shopping; weekly shopping; health centre; sport centre; green/ open spaces; post office, bank and other administration business; library; cinema, theatre; restaurants, pubs and cafés.

Correlations

		Neighbourhood	Frequency in going to the city centre	Frequency in daily shopping	Frequency in weekly shopping	Frequency in visiting health centre	Frequency in visiting sport centre	Frequency in visiting green/ open spaces	Frequency in visiting post office, bank and other administration	Frequency in going to a library	Frequency in going to cinema and theatre	Frequency in going to restaurants, pubs, cafes
Neighbourhood	Pearson Correlation	1.000	-.131*	-.193**	-.080	-.054	-.118	-.042	-.022	-.068	-.340**	-.281**
	Sig. (2-tailed)	.	.040	.002	.210	.398	.064	.508	.735	.291	.000	.000
	N	246	246	246	246	246	246	246	246	246	246	246
Frequency in going to the city centre	Pearson Correlation	-.131*	1.000	.001	.193**	-.024	.052	-.009	.013	.036	.272**	.179**
	Sig. (2-tailed)	.040	.	.981	.002	.703	.418	.893	.840	.577	.000	.005
	N	246	246	246	246	246	246	246	246	246	246	246
Frequency in daily shopping	Pearson Correlation	-.193**	.001	1.000	.188**	.079	.032	.094	.171**	.107	-.080	.048
	Sig. (2-tailed)	.002	.981	.	.003	.217	.616	.142	.007	.093	.212	.456
	N	246	246	246	246	246	246	246	246	246	246	246
Frequency in weekly shopping	Pearson Correlation	-.080	.193**	.188**	1.000	.111	.080	.021	.126*	.199**	.217**	.138*
	Sig. (2-tailed)	.210	.002	.003	.	.082	.209	.747	.049	.002	.001	.031
	N	246	246	246	246	246	246	246	246	246	246	246
Frequency in visiting health centre	Pearson Correlation	-.054	-.024	.079	.111	1.000	.199**	-.086	.008	.044	.087	.014
	Sig. (2-tailed)	.398	.703	.217	.082	.	.002	.179	.895	.491	.175	.823
	N	246	246	246	246	246	246	246	246	246	246	246
Frequency in visiting sport centre	Pearson Correlation	-.118	.052	.032	.080	.199**	1.000	.214**	-.022	.059	.327**	.225**
	Sig. (2-tailed)	.064	.418	.616	.209	.002	.	.001	.729	.354	.000	.000
	N	246	246	246	246	246	246	246	246	246	246	246
Frequency in visiting green/ open spaces	Pearson Correlation	-.042	-.009	.094	.021	-.086	.214**	1.000	.105	.032	.076	.037
	Sig. (2-tailed)	.508	.893	.142	.747	.179	.001	.	.101	.620	.237	.565
	N	246	246	246	246	246	246	246	246	246	246	246
Frequency in visiting post office, bank and other administaration	Pearson Correlation	-.022	.013	.171**	.126*	.008	-.022	.105	1.000	.253**	-.015	.059
	Sig. (2-tailed)	.735	.840	.007	.049	.895	.729	.101	.	.000	.809	.360
	N	246	246	246	246	246	246	246	246	246	246	246
Frequency in going to a library	Pearson Correlation	-.068	.036	.107	.199**	.044	.059	.032	.253**	1.000	.111	.052
	Sig. (2-tailed)	.291	.577	.093	.002	.491	.354	.620	.000	.	.083	.412
	N	246	246	246	246	246	246	246	246	246	246	246
Frequency in going to cinema and theatre	Pearson Correlation	-.340**	.272**	-.080	.217**	.087	.327**	.076	-.015	.111	1.000	.408**
	Sig. (2-tailed)	.000	.000	.212	.001	.175	.000	.237	.809	.083	.	.000
	N	246	246	246	246	246	246	246	246	246	246	246
Frequency in going to restaurants, pubs, cafes	Pearson Correlation	-.281**	.179**	.048	.138*	.014	.225**	.037	.059	.052	.408**	1.000
	Sig. (2-tailed)	.000	.005	.456	.031	.823	.000	.565	.360	.412	.000	.
	N	246	246	246	246	246	246	246	246	246	246	246

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5-62: Pearson correlation for the variables: type of neighbourhood and 10 variables on frequencies in attending facilities

From the table above, we can conclude that there are statistically significant correlations between the type of neighbourhood on one side, and frequency in going to the city centre, frequency in daily shopping, frequency in going to the cinema and theatre and, frequency in going to the restaurants, pubs and cafés on the other side. Therefore, these 4 variables are included in testing the following research question.

Question 7: Is there a difference in frequency of going to the city centre, in daily shopping, in going to the cinema and theatre and in going to the restaurants, pubs and cafés between the West End and Bearsden?

For testing the relationship between the type of neighbourhood as a categorical independent variable and 4 continuous dependent variables (measured by the Likert type of scale with ranks 1 to 5, where 1 stands for the lowest frequency and 5 for the highest frequency), we are going to perform One-way MANOVA (Multivariate analysis of variance).

Descriptive Statistics

	Neighbourhood	Mean	Std. Deviation	N
Frequency in going to the city centre	Urban, West End	3.71	.85	128
	Suburban, Bearsden	3.47	1.00	118
	Total	3.59	.93	246
Frequency in daily shopping	Urban, West End	3.99	1.18	128
	Suburban, Bearsden	3.52	1.25	118
	Total	3.76	1.23	246
Frequency in going to cinema and theatre	Urban, West End	2.75	.87	128
	Suburban, Bearsden	2.17	.73	118
	Total	2.47	.86	246
Frequency in going to restaurants, pubs, cafes	Urban, West End	3.36	.86	128
	Suburban, Bearsden	2.84	.92	118
	Total	3.11	.93	246

According to the *Descriptive Statistics* table, since we have more than 30 subjects in each cell (N=246: 128 (in the West End); 118 (in Bearsden)) any violations on normality or equality of variance that may exist are not going to matter too much.

Box's Test of Equality of Covariance Matrices[a]

Box's M	11.157
F	1.096
df1	10
df2	280364.7
Sig.	.361

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept+NID

The output box labelled *Box's Test of Equality of Covariance Matrices* tells us if our data violates the assumption of homogeneity of variance-covariance matrices. Since *Box's M Sig.* value in this table (.361) is larger than .001, this means we have not violated this assumption.

Multivariate Tests[c]

Effect		Value	F	Hypothesis df	Error df	Sig.	Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	Pillai's Trace	.974	2259.534[b]	4.000	241.000	.000	.974	9038.135	1.000
	Wilks' Lambda	.026	2259.534[b]	4.000	241.000	.000	.974	9038.135	1.000
	Hotelling's Trace	37.503	2259.534[b]	4.000	241.000	.000	.974	9038.135	1.000
	Roy's Largest Root	37.503	2259.534[b]	4.000	241.000	.000	.974	9038.135	1.000
NID	Pillai's Trace	.184	13.552[b]	4.000	241.000	.000	.184	54.206	1.000
	Wilks' Lambda	.816	13.552[b]	4.000	241.000	.000	.184	54.206	1.000
	Hotelling's Trace	.225	13.552[b]	4.000	241.000	.000	.184	54.206	1.000
	Roy's Largest Root	.225	13.552[b]	4.000	241.000	.000	.184	54.206	1.000

a. Computed using alpha = .05

b. Exact statistic

c. Design: Intercept+NID

Table 5-63: One- way MANOVA in investigating differences between urban and suburban neighbourhoods in their residents' frequency in attending certain facilities

Multivariate tests table indicates whether there are statistically significant differences among the groups on a linear combination of the dependent variables. Between a numbers of statistics shown in this table, one of the most commonly reported statistics is *Wilks' Lambda*. We are looking for *Wilks' Lambda* value for NID (our independent grouping variable), and this value is .82, with associated *Sig.* value .00. Since significance value in this case is less than .05, we conclude that there is a statistically significant difference between residents of urban and suburban type of neighbourhood in their frequency of attending certain facilities.

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Eta Squared	Noncent. Parameter	Observed Power[a]
Corrected Model	Frequency in going to the city centre	3.680[b]	1	3.680	4.283	.040	.017	4.283	.540
	Frequency in daily shopping	13.867[c]	1	13.867	9.439	.002	.037	9.439	.864
	Frequency in going to cinema and theatre	20.691[d]	1	20.691	31.830	.000	.115	31.830	1.000
	Frequency in going to restaurants, pubs, cafes	16.627[e]	1	16.627	20.976	.000	.079	20.976	.995
Intercept	Frequency in going to the city centre	3162.624	1	3162.624	3680.467	.000	.938	3680.467	1.000
	Frequency in daily shopping	3462.078	1	3462.078	2356.612	.000	.906	2356.612	1.000
	Frequency in going to cinema and theatre	1485.926	1	1485.926	2285.894	.000	.904	2285.894	1.000
	Frequency in going to restaurants, pubs, cafes	2358.904	1	2358.904	2975.928	.000	.924	2975.928	1.000
NID	Frequency in going to the city centre	3.680	1	3.680	4.283	.040	.017	4.283	.540
	Frequency in daily shopping	13.867	1	13.867	9.439	.002	.037	9.439	.864
	Frequency in going to cinema and theatre	20.691	1	20.691	31.830	.000	.115	31.830	1.000
	Frequency in going to restaurants, pubs, cafes	16.627	1	16.627	20.976	.000	.079	20.976	.995
Error	Frequency in going to the city centre	209.669	244	.859					
	Frequency in daily shopping	358.458	244	1.469					
	Frequency in going to cinema and theatre	158.610	244	.650					
	Frequency in going to restaurants, pubs, cafes	193.409	244	.793					
Total	Frequency in going to the city centre	3390.000	246						
	Frequency in daily shopping	3858.000	246						
	Frequency in going to cinema and theatre	1682.000	246						
	Frequency in going to restaurants, pubs, cafes	2589.000	246						
Corrected Total	Frequency in going to the city centre	213.350	245						
	Frequency in daily shopping	372.325	245						
	Frequency in going to cinema and theatre	179.301	245						
	Frequency in going to restaurants, pubs, cafes	210.037	245						

a. Computed using alpha = .05

b. R Squared = .017 (Adjusted R Squared = .013)

c. R Squared = .037 (Adjusted R Squared = .033)

d. R Squared = .115 (Adjusted R Squared = .112)

e. R Squared = .079 (Adjusted R Squared = .075)

As we have obtained a significant result on multvariate test of significance, now we are trying to further investigate whether the West End and Bearsden differ on all the dependent variables or just some of them. This information is provided in the *Tests of Between-Subjects Effects* box, but first we have to apply *Bonferroni adjustment* in order to reduce the chance of a Type one error (or finding a significant result when in

fact there is not really one). *Bonferroni adjustment* is achieved when we divide the original alpha level (.05) by the number of analyses we intend to do, and that is in this case 4. Therefore we achieve a new alpha level (.0125). We shall only consider our results to be significant if the probability value (*Sig.*) is less than .0125.

In this study, the significant difference between the West End and Bearsden was achieved in all dependent variables but in frequency of going to the city centre, because this variable's corresponding *Sig.* value was .04. The importance of impact of type of neighbourhood on frequency of daily shopping, frequency of going to the cinema and theatre, and frequency in going to restaurants, pubs and cafés can be evaluated using the *Eta Squared* value, which can be found in *Tests of Between-Subjects Effects* box. When interpreting eta squared value, according to Cohen (1988), we can observe that there is a large effect for frequency in going to the cinema and theatre (.115); a medium effect for frequency in going to the restaurants, pubs, and cafés (.079); and a small effect for frequency in daily shopping (.037).

Estimated Marginal Means

Neighbourhood

Dependent Variable	Neighbourhood	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Frequency in going to the city centre	Urban, West End	3.711	.082	3.550	3.872
	Suburban, Bearsden	3.466	.085	3.298	3.634
Frequency in daily shopping	Urban, West End	3.992	.107	3.781	4.203
	Suburban, Bearsden	3.517	.112	3.297	3.737
Frequency in going to cinema and theatre	Urban, West End	2.750	.071	2.610	2.890
	Suburban, Bearsden	2.169	.074	2.023	2.316
Frequency in going to restaurants, pubs, cafes	Urban, West End	3.359	.079	3.204	3.514
	Suburban, Bearsden	2.839	.082	2.678	3.000

Although we know that urban and suburban neighbourhoods differ in terms of their residents' frequency in daily shopping, frequency in going to the cinema and theatre and, frequency in going to the restaurants, pubs, and cafés, we do not know which neighbourhood achieved higher scores for these three variables. We can find that information in the *Estimated Marginal Means* table. By observing this output we can conclude that, regarding all three dependent variables, it was the West End (urban neighbourhood) that achieved higher scores than Bearsden (suburban neighbourhood).

Question 8: Is there a relationship between the neighbourhood type and the importance of having a private garden?

For testing this relationship, we shall include the type of neighbourhood as a categorical independent variable and the importance of having a private garden as a continuous dependent variable measured by the Likert type of scale (1 to 5, where 1=strongly disagree and 5=strongly agree). Statistical test, which is applied, is the T-test.

Group Statistics

	Neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Private garden-very important	Urban, West End	128	3.30	1.26	.11
	Suburban, Bearsden	118	4.51	.72	6.67E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Private garden-very important	Equal variances assumed	63.247	.000	-9.158	244	.000	-1.21	.13	-1.47	-.95
	Equal variances not assumed			-9.347	206.046	.000	-1.21	.13	-1.47	-.96

Table 5-64: Independent samples T-test for difference in mean scores of private garden importance between the West End and Bearsden

In Levine's Test for the equality of variances, the *Sig.* value (.00) is less than .05, which means that equal variances are not assumed. However, T-test allows us to analyse the *Sig. (2-tailed)* value for equal variances not assumed. As this value is .00 and that is less than .05, we can conclude that there is a statistically significant difference in importance of having a private garden between the West End and Bearsden. In the *Group Statistics* table, mean values of private garden importance show that for suburban residents, private garden is more important than for urban residents. However, as private garden is much more common in suburban neighbourhood than in urban neighbourhood, the relationship between possession of a private garden and perceived importance of private garden should be explored.

Question 9: Is there a relationship between possession of a private garden and perceived importance of private garden?

In testing this hypothesis, we will employ variables: home having a private garden, which is a categorical independent variable of 2 categories (1=yes; 2=no), and the importance of having a private garden which is taken as a categorical dependent variable of 2 categories (1=less than agree; 2=agree or strongly agree). Because of the nature of variables involved in testing this relationship, we are going to use the

Chi-Square Test. The Null-Hypothesis is that there is no relationship between possession of a private garden and perceived importance of a private garden.

Home having a private garden yes/no * Private garden-very important Crosstabulation

			Private garden-very important		
			Less than agree	Agree to strongly agree	Total
Home having a private garden yes/no	Yes	Count	15	127	142
		Expected Count	45.0	97.0	142.0
		% within Home having a private garden yes/no	10.6%	89.4%	100.0%
		% within Private garden-very important	19.2%	75.6%	57.7%
		% of Total	6.1%	51.6%	57.7%
	No	Count	63	41	104
		Expected Count	33.0	71.0	104.0
		% within Home having a private garden yes/no	60.6%	39.4%	100.0%
		% within Private garden-very important	80.8%	24.4%	42.3%
		% of Total	25.6%	16.7%	42.3%
Total		Count	78	168	246
		Expected Count	78.0	168.0	246.0
		% within Home having a private garden yes/no	31.7%	68.3%	100.0%
		% within Private garden-very important	100.0%	100.0%	100.0%
		% of Total	31.7%	68.3%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	69.347[b]	1	.000		
Continuity Correction[a]	67.057	1	.000		
Likelihood Ratio	72.049	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	69.065	1	.000		
N of Valid Cases	246				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 32.98.

Table 5-65: Chi-Square Test for exploring the relationship between having a private garden and perceived importance of a private garden

If we look under footnote *b* of *Chi-Square Test* Table, we can see that 0% of cells have expected count less than 5, which means that we have not violated the assumption of this test on minimum expected cell frequency. Since we have 2x2 table, we are observing the *Asymp. Sig.(2-sided)* value corresponding to the *Continuity Correction* line. As this value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in perception on importance of a private garden between residents who already have a private garden and residents who don't have a private garden.

Question 10: Is there a difference between urban and suburban neighbourhoods in terms of their residents' perception on pollution in the neighbourhood?

For testing this relationship, we shall employ the type of neighbourhood as a categorical independent variable and perceived pollution problems in the residential neighbourhood as a categorical dependent variable with 2 categories. In order to test

the relationship among these variable, we shall use the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the type of neighbourhood and perceived pollution in the neighbourhood.

Neighbourhood * Does your neihbourhood have pollution problems Crosstabulation

			Does your neihbourhood have pollution problems		
			Yes	No	Total
Neighbourhood	Urban, West End	Count	36	92	128
		Expected Count	31.7	96.3	128.0
		% within Neighbourhood	28.1%	71.9%	100.0%
		% within Does your neihbourhood have pollution problems	59.0%	49.7%	52.0%
		% of Total	14.6%	37.4%	52.0%
	Suburban, Bearsden	Count	25	93	118
		Expected Count	29.3	88.7	118.0
		% within Neighbourhood	21.2%	78.8%	100.0%
		% within Does your neihbourhood have pollution problems	41.0%	50.3%	48.0%
		% of Total	10.2%	37.8%	48.0%
Total		Count	61	185	246
		Expected Count	61.0	185.0	246.0
		% within Neighbourhood	24.8%	75.2%	100.0%
		% within Does your neihbourhood have pollution problems	100.0%	100.0%	100.0%
		% of Total	24.8%	75.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.585[b]	1	.208		
Continuity Correction[a]	1.235	1	.266		
Likelihood Ratio	1.593	1	.207		
Fisher's Exact Test				.238	.133
Linear-by-Linear Association	1.579	1	.209		
N of Valid Cases	246				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 29.26.

Table 5-66: Chi-Square Test for exploring the relationship between the type of neighbourhood and perceived pollution in the neighbourhood

If we look under footnote *b* of *Chi-Square Test* Table, we can see that 0% of cells have expected count less than 5, which means that we have not violated the assumption of this test on minimum expected cell frequency. Since we have 2x2 table, we are observing the *Asymp. Sig.(2-sided)* value corresponding to the *Continuity Correction* line. As this value (.27) is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in perception of pollution in the residential neighbourhood between the residents of urban neighbourhood (the West End) and those of suburban neighbourhood (Bearsden).

5.3 Physical Planning Issues

The third dimension of Residential Preferences has to do with what could be termed as the planned elements of residential neighbourhood. In this case, physical planning issues refer to neighbourhoods of urban or suburban type, which are the case study areas for this research.

Physical planning issues are represented by the dependent variables: commuting distances and physical mobility of adults and children, private car dependence, and accessibility of facilities. Like in the previous section, here also, the type of neighbourhood will be used as a categorical independent variable of the statistical analyses regarding physical planning issues.

Question 1: Do residents of urban neighbourhood (the West End) travel shorter distances to place of their work or daily activity in comparison to residents of suburban neighbourhood (Bearsden)?

In order of testing this hypothesis, we shall employ the type of neighbourhood as a categorical independent variable of 2 categories (1=Urban neighbourhood, the West End, and 2=Suburban neighbourhood, Bearsden), and distance to place of work or daily activity as a categorical dependent variable of 2 categories (1=up to 1 mile (or 40 min of walk), and 2=anything more than 1 mile). Because of the type of variables (both are of categorical type) we shall apply the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the type of neighbourhood and the distance to place of work or daily activity of its residents.

Neighbourhood * Distance to place of work or daily activity Crosstabulation

			Distance to place of work or daily activity		
			Up to one mile (or 40min of walk)	Anything more than one mile	Total
Neighbourhood	Urban, West End	Count	60	68	128
		Expected Count	45.8	82.2	128.0
		% within Neighbourhood	46.9%	53.1%	100.0%
		% within Distance to place of work or daily activity	68.2%	43.0%	52.0%
		% of Total	24.4%	27.6%	52.0%
	Suburban, Bearsden	Count	28	90	118
		Expected Count	42.2	75.8	118.0
		% within Neighbourhood	23.7%	76.3%	100.0%
		% within Distance to place of work or daily activity	31.8%	57.0%	48.0%
		% of Total	11.4%	36.6%	48.0%
Total		Count	88	158	246
		Expected Count	88.0	158.0	246.0
		% within Neighbourhood	35.8%	64.2%	100.0%
		% within Distance to place of work or daily activity	100.0%	100.0%	100.0%
		% of Total	35.8%	64.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	14.317[b]	1	.000		
Continuity Correction[a]	13.327	1	.000		
Likelihood Ratio	14.574	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	14.259	1	.000		
N of Valid Cases	246				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 42.21.

Table 5-67: Chi-Square Test for exploring the relationship between the type of neighbourhood and distance to place of work or daily activity

Before analysing outputs of the Chi-Square Test, we have to check whether we have met the assumption on minimum expected cell frequency. This has been shown in footnote *b* of Chi-Square Test. Since 0 cells have expected count less than 5, we have not violated the assumption for conducting a Chi-Square test. As we have 2x2 table, we are observing the *Asymp. Sig.(2-sided)* value corresponding to the *Continuity Correction* line. Since this value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in distance to place of work or daily activity between the residents of the West End (urban neighbourhood) and residents of Bearsden (suburban neighbourhood), latter showing a higher proportion of residents spending longer time (more than 40 min) in commuting and travelling longer distances to place of their work or daily activity.

Question 2: Is there a relationship between the type of neighbourhood and everyday most common means of transportation?

For testing this relationship, we shall include the type of neighbourhood as a categorical independent variable and resident's everyday most common means of transportation as a categorical dependent variable of 5 categories (1=private car, 2=underground/train, 3=bus, 4=walk, 5=other means of transportation). Statistical test, which we are going to apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the type of neighbourhood and everyday most common means of transportation of its residents.

Neighbourhood * Everyday most common means of transportation Crosstabulation

			Everyday most common means of transportation					
			Private car	Underground/ Train	Bus	Walk	Other (bicycle, motorcycle, taxi, plane...)	Total
Neighbourhood	Urban, West End	Count	48	22	7	47	4	128
		Expected Count	74.4	16.7	6.8	27.1	3.1	128.0
		% within Neighbourhood	37.5%	17.2%	5.5%	36.7%	3.1%	100.0%
		% within Everyday most common means of transportation	33.6%	68.8%	53.8%	90.4%	66.7%	52.0%
		% of Total	19.5%	8.9%	2.8%	19.1%	1.6%	52.0%
	Suburban, Bearsden	Count	95	10	6	5	2	118
		Expected Count	68.6	15.3	6.2	24.9	2.9	118.0
		% within Neighbourhood	80.5%	8.5%	5.1%	4.2%	1.7%	100.0%
		% within Everyday most common means of transportation	66.4%	31.3%	46.2%	9.6%	33.3%	48.0%
		% of Total	38.6%	4.1%	2.4%	2.0%	.8%	48.0%
Total		Count	143	32	13	52	6	246
		Expected Count	143.0	32.0	13.0	52.0	6.0	246.0
		% within Neighbourhood	58.1%	13.0%	5.3%	21.1%	2.4%	100.0%
		% within Everyday most common means of transportation	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	58.1%	13.0%	5.3%	21.1%	2.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	54.297[a]	4	.000
Likelihood Ratio	59.867	4	.000
Linear-by-Linear Association	45.693	1	.000
N of Valid Cases	246		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.88.

Table 5-68: Chi-Square Test for exploring the relationship between the type of neighbourhood and everyday most common means of transportation of its residents

Regarding the assumption on minimum expected cell frequency, if we look under the footnote *a* of the Chi-Square Test table we can notice that 20% of cells have expected count less than 5, which still meets the requirements of the test. The main value out of this analysis that we are interested in is *Pearson Chi-Square* value together with its associated *Asymp. Sig. (2-sided)* value. As the latter value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in most common everyday means of transportation between the residents of the West End and Bearsden. Regarding the most common daily means of transportation, the difference between the West End and Bearsden appears to be in the use of a private car, which dominates in the suburban neighbourhood, and walk, which is much more common in the urban neighbourhood. To find out more about physical mobility of residents in both types of neighbourhoods further analyses regarding frequency in use of certain modes of transportation will be conducted.

Question 3: Do residents of urban neighbourhood (the West End) walk more frequently than residents of suburban neighbourhood (Bearsden)?

Regarding this question, we shall use the type of neighbourhood as a categorical independent variable, and frequency of walks as a continuous dependent variable

measured by a Likert type of scale (1=never, 2=less than once a month but once a year or more times a year, 3=less than once a week but once a month or more times a month, 4=less than once a day but once of week or more times a week and, 5=once a day or more frequently). Statistical test, which we are going to apply, is the T-test.

Group Statistics

	Neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Frequency of walks	Urban, West End	128	4.56	.91	8.06E-02
	Suburban, Bearsden	118	4.03	1.09	9.99E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Frequency of walks	Equal variances assumed	2.848	.093	4.147	244	.000	.53	.13	.28	.78
	Equal variances not assumed			4.118	229.280	.000	.53	.13	.28	.78

Table 5-69: Independent samples T-test for difference in mean scores of frequency of walks between residents of the West End and Bearsden

In the Levine's Test for Equality of Variances, the *Sig.* value (.093) is larger than .05, which means that the assumption of equal variances has not been violated. Therefore we shall look under the *Sig. (2-tailed)* value for the equal variances assumed and since this value (.00) is less than .05, we conclude that there is a statistically significant difference in mean scores of frequency of walks between residents from the West End and Bearsden. If we observe mean values from the *Group Statistics Table*, we can indeed conclude that in the urban neighbourhood (West End) people are walking more frequently than in suburban neighbourhood (Bearsden). However, we shall calculate the effect size of this result according to Cohen's (1988) formula for eta squared (see Equation 5-1). The value we obtain is .07, and that stands for a moderate effect size for difference between residents in the West End and Bearsden in terms of their frequency of walks.

Question 4: Do residents of urban neighbourhood (the West End) use public transport system more frequently than residents of suburban neighbourhood (Bearsden)?

Regarding this question, we will use the type of neighbourhood as a categorical independent variable and, frequency of using a public transport system as a continuous dependent variable measured by a Likert type of scale, same as the one in the previous research question. Statistical test, which will be applied, is the T-test.

Group Statistics

	Neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Frequency of using a public transport	Urban, West End	128	3.57	1.08	9.59E-02
	Suburban, Bearsden	118	2.69	1.12	.10

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Frequency of using a public transport	Equal variances assumed	.545	.461	6.280	244	.000	.88	.14	.61	1.16
	Equal variances not assumed			6.271	240.761	.000	.88	.14	.61	1.16

Table 5-70: Independent samples T-test for difference in mean scores of frequency of using a public transport system between residents of the West End and Bearsden

Since the *Sig.* value (.461) in Levine's Test for the Equality of Variances is .05, it means that the equal variances are assumed. Knowing this, we can check on the *Sig. (2-tailed)* value for the equal variances assumed. As this value is .00, and that is less than .05, we can conclude that there is a statistically significant difference in the mean scores on frequency of using a public transport system between residents from the West End and Bearsden. *Group Statistics Table* shows that mean sores of frequency of use a public transport system is higher in the West End than in Bearsden, but in order to evaluate the magnitude of difference between these two neighbourhoods regarding the frequency of public transport system use, we will calculate eta-squared value (see Equation 5-1). Since calculated eta-squared value is .14, we conclude that there is a large effect of the neighbourhood type influencing its resident's frequency of using a public transport system.

Question 5: Do residents of suburban neighbourhood (Bearsden) use a private car more frequently than residents of urban neighbourhood (the West End)?

In order of testing this hypothesis, we shall employ the type of neighbourhood as a categorical independent variable and frequency of using a private car as a continuous dependent variable measured by the same Likert type of scale as in the previous two research questions. Statistical test, which we are going to apply for testing this relationship, is the T-test.

Group Statistics

	Neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Frequency of using a private car	Urban, West End	128	3.70	1.48	.13
	Suburban, Bearsden	118	4.51	.97	8.91E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Frequency of using a private car	Equal variances assumed	32.915	.000	-5.016	244	.000	-.81	.16	-1.12	-.49
	Equal variances not assumed			-5.098	220.866	.000	-.81	.16	-1.12	-.49

Table 5-71: Independent samples T-test for difference in mean scores of frequency of using a private car between residents of the West End and Bearsden

Although equal variances are not assumed (*Sig.* value (.00) in Levine's Test is less than .05), we can check for *Sig. (2-tailed)* value for equal variances not assumed. As this value is .00, which is less than .05, we can conclude that there is a statistically significant difference in mean scores on frequency of using a private car between residents of the West End and Bearsden. Mean scores in *Group Statistics Table* show that frequency of using a private car is higher in Bearsden (suburban) than in the West End (urban) neighbourhood. In order to evaluate the magnitude of difference between these two neighbourhoods regarding the frequency of using a private car, we shall calculate eta-squared (see Equation 5-1). Calculated eta-squared is .09, which stands for a moderate effect of the neighbourhood type influencing frequency of using a private car by its residents.

Question 6: Is there a relationship between the type of neighbourhood and satisfaction with the public transport system in the residential neighbourhood?

For testing this relationship, we shall use the type of neighbourhood as a categorical independent variable and satisfaction with the public transport system in the residential neighbourhood as a continuous dependent variable measured by the Likert type of scale (with ranks from 1 to 5, where 1=strongly disagree, 2=disagree, 3=neutral/undecided, 4=agree and, 5=strongly agree). Because of the types of variables used for testing this relationship, we are going to apply the T-test.

Group Statistics

	Neighbourhood	N	Mean	Std. Deviation	Std. Error Mean
Very well organised public transport in the neighbourhood	Urban, West End	128	3.55	.99	8.72E-02
	Suburban, Bearsden	118	2.74	.88	8.11E-02

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Very well organised public transport in the neighbourhood	Equal variances assumed	2.378	.124	6.832	244	.000	.82	.12	.58	1.05
	Equal variances not assumed			6.863	243.763	.000	.82	.12	.58	1.05

Table 5-72: Independent samples T-test for difference in mean scores of satisfaction with the public transport system organisation in the residential neighbourhood between the West End and Bearsden

In Levine's Test for Equality of Variances, the *Sig.* value is .124, which is above .05. Therefore, equal variances are assumed and we are looking for the corresponding *Sig. (2-tailed)* value. As this value is .00 and that is less than .05, we can conclude that there is a statistically significant difference in mean scores of satisfaction with the public transport system organisation in the residential neighbourhood between the West End and Bearsden. When observing mean scores from the *Group Statistics Table*, we can notice that people in the West End (urban neighbourhood) are more satisfied with the public transport system organisation than people of Bearsden. For evaluating the magnitude of difference between these two neighbourhoods regarding satisfaction with the public transport system organisation, we shall calculate eta-squared value (see Equation 5-1). Calculated eta-squared is .16, which stands for the large effect size. Expressed as a percentage, 16% of the variance in satisfaction with the public transport system organisation in the neighbourhood is explained by the neighbourhood type.

Question 7: Is there a relationship between the satisfaction with the public transport system organisation in the residential neighbourhood, frequency of using a public transport system and, frequency of using a private car?

For testing the relationship between these three continuous variables (satisfaction with the public transport system organisation in the residential neighbourhood, frequency of using a public transport system and frequency of using a private car) we are going to apply Pearson Correlation.

Correlations

		Very well organised public transport in the neighbourhood	Frequency of using a public transport	Frequency of using a private car
Very well organised public transport in the neighbourhood	Pearson Correlation	1.000	.300**	-.193**
	Sig. (2-tailed)	.	.000	.002
	N	246	246	246
Frequency of using a public transport	Pearson Correlation	.300**	1.000	-.387**
	Sig. (2-tailed)	.000	.	.000
	N	246	246	246
Frequency of using a private car	Pearson Correlation	-.193**	-.387**	1.000
	Sig. (2-tailed)	.002	.000	.
	N	246	246	246

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5-73: Pearson Correlation between variables: satisfaction with the public transport system organisation in the residential neighbourhood, frequency of using a public transport system and, frequency of using a private car

When interpreting Pearson Correlation output, we have to bear in mind the direction and the strength of the relationship between variables. *Correlations Table* shows that there is a medium positive correlation between the satisfaction with public transport system organisation in the residential neighbourhood and frequency of using a public transport system (r=.3). On the other hand, there is a small negative correlation between satisfaction with the public transport system organisation in the residential neighbourhood and frequency of using a private car (-.19) and, medium negative correlation between frequency of using a public transport and frequency of using a private car (-.39).

Question 8: Do urban and suburban neighbourhoods differ in terms of number of private cars per household?

In order to test whether there is a difference between the two neighbourhoods in terms of car ownership, we shall include the type of neighbourhood as a categorical independent variable and number of private cars in the household as a categorical dependent variable of 3 categories (1=no cars in the household, 2=one car, 3=two or more cars). Statistical test, which will be applied, is the Chi-Square Test. The Null-Hypothesis is that there is no difference between the West End and Bearsden in terms of number of private cars per household.

Neighbourhood * Number of private cars in the household Crosstabulation

			Number of private cars in the household			
			None	One	Two or more	Total
Neighbourhood	Urban, West End	Count	32	72	24	128
		Expected Count	21.3	61.4	45.3	128.0
		% within Neighbourhood	25.0%	56.3%	18.8%	100.0%
		% within Number of private cars in the household	78.0%	61.0%	27.6%	52.0%
		% of Total	13.0%	29.3%	9.8%	52.0%
	Suburban, Bearsden	Count	9	46	63	118
		Expected Count	19.7	56.6	41.7	118.0
		% within Neighbourhood	7.6%	39.0%	53.4%	100.0%
		% within Number of private cars in the household	22.0%	39.0%	72.4%	48.0%
		% of Total	3.7%	18.7%	25.6%	48.0%
Total		Count	41	118	87	246
		Expected Count	41.0	118.0	87.0	246.0
		% within Neighbourhood	16.7%	48.0%	35.4%	100.0%
		% within Number of private cars in the household	100.0%	100.0%	100.0%	100.0%
		% of Total	16.7%	48.0%	35.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.767[a]	2	.000
Likelihood Ratio	37.173	2	.000
Linear-by-Linear Association	34.083	1	.000
N of Valid Cases	246		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.67.

Table 5-74: Chi-Square Test for exploring the relationship between the type of neighbourhood and number of private cars in the household

Regarding the assumption on minimum expected cell frequency, if we look under the footnote *a* of the Chi-Square Test table we can notice that 0% of cells have expected count less than 5, which meets the requirements of the test. The main value out of this analysis that we are interested in is *Pearson Chi-Square* value together with its associated *Asymp. Sig. (2-sided)* value. As the latter value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference of number of private cars in the household between the West End (urban neighbourhood) and Bearsden (suburban neighbourhood). Further observations of results in the *Crosstabulation* between the two variables show that in the urban neighbourhood there is a higher percentage of households without private cars, while in the suburban neighbourhood there is a higher percentage of households with two or more cars. Households with one car are more common in urban than in suburban neighbourhood.

Question 9: Would private car users from urban neighbourhood (the West End) find it easier to manage without a car than private car users from suburban neighbourhood (Bearsden)?

In order to test this hypothesis, we are going to employ the type of neighbourhood as a categorical independent variable and possibility to manage without a car as a categorical dependent variable with two categories (1=yes, 2=no). Statistical test, which we shall apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the type of neighbourhood and possibility of those respondents whose household already has a private car to manage without one. In testing this relationship, we are going to use a smaller sample (205) than usual because the new sample consists of only those respondents who have a private car in the household.

Neighbourhood * Possibility to manage without a car Crosstabulation

			Possibility to manage without a car		
			Yes	No	Total
Neighbourhood	Urban, West End	Count	34	62	96
		Expected Count	25.8	70.2	96.0
		% within Neighbourhood	35.4%	64.6%	100.0%
		% within Possibility to manage without a car	61.8%	41.3%	46.8%
		% of Total	16.6%	30.2%	46.8%
	Suburban, Bearsden	Count	21	88	109
		Expected Count	29.2	79.8	109.0
		% within Neighbourhood	19.3%	80.7%	100.0%
		% within Possibility to manage without a car	38.2%	58.7%	53.2%
		% of Total	10.2%	42.9%	53.2%
Total		Count	55	150	205
		Expected Count	55.0	150.0	205.0
		% within Neighbourhood	26.8%	73.2%	100.0%
		% within Possibility to manage without a car	100.0%	100.0%	100.0%
		% of Total	26.8%	73.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.782[b]	1	.009		
Continuity Correction[a]	5.985	1	.014		
Likelihood Ratio	6.807	1	.009		
Fisher's Exact Test				.011	.007
Linear-by-Linear Association	6.749	1	.009		
N of Valid Cases	205				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 25.76.

Table 5-75: Chi-Square Test for exploring the relationship between the type of neighbourhood and possibility to manage without a car

As we have 2x2 table, first we are looking in footnote *b* of Chi-Square Test for checking on the assumption on minimum expected cell frequency. Since 0 cells have expected count less than 5, we have not violated this assumption for conducting the Chi-Square Test. When we proceed to check on *Continuity Correction* value and its associated *Asymp. Sig. (2-sided)* value, as the letter value (.014) is less than .05, we

shall reject the Null-Hypothesis and conclude that there is a statistically significant difference in possibility to manage without a private car between car users from the West End (urban neighbourhood) and those from Bearsden (suburban neighbourhood). The results from *Crosstabulation* show that car users from the West End find it easier to manage without a private car than car users from Bearsden.

Question 10: Is there a relationship between the type of neighbourhood and modes of transportation its residents use to access Glasgow city centre?

This question is first in a row regarding modes of transportation that people of the two neighbourhoods use in order to access certain facilities. For testing this particular relationship, we shall include the type of neighbourhood as a categorical independent variable and transportation to the city centre as a categorical dependent variable of 2 categories (1=private car, and 2=public transport, walk and other means which are not a private car). The Null-Hypothesis is that there is no relationship between the type of neighbourhood and means of transportation its residents use to access Glasgow city centre. The sample size for testing this relationship is 244 because 2 respondents said they didn't go to Glasgow city centre at all.

Neighbourhood * Transportation to the city centre Crosstabulation

			Transportation to the city centre		
			Private car	Public transport, walk and other means which are not a car	Total
Neighbourhood	Urban, West End	Count	25	102	127
		Expected Count	47.9	79.1	127.0
		% within Neighbourhood	19.7%	80.3%	100.0%
		% within Transportation to the city centre	27.2%	67.1%	52.0%
		% of Total	10.2%	41.8%	52.0%
	Suburban, Bearsden	Count	67	50	117
		Expected Count	44.1	72.9	117.0
		% within Neighbourhood	57.3%	42.7%	100.0%
		% within Transportation to the city centre	72.8%	32.9%	48.0%
		% of Total	27.5%	20.5%	48.0%
Total		Count	92	152	244
		Expected Count	92.0	152.0	244.0
		% within Neighbourhood	37.7%	62.3%	100.0%
		% within Transportation to the city centre	100.0%	100.0%	100.0%
		% of Total	37.7%	62.3%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	36.615[b]	1	.000		
Continuity Correction[a]	35.033	1	.000		
Likelihood Ratio	37.646	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	36.465	1	.000		
N of Valid Cases	244				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 44.11.

Table 5-76: Chi-Square Test for exploring the relationship between the type of neighbourhood and transportation to Glasgow's city centre

Since we met the assumption on minimum expected cell frequency (see footnote *b* of *Chi-Square Test Table*), we can look for the *Continuity Correction* value and its associated *Asymp. Sig. (2-sided)* value. As this latter value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in modes of transport used to access Glasgow city centre between residents of the West End and residents of Bearsden.

Question 11: Is there a relationship between the type of neighbourhood and modes of transportation its residents use to access a daily shopping facilities?

For testing this relationship, we shall use the type of neighbourhood as a categorical independent variable and transportation to daily shopping facilities as a categorical dependent variable of 2 categories (1=private car, 2=public transport, walk and other means which are not a private car). The Null-Hypothesis is that there is no relationship between the type of neighbourhood and means of transportation its residents use to access daily shopping facilities. The sample size in testing this relationship is 215 because out of 246 respondents, which is the original sample size, 31 respondents said they didn't use daily shopping facilities at all.

Neighbourhood * Transportation to daily shopping Crosstabulation

			Transportation to daily shopping		
			Private car	Public transport, walk and other means which are not a car	Total
Neighbourhood	Urban, West End	Count	17	98	115
		Expected Count	42.3	72.7	115.0
		% within Neighbourhood	14.8%	85.2%	100.0%
		% within Transportation to daily shopping	21.5%	72.1%	53.5%
		% of Total	7.9%	45.6%	53.5%
	Suburban, Bearsden	Count	62	38	100
		Expected Count	36.7	63.3	100.0
		% within Neighbourhood	62.0%	38.0%	100.0%
		% within Transportation to daily shopping	78.5%	27.9%	46.5%
		% of Total	28.8%	17.7%	46.5%
Total		Count	79	136	215
		Expected Count	79.0	136.0	215.0
		% within Neighbourhood	36.7%	63.3%	100.0%
		% within Transportation to daily shopping	100.0%	100.0%	100.0%
		% of Total	36.7%	63.3%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	51.307[b]	1	.000		
Continuity Correction[a]	49.295	1	.000		
Likelihood Ratio	53.595	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	51.068	1	.000		
N of Valid Cases	215				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 36.74.

Table 5-77: Chi-Square Test for exploring the relationship between the type of neighbourhood and modes of transportation to access daily shopping facilities

Since we met the assumption on minimum expected cell frequency (see footnote *b* of *Chi-Square Test Table*), we can look for the *Continuity Correction* value and its associated *Asymp. Sig. (2-sided)* value. As this latter value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in modes of transport used to access daily shopping facilities between residents of the West End and residents of Bearsden.

Question 12: Is there a relationship between the type of neighbourhood and modes of transportation its residents use to access the weekly shopping facilities?

In order to test this relationship, we shall employ the type of neighbourhood as a categorical independent variable and transportation to weekly shopping facilities as a categorical dependent variable of 2 categories (1=private car, 2=public transport, walk and other means which are not a private car). The Null-Hypothesis is that there is no relationship between the type of neighbourhood and means of transportation its residents use to access weekly shopping facilities. The sample size in testing this relationship is 217 because 29 out of 246 respondents said they didn't use weekly shopping facilities at all.

Neighbourhood * Transportation to weekly shopping Crosstabulation

			Transportation to weekly shopping		
			Private car	Public transport, walk and other means which are not a car	Total
Neighbourhood	Urban, West End	Count	77	39	116
		Expected Count	90.9	25.1	116.0
		% within Neighbourhood	66.4%	33.6%	100.0%
		% within Transportation to weekly shopping	45.3%	83.0%	53.5%
		% of Total	35.5%	18.0%	53.5%
	Suburban, Bearsden	Count	93	8	101
		Expected Count	79.1	21.9	101.0
		% within Neighbourhood	92.1%	7.9%	100.0%
		% within Transportation to weekly shopping	54.7%	17.0%	46.5%
		% of Total	42.9%	3.7%	46.5%
Total		Count	170	47	217
		Expected Count	170.0	47.0	217.0
		% within Neighbourhood	78.3%	21.7%	100.0%
		% within Transportation to weekly shopping	100.0%	100.0%	100.0%
		% of Total	78.3%	21.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	21.016[b]	1	.000		
Continuity Correction[a]	19.529	1	.000		
Likelihood Ratio	22.741	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	20.919	1	.000		
N of Valid Cases	217				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 21.88.

Table 5-78: Chi-Square Test for exploring the relationship between the type of neighbourhood and modes of transportation to access weekly shopping facilities

Since we met the assumption on minimum expected cell frequency (see footnote *b* of *Chi-Square Test Table*), we can look for the *Continuity Correction* value and its associated *Asymp. Sig. (2-sided)* value. As this latter value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in modes of transport used to access weekly shopping facilities between residents of the West End and residents of Bearsden.

Question 13: Is there a relationship between the type of neighbourhood and modes of transportation its residents use to access the health centre?

For testing this relationship, we shall use the type of neighbourhood as a categorical independent variable and transportation to the health centre as a categorical dependent variable of 2 categories (1=private car, 2=public transport, walk and other means which are not a private car). The Null-Hypothesis is that there is no relationship between the type of neighbourhood and means of transportation its residents use to access the health centre. The sample size in testing this relationship is 164 since 82 respondents said they didn't go to the health centre at all.

Neighbourhood * Transportation to health centre Crosstabulation

			Transportation to health centre		
			Private car	Public transport, walk and other means which are not a car	Total
Neighbourhood	Urban, West End	Count	34	59	93
		Expected Count	45.4	47.6	93.0
		% within Neighbourhood	36.6%	63.4%	100.0%
		% within Transportation to health centre	42.5%	70.2%	56.7%
		% of Total	20.7%	36.0%	56.7%
	Suburban, Bearsden	Count	46	25	71
		Expected Count	34.6	36.4	71.0
		% within Neighbourhood	64.8%	35.2%	100.0%
		% within Transportation to health centre	57.5%	29.8%	43.3%
		% of Total	28.0%	15.2%	43.3%
Total		Count	80	84	164
		Expected Count	80.0	84.0	164.0
		% within Neighbourhood	48.8%	51.2%	100.0%
		% within Transportation to health centre	100.0%	100.0%	100.0%
		% of Total	48.8%	51.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	12.842[b]	1	.000		
Continuity Correction[a]	11.737	1	.001		
Likelihood Ratio	13.011	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	12.763	1	.000		
N of Valid Cases	164				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 34.63.

Table 5-79: Chi-Square Test for exploring the relationship between the type of neighbourhood and modes of transportation to the health centre

Since we met the assumption on minimum expected cell frequency (see footnote *b* of *Chi-Square Test Table*), we can look for the *Continuity Correction* value and its associated *Asymp. Sig. (2-sided)* value. As this latter value (.001) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in modes of transport used to access the health centre between residents of the West End and residents of Bearsden.

Question 14: Is there a relationship between the type of neighbourhood and modes of transportation its residents use to access the sport centre?

To test this relationship, we shall use the type of neighbourhood as a categorical independent variable and transportation to the sport centre as a categorical dependent variable of 2 categories (1=private car, 2=public transport, walk and other means which are not a private car). The Null-Hypothesis is that there is no relationship between the type of neighbourhood and means of transportation its residents use to access the sport centre. The sample size in testing this relationship is 139 because 107 respondents said they didn't go to the sport centre at all.

Neighbourhood * Transportation to sport centre Crosstabulation

			Transportation to sport centre		
			Private car	Public transport, walk and other means which are not a car	Total
Neighbourhood	Urban, West End	Count	43	36	79
		Expected Count	54.6	24.4	79.0
		% within Neighbourhood	54.4%	45.6%	100.0%
		% within Transportation to sport centre	44.8%	83.7%	56.8%
		% of Total	30.9%	25.9%	56.8%
	Suburban, Bearsden	Count	53	7	60
		Expected Count	41.4	18.6	60.0
		% within Neighbourhood	88.3%	11.7%	100.0%
		% within Transportation to sport centre	55.2%	16.3%	43.2%
		% of Total	38.1%	5.0%	43.2%
Total		Count	96	43	139
		Expected Count	96.0	43.0	139.0
		% within Neighbourhood	69.1%	30.9%	100.0%
		% within Transportation to sport centre	100.0%	100.0%	100.0%
		% of Total	69.1%	30.9%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	18.345[b]	1	.000		
Continuity Correction[a]	16.793	1	.000		
Likelihood Ratio	19.842	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	18.213	1	.000		
N of Valid Cases	139				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 18.56.

Table 5-80: Chi-Square Test for exploring the relationship between the type of neighbourhood and modes of transportation to the sport centre

Since we met the assumption on minimum expected cell frequency (see footnote *b* of *Chi-Square Test Table*), we can look for the *Continuity Correction* value and its associated *Asymp. Sig. (2-sided)* value. As this latter value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in modes of transport used to access the sport centre between residents of the West End and residents of Bearsden.

Question 15: Is there a relationship between the type of neighbourhood and modes of transportation its residents use to access the green/open spaces?

In order to test this relationship, we shall employ the type of neighbourhood as a categorical independent variable and transportation to green/open spaces as a categorical dependent variable of 2 categories (1=private car, 2=public transport, walk and other means which are not a private car). The Null-Hypothesis is that there is no relationship between the type of neighbourhood and means of transportation its residents use to access green/open spaces. The sample size in testing this relationship is 230 because 16 respondents said they didn't use green/open spaces at all.

Neighbourhood * Transportation to green/ open spaces Crosstabulation

			Transportation to green/ open spaces		
			Private car	Public transport, walk and other means which are not a car	Total
Neighbourhood	Urban, West End	Count	26	95	121
		Expected Count	56.3	64.7	121.0
		% within Neighbourhood	21.5%	78.5%	100.0%
		% within Transportation to green/ open spaces	24.3%	77.2%	52.6%
		% of Total	11.3%	41.3%	52.6%
	Suburban, Bearsden	Count	81	28	109
		Expected Count	50.7	58.3	109.0
		% within Neighbourhood	74.3%	25.7%	100.0%
		% within Transportation to green/ open spaces	75.7%	22.8%	47.4%
		% of Total	35.2%	12.2%	47.4%
Total		Count	107	123	230
		Expected Count	107.0	123.0	230.0
		% within Neighbourhood	46.5%	53.5%	100.0%
		% within Transportation to green/ open spaces	100.0%	100.0%	100.0%
		% of Total	46.5%	53.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	64.316[b]	1	.000		
Continuity Correction[a]	62.210	1	.000		
Likelihood Ratio	67.600	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	64.036	1	.000		
N of Valid Cases	230				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 50.71.

Table 5-81: Chi-Square Test for exploring the relationship between the type of neighbourhood and modes of transportation to the green/open spaces

Since we met the assumption on minimum expected cell frequency (see footnote *b* of *Chi-Square Test Table*), we can look for the *Continuity Correction* value and its associated *Asymp. Sig. (2-sided)* value. As this latter value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in modes of transport used to access green/open spaces between residents of the West End and residents of Bearsden.

Question 16: Is there a relationship between the type of neighbourhood and modes of transportation its residents use to access post office, bank and other administration services?

To test this relationship, we shall use the type of neighbourhood as a categorical independent variable and transportation to post office, bank and other administration services as a categorical dependent variable of 2 categories (1=private car, 2=public transport, walk and other means which are not a private car). The Null-Hypothesis is that there is no relationship between the type of neighbourhood and means of transportation its residents use to access post office, bank and other administration services. The sample size in testing this relationship is 238 because 8 respondents said they didn't go to the post office, bank and other administration services at all.

Neighbourhood * Transportation to post office, bank and other administration Crosstabulation

			Transportation to post office, bank and other administration		
			Private car	Public transport, walk and other means which are not a car	Total
Neighbourhood	Urban, West End	Count	19	105	124
		Expected Count	44.8	79.2	124.0
		% within Neighbourhood	15.3%	84.7%	100.0%
		% within Transportation to post office, bank and other administration	22.1%	69.1%	52.1%
		% of Total	8.0%	44.1%	52.1%
	Suburban, Bearsden	Count	67	47	114
		Expected Count	41.2	72.8	114.0
		% within Neighbourhood	58.8%	41.2%	100.0%
		% within Transportation to post office, bank and other administration	77.9%	30.9%	47.9%
		% of Total	28.2%	19.7%	47.9%
Total		Count	86	152	238
		Expected Count	86.0	152.0	238.0
		% within Neighbourhood	36.1%	63.9%	100.0%
		% within Transportation to post office, bank and other administration	100.0%	100.0%	100.0%
		% of Total	36.1%	63.9%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	48.588[b]	1	.000		
Continuity Correction[a]	46.723	1	.000		
Likelihood Ratio	50.673	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	48.384	1	.000		
N of Valid Cases	238				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 41.19.

Table 5-82: Chi-Square Test for exploring the relationship between the type of neighbourhood and modes of transportation to post office, bank and other administration services

Since we met the assumption on minimum expected cell frequency (see footnote *b* of *Chi-Square Test Table*), we can look for the *Continuity Correction* value and its associated *Asymp. Sig. (2-sided)* value. As this latter value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in modes of transport used to access post office, bank and other administration services between residents of the West End and residents of Bearsden.

Question 17: Is there a relationship between the type of neighbourhood and modes of transportation its residents use to access a library?

For testing this relationship, we are going to employ the type of neighbourhood as a categorical independent variable and transportation to the library as a categorical dependent variable of 2 categories (1=private car, 2=public transport, walk and other means which are not a private car). The Null-Hypothesis is that there is no relationship between the type of neighbourhood and means of transportation its residents use to access a library. The sample size in testing this relationship is 174 because 72 respondents said they didn't go to a library at all.

Neighbourhood * Transportation to a library Crosstabulation

			Transportation to a library		
			Private car	Public transport, walk and other means which are not a car	Total
Neighbourhood	Urban, West End	Count	14	74	88
		Expected Count	30.3	57.7	88.0
		% within Neighbourhood	15.9%	84.1%	100.0%
		% within Transportation to a library	23.3%	64.9%	50.6%
		% of Total	8.0%	42.5%	50.6%
	Suburban, Bearsden	Count	46	40	86
		Expected Count	29.7	56.3	86.0
		% within Neighbourhood	53.5%	46.5%	100.0%
		% within Transportation to a library	76.7%	35.1%	49.4%
		% of Total	26.4%	23.0%	49.4%
Total		Count	60	114	174
		Expected Count	60.0	114.0	174.0
		% within Neighbourhood	34.5%	65.5%	100.0%
		% within Transportation to a library	100.0%	100.0%	100.0%
		% of Total	34.5%	65.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	27.188[b]	1	.000		
Continuity Correction[a]	25.550	1	.000		
Likelihood Ratio	28.258	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	27.031	1	.000		
N of Valid Cases	174				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 29.66.

Table 5-83: Chi-Square Test for exploring the relationship between the type of neighbourhood and modes of transportation to a library

Since we met the assumption on minimum expected cell frequency (see footnote *b* of *Chi-Square Test Table*), we can look for the *Continuity Correction* value and its associated *Asymp. Sig. (2-sided)* value. As this latter value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in modes of transport used to access a library between residents of the West End and residents of Bearsden.

Question 18: Is there a relationship between the type of neighbourhood and modes of transportation its residents use to access cinema and theatre?

To test this relationship, we shall use the type of neighbourhood as a categorical independent variable and transportation to cinema and theatre as a categorical dependent variable of 2 categories (1=private car, 2=public transport, walk and other means which are not a private car). The Null-Hypothesis is that there is no relationship between the type of neighbourhood and means of transportation its residents use to access cinema or theatre. The sample size in testing this relationship is 213 because 33 respondents said they didn't go to cinema and theatre at all.

Neighbourhood * Transportation to cinema/ theatre Crosstabulation

			Transportation to cinema/ theatre		
			Private car	Public transport, walk and other means which are not a car	Total
Neighbourhood	Urban, West End	Count	37	78	115
		Expected Count	65.3	49.7	115.0
		% within Neighbourhood	32.2%	67.8%	100.0%
		% within Transportation to cinema/ theatre	30.6%	84.8%	54.0%
		% of Total	17.4%	36.6%	54.0%
	Suburban, Bearsden	Count	84	14	98
		Expected Count	55.7	42.3	98.0
		% within Neighbourhood	85.7%	14.3%	100.0%
		% within Transportation to cinema/ theatre	69.4%	15.2%	46.0%
		% of Total	39.4%	6.6%	46.0%
Total		Count	121	92	213
		Expected Count	121.0	92.0	213.0
		% within Neighbourhood	56.8%	43.2%	100.0%
		% within Transportation to cinema/ theatre	100.0%	100.0%	100.0%
		% of Total	56.8%	43.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	61.815[b]	1	.000		
Continuity Correction[a]	59.652	1	.000		
Likelihood Ratio	66.457	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	61.525	1	.000		
N of Valid Cases	213				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 42.33.

Table 5-84: Chi-Square Test for exploring the relationship between the type of neighbourhood and modes of transportation to cinema and theatre

Since we met the assumption on minimum expected cell frequency (see footnote *b* of *Chi-Square Test Table*), we can look for the *Continuity Correction* value and its associated *Asymp. Sig. (2-sided)* value. As this latter value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in modes of transport used to access cinema and theatre between residents of the West End and residents of Bearsden.

Question 19: Is there a relationship between the type of neighbourhood and modes of transportation its residents use to access restaurants, pubs and cafés?

In order to test this relationship, we shall employ the type of neighbourhood as a categorical independent variable and transportation to restaurants, pubs and cafés as a categorical dependent variable of 2 categories (1=private car, 2=public transport, walk and other means which are not a private car). The Null-Hypothesis is that there is no relationship between the type of neighbourhood and means of transportation its residents use to access restaurants, pubs and cafés. The sample size in testing this relationship is 232 (14 respondents said they didn't use these facilities at all).

Neighbourhood * Transportation to restaurants, pubs and cafes Crosstabulation

			Transportation to restaurants, pubs and cafes		
			Private car	Public transport, walk and other means which are not a car	Total
Neighbourhood	Urban, West End	Count	17	107	124
		Expected Count	46.5	77.5	124.0
		% within Neighbourhood	13.7%	86.3%	100.0%
		% within Transportation to restaurants, pubs and cafes	19.5%	73.8%	53.4%
		% of Total	7.3%	46.1%	53.4%
	Suburban, Bearsden	Count	70	38	108
		Expected Count	40.5	67.5	108.0
		% within Neighbourhood	64.8%	35.2%	100.0%
		% within Transportation to restaurants, pubs and cafes	80.5%	26.2%	46.6%
		% of Total	30.2%	16.4%	46.6%
Total		Count	87	145	232
		Expected Count	87.0	145.0	232.0
		% within Neighbourhood	37.5%	62.5%	100.0%
		% within Transportation to restaurants, pubs and cafes	100.0%	100.0%	100.0%
		% of Total	37.5%	62.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	64.324[b]	1	.000		
Continuity Correction[a]	62.162	1	.000		
Likelihood Ratio	67.756	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	64.047	1	.000		
N of Valid Cases	232				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 40.50.

Table 5-85: Chi-Square Test for exploring the relationship between the type of neighbourhood and modes of transportation to restaurants, pubs and cafés

Since we met the assumption on minimum expected cell frequency (see footnote *b* of *Chi-Square Test Table*), we can look for the *Continuity Correction* value and its associated *Asymp. Sig. (2-sided)* value. As this latter value (.00) is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in modes of transport used to access restaurants, pubs and cafés between residents of the West End and residents of Bearsden.

Residents who have children living in their household were asked about their children's nursery/ school distance from home and the most common means of transportation their children use in order to reach their nursery/ school. These two dependent variables were individually analysed in relation to the type of neighbourhood as an independent variable.

Question 20: Is there a relationship between the type of neighbourhood and distance of children's nursery or school from home?

In testing this relationship, we shall use the type of neighbourhood as a categorical independent variable and distance to children's nursery/school from home as a categorical dependent variable with 2 categories (1=up to one mile or 40min of walk, 2=anything more than one mile). Regarding the type of variables involved in testing this relationship, we are going to use the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the type of neighbourhood and distance of children's nursery or school from home. Since not all respondents from the original sample had children living in their household, only those respondents (89) who had children living with them were included in testing this relationship.

Neighbourhood * Distance of child(ren) nursery/ school from home, 2 categories Crosstabulation

			Distance of children's nursery/ school from home, 2 categories		
			Up to one mile (or 40min of walk)	Anything more than one mile	Total
Neighbourhood	Urban, West End	Count	26	16	42
		Expected Count	22.2	19.8	42.0
		% within Neighbourhood	61.9%	38.1%	100.0%
		% within Distance of child(ren) nursery/ school from home, 2 categories	55.3%	38.1%	47.2%
		% of Total	29.2%	18.0%	47.2%
	Suburban, Bearsden	Count	21	26	47
		Expected Count	24.8	22.2	47.0
		% within Neighbourhood	44.7%	55.3%	100.0%
		% within Distance of child(ren) nursery/ school from home, 2 categories	44.7%	61.9%	52.8%
		% of Total	23.6%	29.2%	52.8%
Total		Count	47	42	89
		Expected Count	47.0	42.0	89.0
		% within Neighbourhood	52.8%	47.2%	100.0%
		% within Distance of child(ren) nursery/ school from home, 2 categories	100.0%	100.0%	100.0%
		% of Total	52.8%	47.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.640[b]	1	.104		
Continuity Correction[a]	1.994	1	.158		
Likelihood Ratio	2.656	1	.103		
Fisher's Exact Test				.137	.079
Linear-by-Linear Association	2.611	1	.106		
N of Valid Cases	89				

a. Computed only for a 2x2 table

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.82.

Table 5-86: Chi-Square Test for exploring the relationship between the type of neighbourhood and distance of children's nursery/school from home

Since we did not break the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5), we can proceed with the analysis of *Asymp. Sig. (2-sided)* value for the *Continuity Correction* line. However, *Asymp. Sig. (2-sided)* value (.158) is larger than .05 and we can conclude that our result is not statistically significant and we have to accept the Null-Hypothesis. Practically, this means that there is not a statistically significant difference in the distance of children's nursery/ school from home between the West End (urban neighbourhood) and Bearsden (suburban neighbourhood).

Question 21: Is there a relationship between the type of neighbourhood and the means of transportation that children use to go to their nursery/ school?

For testing this relationship, we shall use the type of neighbourhood as a categorical independent variable and children's means of transportation to their nursery/school as a categorical dependent variable of 3 categories (1=private car, 2=public transport, 3=walk). Statistical test, which we shall apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the type of neighbourhood and

children's means of transportation to their nursery/ school. The sample size (89) is the same as for the previous question because it is limited only to those respondents who have children living in their household.

Neighbourhood * How do children go to their nursery or school Crosstabulation

			How do children go to their nursery or school			
			By private car	By public transport	On foot	Total
Neighbourhood	Urban, West End	Count	20	5	17	42
		Expected Count	22.2	5.7	14.2	42.0
		% within Neighbourhood	47.6%	11.9%	40.5%	100.0%
		% within How do children go to their nursery or school	42.6%	41.7%	56.7%	47.2%
		% of Total	22.5%	5.6%	19.1%	47.2%
	Suburban, Bearsden	Count	27	7	13	47
		Expected Count	24.8	6.3	15.8	47.0
		% within Neighbourhood	57.4%	14.9%	27.7%	100.0%
		% within How do children go to their nursery or school	57.4%	58.3%	43.3%	52.8%
		% of Total	30.3%	7.9%	14.6%	52.8%
Total		Count	47	12	30	89
		Expected Count	47.0	12.0	30.0	89.0
		% within Neighbourhood	52.8%	13.5%	33.7%	100.0%
		% within How do children go to their nursery or school	100.0%	100.0%	100.0%	100.0%
		% of Total	52.8%	13.5%	33.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.633[a]	2	.442
Likelihood Ratio	1.635	2	.441
Linear-by-Linear Association	1.357	1	.244
N of Valid Cases	89		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.66.

Table 5-87: Chi-Square Test for exploring the relationship between the type of neighbourhood and the means of transportation that children use to go to their nursery or school

As we have not violated the assumption for conducting a Chi-Square Test (0 cells have expected count less than 5) we can proceed with analysis of results obtained from the *Chi-Square Test Table*. However, since the *Asymp. Sig. (2-sided)* value (.442), which is associated to *Pearson Chi Square*, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in children's means of transportation to their nursery/ school between the West End and Bearsden.

5.4 Residential Mobility

This component of Residential Preferences regards the issue of resident's wish to change its present residential neighbourhood for another neighbourhood of same or different type. We shall be looking at how variables of residents' socio-economic characteristics and their residential environment interrelate with their potential residential mobility.

First of all, we shall analyse if the two neighbourhoods (the West End and Bearsden) differ in terms of the residential mobility. In order to do that, the type of neighbourhood will be employed as a categorical independent variable and residential mobility as a categorical dependent variable with 3 categories (1=I would like to move to the opposite type of neighbourhood or outside Glasgow, 2=I would like to move within the same type of neighbourhood, 3=I don't want to leave my neighbourhood). For testing this relationship we shall apply the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the type of neighbourhood and residential mobility of its residents.

Neighbourhood * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Neighbourhood	Urban, West End	Count	48	32	48	128
		Expected Count	43.7	23.9	60.4	128.0
		% within Neighbourhood	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	57.1%	69.6%	41.4%	52.0%
		% of Total	19.5%	13.0%	19.5%	52.0%
	Suburban, Bearsden	Count	36	14	68	118
		Expected Count	40.3	22.1	55.6	118.0
		% within Neighbourhood	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	42.9%	30.4%	58.6%	48.0%
		% of Total	14.6%	5.7%	27.6%	48.0%
Total		Count	84	46	116	246
		Expected Count	84.0	46.0	116.0	246.0
		% within Neighbourhood	34.1%	18.7%	47.2%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	34.1%	18.7%	47.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.819[a]	2	.003
Likelihood Ratio	12.014	2	.002
Linear-by-Linear Association	5.649	1	.017
N of Valid Cases	246		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 22.07.

Table 5-88: Chi-Square Test for exploring the relationship between the type of neighbourhood and residential mobility

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table) and the *Asymp. Sig. (2-sided)* value (.003), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility between the West End and Bearsden.

5.4.1 The West End – urban neighbourhood

Statistical tests for the relationships between the variables of socio-economic characteristics as the independent ones and residential mobility in the West End as the dependent variable

Deriving from the Questionnaire on Residential Preferences, there were 8 independent variables of socio-economic characteristics of respondents in the West End that were analysed individually in their relationship with the residential mobility in the West End. The following questions regard these relationships and explanations of the statistical significance of the result.

Question 1: Is there a relationship between the respondent's household type and residential mobility in the West End?

In order to test this relationship, we are going to use the household type as a categorical independent variable of 3 categories (1=single adult household, 2=parent(s) living with children in the household, 3=two or more adults without children in the household) and, residential mobility as a categorical dependent variable of 3 categories (1=I'd like to move to the opposite type of neighbourhood or out of Glasgow, 2=I would like to move within the same type of neighbourhood, 3=I don't want to leave my neighbourhood). The Null-Hypothesis of the Chi-Square Test is that there is no relationship between the respondent's household type and residential mobility in the West End.

Household type 3 groups * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Household type 3 groups	Single adult household	Count	9	7	16	32
		Expected Count	12.0	8.0	12.0	32.0
		% within Household type 3 groups	28.1%	21.9%	50.0%	100.0%
		% within Residential mobility	18.8%	21.9%	33.3%	25.0%
		% of Total	7.0%	5.5%	12.5%	25.0%
	Parent(s) living with children in the household	Count	19	11	14	44
		Expected Count	16.5	11.0	16.5	44.0
		% within Household type 3 groups	43.2%	25.0%	31.8%	100.0%
		% within Residential mobility	39.6%	34.4%	29.2%	34.4%
		% of Total	14.8%	8.6%	10.9%	34.4%
	Two or more adults without children in the household	Count	20	14	18	52
		Expected Count	19.5	13.0	19.5	52.0
		% within Household type 3 groups	38.5%	26.9%	34.6%	100.0%
		% within Residential mobility	41.7%	43.8%	37.5%	40.6%
		% of Total	15.6%	10.9%	14.1%	40.6%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Household type 3 groups	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.171[a]	4	.530
Likelihood Ratio	3.125	4	.537
Linear-by-Linear Association	1.325	1	.250
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.00.

Table 5-89: Chi-Square Test for exploring the relationship between the type of household and residential mobility in the West End

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can proceed with analysis of the results shown in the *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.53), which is associated to *Pearson Chi Square*, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility between different types of households in the West End.

Question 2: Is there a relationship between households with children and residential mobility in the West End?

In order to test this relationship we shall employ households with children as a categorical independent variable with 2 categories (1=yes, 2=no) and residential mobility as a categorical dependent variable of three categories. For testing this relationship we shall use the Chi-Square Test. The Null-Hypothesis is that there is no relationship between children living in a household and residential mobility.

Households with children * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Households with children	Yes	Count	19	11	14	44
		Expected Count	16.5	11.0	16.5	44.0
		% within Household type 2 groups	43.2%	25.0%	31.8%	100.0%
		% within Residential mobility	39.6%	34.4%	29.2%	34.4%
		% of Total	14.8%	8.6%	10.9%	34.4%
	No	Count	29	21	34	84
		Expected Count	31.5	21.0	31.5	84.0
		% within Household type 2 groups	34.5%	25.0%	40.5%	100.0%
		% within Residential mobility	60.4%	65.6%	70.8%	65.6%
		% of Total	22.7%	16.4%	26.6%	65.6%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Household type 2 groups	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.154[a]	2	.561
Likelihood Ratio	1.158	2	.561
Linear-by-Linear Association	1.145	1	.285
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.00.

Table 5-90: Chi-Square Test for exploring the relationship between children living in a household and residential mobility in the West End

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.561), which is associated to *Pearson Chi Square*, is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility between households with children and households without children living in the West End.

Question 3: Is there a relationship between resident's gender and residential mobility in the West End?

For testing this relationship, we shall employ the resident's gender as a categorical independent variable (1=male, 2=female) and residential mobility as a categorical dependent variable of 3 categories. According to the type of variables involved in testing this relationship, we are going to use the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the resident's gender and residential mobility in the West End.

Respondent's gender * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Respondent's gender	Male	Count	27	9	26	62
		Expected Count	23.3	15.5	23.3	62.0
		% within Respondent's gender	43.5%	14.5%	41.9%	100.0%
		% within Living anywhere else but in the present neighbourhood	56.3%	28.1%	54.2%	48.4%
		% of Total	21.1%	7.0%	20.3%	48.4%
	Female	Count	21	23	22	66
		Expected Count	24.8	16.5	24.8	66.0
		% within Respondent's gender	31.8%	34.8%	33.3%	100.0%
		% within Living anywhere else but in the present neighbourhood	43.8%	71.9%	45.8%	51.6%
		% of Total	16.4%	18.0%	17.2%	51.6%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Respondent's gender	37.5%	25.0%	37.5%	100.0%
		% within Living anywhere else but in the present neighbourhood	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.090[a]	2	.029
Likelihood Ratio	7.298	2	.026
Linear-by-Linear Association	.041	1	.839
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.50.

Table 5-91: Chi-Square Test for exploring the relationship between the resident's gender and residential mobility in the West End

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table) and the *Asymp. Sig. (2-sided)* value (.029), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in the West End between males and females.

Question 4: Is there a relationship between the resident's age and residential mobility in the West End?

For testing this relationship, we shall use the resident's age as a categorical independent variable of 2 categories (1=44years and younger, 2=45 years and older), and residential mobility as a categorical dependent variable of 3 categories. As in the previous case, we are going to apply the Chi-Square Test for a statistical analysis. The Null-Hypothesis is that there is no relationship between the resident's age and its residential mobility in the West End.

Respondent's age group * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Respondent's age group	44 years old and younger	Count	29	28	20	77
		Expected Count	28.9	19.3	28.9	77.0
		% within Respondent's age group	37.7%	36.4%	26.0%	100.0%
		% within Residential mobility	60.4%	87.5%	41.7%	60.2%
		% of Total	22.7%	21.9%	15.6%	60.2%
	45 years and older	Count	19	4	28	51
		Expected Count	19.1	12.8	19.1	51.0
		% within Respondent's age group	37.3%	7.8%	54.9%	100.0%
		% within Residential mobility	39.6%	12.5%	58.3%	39.8%
		% of Total	14.8%	3.1%	21.9%	39.8%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Respondent's age group	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.830[a]	2	.000
Likelihood Ratio	18.368	2	.000
Linear-by-Linear Association	3.493	1	.062
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.75.

Table 5-92: Chi-Square Test for exploring the relationship between the resident's age group and residential mobility in the West End

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of the *Chi-Square Tests* table) and the *Asymp. Sig. (2-sided)* value (.00), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in the West End between residents who are 44 years old or younger and residents who are 45 years old or over.

Question 5: Is there a relationship between the resident's marital status and residential mobility in the West End?

In order to test this relationship, we shall use marital status as a categorical independent variable with 2 categories (1= living with a partner / married, and 2=single/divorced/separated/widowed). Residential mobility is taken as a categorical dependent variable of 3 categories. We shall apply the Chi-Square test for testing this relationship. The Null-Hypothesis is that there is no relationship between the resident's marital status and residential mobility in the West End.

Marital status * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Marital status	Living with a partner/ Married	Count	35	14	25	74
		Expected Count	27.8	18.5	27.8	74.0
		% within Marital status	47.3%	18.9%	33.8%	100.0%
		% within Residential mobility	72.9%	43.8%	52.1%	57.8%
		% of Total	27.3%	10.9%	19.5%	57.8%
	Single/ Divorced/ Separated/ Widowed	Count	13	18	23	54
		Expected Count	20.3	13.5	20.3	54.0
		% within Marital status	24.1%	33.3%	42.6%	100.0%
		% within Residential mobility	27.1%	56.3%	47.9%	42.2%
		% of Total	10.2%	14.1%	18.0%	42.2%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Marital status	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.730[a]	2	.021
Likelihood Ratio	7.917	2	.019
Linear-by-Linear Association	4.238	1	.040
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.50.

Table 5-93: Chi-Square Test for exploring the relationship between the resident's marital status and residential mobility in the West End

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table) and the *Asymp. Sig. (2-sided)* value (.021), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in the West End between those respondents living with a partner or married and, those who are single, divorced, separated or widowed.

Question 6: Is there a relationship between resident's highest level of formal education and residential mobility in the West End?

For testing this relationship, we shall employ highest level of education as a categorical independent variable of 2 categories (1=less than completed undergraduate studies, 2=completed undergraduate or postgraduate studies) and, residential mobility is a categorical dependent variable of 3 categories. Statistical test, which we are going to use, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the highest achieved level of formal education and residential mobility.

Highest level of education (2 groups) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Highest level of education (2 groups)	Less than completed undergraduate studies	Count	10	7	21	38
		Expected Count	14.3	9.5	14.3	38.0
		% within Highest level of education (2 groups)	26.3%	18.4%	55.3%	100.0%
		% within Residential mobility	20.8%	21.9%	43.8%	29.7%
		% of Total	7.8%	5.5%	16.4%	29.7%
	Completed undergraduate or postgraduate studies	Count	38	25	27	90
		Expected Count	33.8	22.5	33.8	90.0
		% within Highest level of education (2 groups)	42.2%	27.8%	30.0%	100.0%
		% within Residential mobility	79.2%	78.1%	56.3%	70.3%
		% of Total	29.7%	19.5%	21.1%	70.3%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Highest level of education (2 groups)	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.286[a]	2	.026
Likelihood Ratio	7.160	2	.028
Linear-by-Linear Association	5.991	1	.014
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.50.

Table 5-94: Chi-Square Test for exploring the relationship between the resident's highest achieved level of formal education and residential mobility in the West End

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table) and, the *Asymp. Sig. (2-sided)* value (.026), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in the West End between respondents who have achieved less than completed undergraduate studies and those who have completed undergraduate and postgraduate studies.

Question 7: Is there a relationship between resident's job situation and residential mobility in the West End?

For testing this relationship, we shall employ job situation as a categorical independent variable. For the purposes of this testing, this variable includes only two categories (1=employees and 2=others). Residential mobility is a categorical dependent variable of 3 categories. Statistical test, which we are going to use, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the resident's job situation and its residential mobility.

Job situation, 2 groups) * Change of residential neighbourhood Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Job situation, 2 groups)	Employee (Full/Part time, Self empl.)	Count	37	22	21	80
		Expected Count	30.0	20.0	30.0	80.0
		% within Job situation, 2 groups)	46.3%	27.5%	26.3%	100.0%
		% within Change of residential neighbourhood	77.1%	68.8%	43.8%	62.5%
		% of Total	28.9%	17.2%	16.4%	62.5%
	Other (student,retired, looking after home...)	Count	11	10	27	48
		Expected Count	18.0	12.0	18.0	48.0
		% within Job situation, 2 groups)	22.9%	20.8%	56.3%	100.0%
		% within Change of residential neighbourhood	22.9%	31.3%	56.3%	37.5%
		% of Total	8.6%	7.8%	21.1%	37.5%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Job situation, 2 groups)	37.5%	25.0%	37.5%	100.0%
		% within Change of residential neighbourhood	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.089[a]	2	.002
Likelihood Ratio	12.147	2	.002
Linear-by-Linear Association	11.289	1	.001
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.00.

Table 5-95: Chi-Square Test for exploring the relationship between the resident's job situation and residential mobility in the West End

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table) and, the *Asymp. Sig. (2-sided)* value (.002), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in the West End between respondents who are employees (full-time, part-time or self employed) and others (students, retired population, people looking after home/family, unemployed and permanently sick/disabled).

Question 8: Is there a relationship between the resident's current occupation and residential mobility in the West End?

For testing this relationship, we shall use current occupation as a categorical independent variable of two categories (1=professionals, and 2=other, non-professionals) and residential mobility as a categorical dependent variable of three categories. The Null-Hypothesis tested by the Chi-Square Test is that there is no relationship between the resident's current occupation and its residential mobility in the West End.

Current occupation (2 groups) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Current occupation (2 groups)	Professionals	Count	31	18	21	70
		Expected Count	26.3	17.5	26.3	70.0
		% within Current occupation (2 groups)	44.3%	25.7%	30.0%	100.0%
		% within Residential mobility	64.6%	56.3%	43.8%	54.7%
		% of Total	24.2%	14.1%	16.4%	54.7%
	Other, non-professionals	Count	17	14	27	58
		Expected Count	21.8	14.5	21.8	58.0
		% within Current occupation (2 groups)	29.3%	24.1%	46.6%	100.0%
		% within Residential mobility	35.4%	43.8%	56.3%	45.3%
		% of Total	13.3%	10.9%	21.1%	45.3%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Current occupation (2 groups)	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.246[a]	2	.120
Likelihood Ratio	4.270	2	.118
Linear-by-Linear Association	4.171	1	.041
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.50.

Table 5-96: Chi-Square Test for exploring the relationship between resident's current occupation and residential mobility in the West End

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.12), which is associated to *Pearson Chi Square*, is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility in the West End between residents of professional occupation and residents of other, non-professional occupations.

From the statistical analyses on relationships between independent variables of socio-economic characteristics and residential mobility in the West End, it can be concluded that many of those relationships showed to be statistically significant. Yet, a few variables (e.g. type of household, households with children living in them, and resident's occupation) have not shown a statistically significant effect on residential mobility in the West End.

Statistical tests for the relationships between the variables of environmental context as the independent ones and residential mobility in the West End as the dependent variable

Deriving from the Questionnaire on Residential Preferences, there were 13 independent variables of environmental context of respondents in the West End that were analysed individually in their relationship with residential mobility in the West End. Following are the questions that regard these relationships and for each one of them there is an explanation of the statistical significance of the result.

Question 9: Is there a relationship between resident's present type of home and residential mobility in the West End?

For testing this relationship, we shall employ the present type of home as a categorical independent variable of two categories (1=house: detached, semi-detached or terraced and, 2=flat: tenement, high-rise or block of flat), and residential mobility as a categorical dependent variable of three categories. Statistical test, which we shall apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the present type of home and residential mobility in the West End.

Type of home (2 groups) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Type of home (2 groups)	House (detached; semi-detached; terraced)	Count	17	4	20	41
		Expected Count	15.4	10.3	15.4	41.0
		% within Type of home (2 groups)	41.5%	9.8%	48.8%	100.0%
		% within Residential mobility	35.4%	12.5%	41.7%	32.0%
		% of Total	13.3%	3.1%	15.6%	32.0%
	Flat (tenement; high-rise or block of flat)	Count	31	28	28	87
		Expected Count	32.6	21.8	32.6	87.0
		% within Type of home (2 groups)	35.6%	32.2%	32.2%	100.0%
		% within Residential mobility	64.6%	87.5%	58.3%	68.0%
		% of Total	24.2%	21.9%	21.9%	68.0%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Type of home (2 groups)	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.907[a]	2	.019
Likelihood Ratio	8.824	2	.012
Linear-by-Linear Association	.427	1	.513
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.25.

Table 5-97: Chi-Square Test for exploring the relationship between the resident's present type of home and residential mobility in the West End

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table) and, the *Asymp. Sig. (2-sided)* value (.019), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in the West End between respondents who are presently living in the house type of home and those living in the flats.

Question 10: Is there a relationship between the resident's ownership of home and residential mobility in the West End?

For testing this relationship, we shall use ownership of home as a categorical independent variable of two categories (1=not owner occupied, 2=owner occupied), and residential mobility as a categorical dependent variable of 3 categories. The Null-Hypothesis, which we shall test by the Chi-Square test, is that there is no relationship between the ownership of home and residential mobility in the West End.

Ownership of home (2 categories) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Ownership of home (2 categories)	Not owner occupied	Count	6	9	7	22
		Expected Count	8.3	5.5	8.3	22.0
		% within Ownership of home (2 categories)	27.3%	40.9%	31.8%	100.0%
		% within Residential mobility	12.5%	28.1%	14.6%	17.2%
		% of Total	4.7%	7.0%	5.5%	17.2%
	Owner occupied	Count	42	23	41	106
		Expected Count	39.8	26.5	39.8	106.0
		% within Ownership of home (2 categories)	39.6%	21.7%	38.7%	100.0%
		% within Residential mobility	87.5%	71.9%	85.4%	82.8%
		% of Total	32.8%	18.0%	32.0%	82.8%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Ownership of home (2 categories)	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.659[a]	2	.160
Likelihood Ratio	3.391	2	.184
Linear-by-Linear Association	.073	1	.788
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.50.

Table 5-98: Chi-Square Test for exploring the relationship between resident's ownership of home and residential mobility in the West End

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.16), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility in the West End between non-owner-occupiers and owner-occupiers.

Question 11: Is there a relationship between the duration of living in the West End and residential mobility in the West End?

In order to test this relationship, we shall use the duration of living in the West End as a categorical independent variable of 2 categories (1=up to 10 years, 2=11 years and longer), and residential mobility as a categorical dependent variable of 3 categories. Statistical test, which we shall apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the duration of living in the West End and residential mobility.

Duration of living in a present neighbourhood * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Duration of living in a present neighbourhood	Up to 10 years	Count	23	21	16	60
		Expected Count	22.5	15.0	22.5	60.0
		% within Duration of living in a present neighbourhood	38.3%	35.0%	26.7%	100.0%
		% within Residential mobility	47.9%	65.6%	33.3%	46.9%
		% of Total	18.0%	16.4%	12.5%	46.9%
	11 years and longer	Count	25	11	32	68
		Expected Count	25.5	17.0	25.5	68.0
		% within Duration of living in a present neighbourhood	36.8%	16.2%	47.1%	100.0%
		% within Residential mobility	52.1%	34.4%	66.7%	53.1%
		% of Total	19.5%	8.6%	25.0%	53.1%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Duration of living in a present neighbourhood	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.073[a]	2	.018
Likelihood Ratio	8.198	2	.017
Linear-by-Linear Association	2.034	1	.154
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.00.

Table 5-99: Chi-Square Test for exploring the relationship between the duration of living in the West End and residential mobility

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table) and the *Asymp. Sig. (2-sided)* value (.018), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility between the residents who have been living in the West End for less and equal 10 years and those who have been living in the same neighbourhood for 11 years and longer.

Question 12: Is there a relationship between the resident's type of neighbourhood in the childhood and residential mobility in the West End?

In order to test this relationship, we are going to use the type of neighbourhood in the childhood as a categorical independent variable of 2 categories (1=urban type of neighbourhood, and 2=suburban or rural type of neighbourhood), and residential mobility as a categorical dependent variable of three categories. Statistical test, which we shall apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the type of neighbourhood in the childhood and residential mobility in the West End.

Type of neighbourhood in childhood * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Type of neighbourhood in childhood	Urban	Count	15	11	22	48
		Expected Count	18.0	12.0	18.0	48.0
		% within Type of neighbourhood in childhood	31.3%	22.9%	45.8%	100.0%
		% within Residential mobility	31.3%	34.4%	45.8%	37.5%
		% of Total	11.7%	8.6%	17.2%	37.5%
	Suburban or rural type of neighbourhood	Count	33	21	26	80
		Expected Count	30.0	20.0	30.0	80.0
		% within Type of neighbourhood in childhood	41.3%	26.3%	32.5%	100.0%
		% within Residential mobility	68.8%	65.6%	54.2%	62.5%
		% of Total	25.8%	16.4%	20.3%	62.5%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Type of neighbourhood in childhood	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.356[a]	2	.308
Likelihood Ratio	2.344	2	.310
Linear-by-Linear Association	2.161	1	.142
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.00.

Table 5-100: Chi-Square Test for exploring the relationship between resident's type of neighbourhood in the childhood and residential mobility in the West End

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5), we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.308), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility in the West End between residents who lived in the same type of neighbourhood in the childhood and those who lived in suburban or rural type of neighbourhood in the childhood.

Question 13: Is there a relationship between the possession of a private garden and residential mobility in the West End?

For testing this relationship, home having a private garden is a categorical independent variable of 2 categories and residential mobility in the West End is categorical dependent variable of three categories. Statistical test, which is applied, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between possession of a private garden and residential mobility in the West End.

Home having a private garden yes/no * Change of residential neighbourhood Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Home having a private garden yes/no	Yes	Count	14	5	16	35
		Expected Count	13.1	8.8	13.1	35.0
		% within Home having a private garden yes/no	40.0%	14.3%	45.7%	100.0%
		% within Change of residential neighbourhood	29.2%	15.6%	33.3%	27.3%
		% of Total	10.9%	3.9%	12.5%	27.3%
	No	Count	34	27	32	93
		Expected Count	34.9	23.3	34.9	93.0
		% within Home having a private garden yes/no	36.6%	29.0%	34.4%	100.0%
		% within Change of residential neighbourhood	70.8%	84.4%	66.7%	72.7%
		% of Total	26.6%	21.1%	25.0%	72.7%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Home having a private garden yes/no	37.5%	25.0%	37.5%	100.0%
		% within Change of residential neighbourhood	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.159[a]	2	.206
Likelihood Ratio	3.390	2	.184
Linear-by-Linear Association	.208	1	.648
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.75.

Table 5-101: Chi-Square Test for exploring the relationship between possession of a private garden and residential mobility in the West End

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5), we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.206), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility in the West End between residents who have home with a private garden and those who don't have a home with a private garden.

Question 14: Is there a relationship between perceived importance of having a private garden and residential mobility in the West End?

For testing this relationship, we shall employ perceived importance of having a private garden as a categorical independent variable of two categories (1=less than important and, 2=important or very important), and residential mobility as a categorical dependent variable of three categories. The Null-Hypothesis, which we shall test by using the Chi-Square Test, is that there is no relationship between resident's perception on importance of having a private garden and residential mobility in the West End.

Private garden-very important (2 categories) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Private garden-very important (2 categories)	Less than agree	Count	22	17	29	68
		Expected Count	25.5	17.0	25.5	68.0
		% within Private garden-very important (2 categories)	32.4%	25.0%	42.6%	100.0%
		% within Residential mobility	45.8%	53.1%	60.4%	53.1%
		% of Total	17.2%	13.3%	22.7%	53.1%
	Agree to strongly agree	Count	26	15	19	60
		Expected Count	22.5	15.0	22.5	60.0
		% within Private garden-very important (2 categories)	43.3%	25.0%	31.7%	100.0%
		% within Residential mobility	54.2%	46.9%	39.6%	46.9%
		% of Total	20.3%	11.7%	14.8%	46.9%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Private garden-very important (2 categories)	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.050[a]	2	.359
Likelihood Ratio	2.057	2	.358
Linear-by-Linear Association	2.034	1	.154
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.00.

Table 5-102: Chi-Square Test for exploring the relationship between resident's perceived importance of having a private garden and residential mobility in the West End

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.359), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility in the West End between residents who think that having a private garden is less than important and those who think that having a private garden is important or very important.

Question 15: Is there a relationship between the next-door neighbours' similarities and residential mobility in the West End?

In testing this relationship, the similarities with the next-door neighbours are taken as a categorical independent variable with two categories (1= there is a great diversity between the next-door neighbours; 2=there are similarities with the next-door neighbours), and residential mobility in the West End is categorical dependent variable of three categories. Statistical test, which is applied in testing the relationship between these two variables, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the next-door neighbours' similarities and residential mobility in the West End.

Similarities with next-door neighbours * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Similarities with next-door neighbours	There is a great diversity between the neighbours	Count	18	17	19	54
		Expected Count	20.3	13.5	20.3	54.0
		% within Similarities with next-door neighbours	33.3%	31.5%	35.2%	100.0%
		% within Change of residential neighbourhood	37.5%	53.1%	39.6%	42.2%
		% of Total	14.1%	13.3%	14.8%	42.2%
	There are similarities with the next-door neighbours	Count	30	15	29	74
		Expected Count	27.8	18.5	27.8	74.0
		% within Similarities with next-door neighbours	40.5%	20.3%	39.2%	100.0%
		% within Change of residential neighbourhood	62.5%	46.9%	60.4%	57.8%
		% of Total	23.4%	11.7%	22.7%	57.8%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Similarities with next-door neighbours	37.5%	25.0%	37.5%	100.0%
		% within Change of residential neighbourhood	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.135[a]	2	.344
Likelihood Ratio	2.118	2	.347
Linear-by-Linear Association	.042	1	.837
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.50.

Table 5-103: Chi-Square Test for exploring the relationship between next-door neighbours' similarities and residential mobility in the West End

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.344), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility in the West End between residents who think that there are no similarities between them and their next-door neighbours and those who think there are similarities between them and their next-door neighbours.

Question 16: Is there a relationship between the happiness with contacts with the next-door neighbours and residential mobility in the West End?

In order to test this relationship, we shall use the happiness with contacts with the next-door neighbours as a categorical independent variable of 2 categories (1= less than agree, 2=agree to strongly agree). Residential mobility is taken as a categorical dependent variable of 3 categories. Statistical test, which will be applied, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the resident's happiness with contacts with the next-door neighbours and residential mobility in the West End.

Happy with contacts with neighbours (2 categories) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Happy with contacts with neighbours (2 categories)	Less than agree	Count	14	16	9	39
		Expected Count	14.6	9.8	14.6	39.0
		% within Happy with contacts with neighbours (2 categories)	35.9%	41.0%	23.1%	100.0%
		% within Residential mobility	29.2%	50.0%	18.8%	30.5%
		% of Total	10.9%	12.5%	7.0%	30.5%
	Agree to strongly agree	Count	34	16	39	89
		Expected Count	33.4	22.3	33.4	89.0
		% within Happy with contacts with neighbours (2 categories)	38.2%	18.0%	43.8%	100.0%
		% within Residential mobility	70.8%	50.0%	81.3%	69.5%
		% of Total	26.6%	12.5%	30.5%	69.5%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Happy with contacts with neighbours (2 categories)	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.912[a]	2	.012
Likelihood Ratio	8.747	2	.013
Linear-by-Linear Association	1.220	1	.269
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.75.

Table 5-104: Chi-Square Test for exploring the relationship between happiness with contacts with the next-door neighbours and residential mobility in the West End

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table) and, the *Asymp. Sig. (2-sided)* value (.012), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in the West End between respondents who are less than happy with contacts with the next-door neighbours and those who are happy or very happy with contacts with the next-door neighbours.

Question 17: Is there a relationship between resident's feeling of safety in the West End and residential mobility in the West End?

In order to test this relationship, we shall use the feeling of being very safe in the residential neighbourhood as a categorical independent variable of two categories (1=less than agree and, 2=agree to strongly agree), and residential mobility as a categorical dependent variable of three categories. For testing the relationship between these two variables, we are going to apply the Chi-Square Test. The Null-Hypothesis is that there is no relationship between feeling of safety in the residential neighbourhood and residential mobility in the West End.

Feeling very safe in my neighbourhood * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Feeling very safe in my neighbourhood	Less than agree	Count	17	9	16	42
		Expected Count	15.8	10.5	15.8	42.0
		% within Feeling very safe in my neighbourhood	40.5%	21.4%	38.1%	100.0%
		% within Residential mobility	35.4%	28.1%	33.3%	32.8%
		% of Total	13.3%	7.0%	12.5%	32.8%
	Agree to strongly agree	Count	31	23	32	86
		Expected Count	32.3	21.5	32.3	86.0
		% within Feeling very safe in my neighbourhood	36.0%	26.7%	37.2%	100.0%
		% within Residential mobility	64.6%	71.9%	66.7%	67.2%
		% of Total	24.2%	18.0%	25.0%	67.2%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Feeling very safe in my neighbourhood	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.472[a]	2	.790
Likelihood Ratio	.479	2	.787
Linear-by-Linear Association	.047	1	.829
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.50.

Table 5-105: Chi-Square Test for exploring the relationship between the resident's feeling of safety in the West End and their residential mobility

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.79), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility between residents who feel less than safe living in the West End and those who feel safe or very safe living in the West End.

Question 18: Is there a relationship between the respondent's perceived pollution problems in the West End and residential mobility in the West End?

In order of testing this relationship, we shall use perceived pollution problems in the West End as a categorical independent variable of two categories (1=yes, 2=no), and residential mobility as a categorical dependent variable of three categories. Statistical test, which we shall use, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the perceived pollution problems in the West End and residential mobility in the West End.

Does your neihbourhood have pollution problems * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Does your neihbourhood have pollution problems	Yes	Count	14	7	15	36
		Expected Count	13.5	9.0	13.5	36.0
		% within Does your neihbourhood have pollution problems	38.9%	19.4%	41.7%	100.0%
		% within Residential mobility	29.2%	21.9%	31.3%	28.1%
		% of Total	10.9%	5.5%	11.7%	28.1%
	No	Count	34	25	33	92
		Expected Count	34.5	23.0	34.5	92.0
		% within Does your neihbourhood have pollution problems	37.0%	27.2%	35.9%	100.0%
		% within Residential mobility	70.8%	78.1%	68.8%	71.9%
		% of Total	26.6%	19.5%	25.8%	71.9%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Does your neihbourhood have pollution problems	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.876[a]	2	.645
Likelihood Ratio	.903	2	.637
Linear-by-Linear Association	.051	1	.821
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.00.

Table 5-106: Chi-Square Test for exploring the relationship between resident's perceived pollution in the West End and residential mobility in the West End

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.645), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility in the West End between residents who think that there are pollution problems in the West End and those who think there are no pollution problems in the West End.

Question 19: Is there a relationship between resident's satisfaction with the public transport system organisation in the West End and residential mobility in the same neighbourhood?

For testing this relationship, we shall use satisfaction with the public transport system organisation in the residential neighbourhood as a categorical independent variable of two categories (1=less than agree and, 2=agree to strongly agree), and residential mobility as a categorical dependent variable of three categories. The Null-Hypothesis to be tested by the Chi-Square Test is that there is no relationship between the satisfaction with the public transport system organisation in the West End and residential mobility of its residents.

Very well organised public transport in the neighbourhood (2 categories) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Very well organised public transport in the neighbourhood (2 categories)	Less than agree	Count	21	9	17	47
		Expected Count	17.6	11.8	17.6	47.0
		% within Very well organised public transport in the neighbourhood (2 categories)	44.7%	19.1%	36.2%	100.0%
		% within Residential mobility	43.8%	28.1%	35.4%	36.7%
		% of Total	16.4%	7.0%	13.3%	36.7%
	Agree to strongly agree	Count	27	23	31	81
		Expected Count	30.4	20.3	30.4	81.0
		% within Very well organised public transport in the neighbourhood (2 categories)	33.3%	28.4%	38.3%	100.0%
		% within Residential mobility	56.3%	71.9%	64.6%	63.3%
		% of Total	21.1%	18.0%	24.2%	63.3%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Very well organised public transport in the neighbourhood (2 categories)	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.073[a]	2	.355
Likelihood Ratio	2.092	2	.351
Linear-by-Linear Association	.712	1	.399
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.75.

Table 5-107: Chi-Square Test for exploring the relationship between the resident's satisfaction with the public transport system organisation in the West End and their residential mobility

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.355), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility in the West End between residents who are less than satisfied with the public transport system organisation in the West End and those who are satisfied or very satisfied with the public transport system organisation in the West End.

Question 20: Is there a relationship between the resident's satisfaction with the overall facilities provided by the West End and residential mobility in the West End?

To test this relationship, we shall use: being very happy with the overall facilities provided by the residential neighbourhood as a categorical independent variable of two categories (1=less than agree and, 2=agree to strongly agree), and residential mobility as a categorical dependent variable of three categories. Statistical test, which we shall apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the satisfaction with the overall facilities provided by the residential neighbourhood (the West End) and residential mobility in the West End.

Very happy with overall facilities provided by neighbourhood (2 categories) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Very happy with overall facilities provided by neighbourhood (2 categories)	Less than agree	Count	10	5	7	22
		Expected Count	8.3	5.5	8.3	22.0
		% within Very happy with overall facilities provided by neighbourhood (2 categories)	45.5%	22.7%	31.8%	100.0%
		% within Residential mobility	20.8%	15.6%	14.6%	17.2%
		% of Total	7.8%	3.9%	5.5%	17.2%
	Agree to strongly agree	Count	38	27	41	106
		Expected Count	39.8	26.5	39.8	106.0
		% within Very happy with overall facilities provided by neighbourhood (2 categories)	35.8%	25.5%	38.7%	100.0%
		% within Residential mobility	79.2%	84.4%	85.4%	82.8%
		% of Total	29.7%	21.1%	32.0%	82.8%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Very happy with overall facilities provided by neighbourhood (2 categories)	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.732[a]	2	.694
Likelihood Ratio	.721	2	.697
Linear-by-Linear Association	.654	1	.419
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.50.

Table 5-108: Chi-Square Test for exploring the relationship between the resident's satisfaction with the overall facilities provided by the West End and their residential mobility

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5), we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.694), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility in the West End between residents who are less than satisfied with the overall facilities provided by the West End and those who are satisfied and very satisfied with the overall facilities provided by the West End.

Question 21: Is there a relationship between the resident's perception on lack of certain facilities in the West End and its residential mobility?

For testing this relationship, we shall use: the lack of facilities in the West End as a categorical independent variable of two categories (1=no facilities are lacking in the West End and, 2=there is a lack of certain facilities in the West End), and residential mobility as a categorical dependent variable of three categories. The Null-Hypothesis, which we shall test by Chi-Square Test is, that there is no relationship between the lack of certain facilities in the West End and residential mobility in the same neighbourhood.

Lack of facilities in the neighbourhood * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Lack of facilities in the neighbourhood	No facilities are lacking in the neighbourhood	Count	24	17	33	74
		Expected Count	27.8	18.5	27.8	74.0
		% within Lack of facilities in the neighbourhood	32.4%	23.0%	44.6%	100.0%
		% within Residential mobility	50.0%	53.1%	68.8%	57.8%
		% of Total	18.8%	13.3%	25.8%	57.8%
	There is a lack of certain facilities	Count	24	15	15	54
		Expected Count	20.3	13.5	20.3	54.0
		% within Lack of facilities in the neighbourhood	44.4%	27.8%	27.8%	100.0%
		% within Residential mobility	50.0%	46.9%	31.3%	42.2%
		% of Total	18.8%	11.7%	11.7%	42.2%
Total		Count	48	32	48	128
		Expected Count	48.0	32.0	48.0	128.0
		% within Lack of facilities in the neighbourhood	37.5%	25.0%	37.5%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	37.5%	25.0%	37.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.844[a]	2	.146
Likelihood Ratio	3.905	2	.142
Linear-by-Linear Association	3.432	1	.064
N of Valid Cases	128		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.50.

Table 5-109: Chi-Square Test for exploring the relationship between the resident's perception on lack of certain facilities in the West End and residential mobility in the West End

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5), we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.146), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility in the West End between residents who think that no facilities are lacking in the West End and those who think there is a lack of certain facilities in the West End.

From the statistical analyses on the relationships between independent variables of environmental context on one side and residential mobility in the West End on the other, it can be noticed that only 3 out of 13 independent variables showed a statistically significant relationship with the residential mobility in the West End. Those three independent variables are: present type of home, duration of living in the West End and happiness with contacts with the next-door neighbours.

Statistical test for the relationships between residential preference components: residential mobility, community sentiment and community evaluation

Final statistical analysis in the West End regarded testing of relationships between following components of residential preference: residential mobility, community sentiment and community evaluation. For the purpose of this analysis, Pearson correlation has been employed.

Descriptive Statistics

	Mean	Std. Deviation	N
Wish to leave residential neighbourhood	2.00	.87	128
Emotional attachment to the West End	3.78	.97	128
Total neighbourhood satisfaction, the West End	33.85	4.62	128

Correlations

		Wish to leave residential neighbourhood	Emotional attachment to the West End	Total neighbourhood satisfaction, the West End
Wish to leave residential neighbourhood	Pearson Correlation	1.000	-.671**	-.143
	Sig. (2-tailed)	.	.000	.107
	N	128	128	128
Emotional attachment to the West End	Pearson Correlation	-.671**	1.000	.188*
	Sig. (2-tailed)	.000	.	.034
	N	128	128	128
Total neighbourhood satisfaction, the West End	Pearson Correlation	-.143	.188*	1.000
	Sig. (2-tailed)	.107	.034	.
	N	128	128	128

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5-110: Pearson Correlation between variables: residential mobility, community sentiment and community evaluation in the West End

For interpreting the strength of correlation between the three components of residential preference in the West End, Cohen's (1988) guidelines can be used. Following these guidelines, it can be observed that there is a large negative correlation (r=-.671) between emotional attachment (community sentiment) in the West End and residential mobility (wish to leave this residential neighbourhood). On the other hand, correlation between community evaluation and residential mobility in the West End is small (r=-.143). There is also a small positive correlation between community sentiment and community evaluation in the West End (r=.188).

5.4.2 Bearsden – suburban neighbourhood

Statistical tests for the relationships between the variables of socio-economic characteristics as the independent ones and residential mobility in Bearsden as the dependent variable

Deriving from the Questionnaire on Residential Preferences, there were 8 independent variables of socio-economic characteristics of respondents in the West End that were analysed individually in their relationship with the residential mobility in the West End. The following questions regard these relationships and explanations of the statistical significance of the result.

Question 1: Is there a relationship between respondent's household type and residential mobility in Bearsden?

In order to test this relationship, we are going to use the household type as a categorical independent variable of 3 categories (1=single adult household, 2=parent(s) living with children in the household, 3=two or more adults without children in the household), and residential mobility as a categorical dependent variable of 3 categories (1=I'd like to move to the opposite type of neighbourhood or out of Glasgow, 2=I would like to move within the same type of neighbourhood, 3=I don't want to leave my neighbourhood). The Null-Hypothesis of Chi-Square test is that there is no relationship between the respondent's household type and residential mobility in Bearsden.

Household type, 3groups * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Household type, 3groups	Single adult household	Count	6	0	14	20
		Expected Count	6.1	2.4	11.5	20.0
		% within Household type, 3groups	30.0%	.0%	70.0%	100.0%
		% within Residential mobility	16.7%	.0%	20.6%	16.9%
		% of Total	5.1%	.0%	11.9%	16.9%
	Parent(s) living with children in the household	Count	16	4	27	47
		Expected Count	14.3	5.6	27.1	47.0
		% within Household type, 3groups	34.0%	8.5%	57.4%	100.0%
		% within Residential mobility	44.4%	28.6%	39.7%	39.8%
		% of Total	13.6%	3.4%	22.9%	39.8%
	Two or more adults without children in the household	Count	14	10	27	51
		Expected Count	15.6	6.1	29.4	51.0
		% within Household type, 3groups	27.5%	19.6%	52.9%	100.0%
		% within Residential mobility	38.9%	71.4%	39.7%	43.2%
		% of Total	11.9%	8.5%	22.9%	43.2%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Household type, 3groups	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.472[a]	4	.167
Likelihood Ratio	8.436	4	.077
Linear-by-Linear Association	.227	1	.634
N of Valid Cases	118		

a. 1 cells (11.1%) have expected count less than 5. The minimum expected count is 2.37.

Table 5-111: Chi-Square Test for exploring the relationship between the type of household and residential mobility in Bearsden

As we have not violated the assumption for conducting the Chi-Square Test (11.1% of cells have expected count less than 5 and that is less than 20%) we can proceed with analysis of the results shown in the *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.167), which is associated to *Pearson Chi Square*, is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility in Berasden between different types of households in this neighbourhood.

Question 2: Is there a relationship between households with children and residential mobility in Bearsden?

In order to test this relationship we employ households with children as a categorical independent variable with 2 categories (1=yes, 2=no), and residential mobility as a categorical dependent variable of three categories. For testing this relationship we shall use the Chi-Square Test. The Null-Hypothesis is that there is no relationship between children living in a household and residential mobility in Bearsden.

Household type, 2groups * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Household type, 2groups	Households with children	Count	16	4	27	47
		Expected Count	14.3	5.6	27.1	47.0
		% within Household type, 2groups	34.0%	8.5%	57.4%	100.0%
		% within Residential mobility	44.4%	28.6%	39.7%	39.8%
		% of Total	13.6%	3.4%	22.9%	39.8%
	Households without children	Count	20	10	41	71
		Expected Count	21.7	8.4	40.9	71.0
		% within Household type, 2groups	28.2%	14.1%	57.7%	100.0%
		% within Residential mobility	55.6%	71.4%	60.3%	60.2%
		% of Total	16.9%	8.5%	34.7%	60.2%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Household type, 2groups	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.061[a]	2	.588
Likelihood Ratio	1.089	2	.580
Linear-by-Linear Association	.132	1	.716
N of Valid Cases	118		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.58.

Table 5-112: Chi-Square Test for exploring the relationship between children living in a household and residential mobility in Bearsden

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.588), which is associated to *Pearson Chi Square*, is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility between households with children and households without children living in Bearsden.

Question 3: Is there relationship between resident's gender and residential mobility in Bearsden?

For testing this relationship, we shall employ the resident's gender as a categorical independent variable (1=male, 2=female), and residential mobility as a categorical dependent variable of 3 categories. According to type of variables involved in testing this relationship, we are going to use a Chi-Square Test. The Null-Hypothesis is that there is no relationship between the resident's gender and residential mobility in Bearsden.

Respondent's gender * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Respondent's gender	Male	Count	20	7	38	65
		Expected Count	19.8	7.7	37.5	65.0
		% within Respondent's gender	30.8%	10.8%	58.5%	100.0%
		% within Residential mobility	55.6%	50.0%	55.9%	55.1%
		% of Total	16.9%	5.9%	32.2%	55.1%
	Female	Count	16	7	30	53
		Expected Count	16.2	6.3	30.5	53.0
		% within Respondent's gender	30.2%	13.2%	56.6%	100.0%
		% within Residential mobility	44.4%	50.0%	44.1%	44.9%
		% of Total	13.6%	5.9%	25.4%	44.9%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Respondent's gender	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.167[a]	2	.920
Likelihood Ratio	.166	2	.920
Linear-by-Linear Association	.006	1	.939
N of Valid Cases	118		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.29.

Table 5-113: Chi-Square Test for exploring the relationship between the resident's gender and residential mobility in Bearsden

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table), we can look at the *Asymp. Sig. (2-sided)* value which is associated to *Pearson Chi-Square* value. Since *Asymp. Sig. (2-sided)* value is .92, and that is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility in Bearsden between males and females.

Question 4: Is there a relationship between the resident's age and residential mobility in Bearsden?

For testing this relationship, we shall use the resident's age group as a categorical independent variable of 2 categories (1=44years and younger, 2=45 years and older) and residential mobility as a categorical dependent variable of 3 categories. Statistical test, which we are going to apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the resident's age and its residential mobility in Bearsden.

Respondent's age group (2 groups) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Respondent's age group (2 groups)	44 yrs old and younger	Count	13	4	11	28
		Expected Count	8.5	3.3	16.1	28.0
		% within Respondent's age group (2 groups)	46.4%	14.3%	39.3%	100.0%
		% within Residential mobility	36.1%	28.6%	16.2%	23.7%
		% of Total	11.0%	3.4%	9.3%	23.7%
	45 yrs +	Count	23	10	57	90
		Expected Count	27.5	10.7	51.9	90.0
		% within Respondent's age group (2 groups)	25.6%	11.1%	63.3%	100.0%
		% within Residential mobility	63.9%	71.4%	83.8%	76.3%
		% of Total	19.5%	8.5%	48.3%	76.3%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Respondent's age group (2 groups)	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.374[a]	2	.068
Likelihood Ratio	5.277	2	.071
Linear-by-Linear Association	5.289	1	.021
N of Valid Cases	118		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 3.32.

Table 5-114: Chi-Square Test for exploring the relationship between the resident's age group and residential mobility in Bearsden

As we have not violated the assumption for conducting the Chi-Square Test (16.7% of cells have expected count less than 5, and that is less than 20%) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.068), which is associated to *Pearson Chi Square*, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility between residents of Bearsden who are 44 years old or younger, and residents of Bearsden who are 45 and older.

Question 5: Is there a relationship between the resident's marital status and residential mobility in Bearsden?

In order to test this relationship, we shall use marital status as a categorical independent variable with 2 categories (1= living with a partner / married and, 2=single/divorced/separated/widowed). Residential mobility is taken as a categorical dependent variable of 3 categories. We shall apply the Chi-Square test for testing this relationship. The Null-Hypothesis is that there is no relationship between the resident's marital status and residential mobility in Bearsden.

Marital status * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Marital status	Living with a partner/ Married	Count	25	14	50	89
		Expected Count	27.2	10.6	51.3	89.0
		% within Marital status	28.1%	15.7%	56.2%	100.0%
		% within Residential mobility	69.4%	100.0%	73.5%	75.4%
		% of Total	21.2%	11.9%	42.4%	75.4%
	Single/ Divorced/ Separated/ Widowed	Count	11	0	18	29
		Expected Count	8.8	3.4	16.7	29.0
		% within Marital status	37.9%	.0%	62.1%	100.0%
		% within Residential mobility	30.6%	.0%	26.5%	24.6%
		% of Total	9.3%	.0%	15.3%	24.6%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Marital status	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.388[a]	2	.068
Likelihood Ratio	8.688	2	.013
Linear-by-Linear Association	.042	1	.838
N of Valid Cases	118		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 3.44.

Table 5-115: Chi-Square Test for exploring the relationship between the resident's marital status and residential mobility in Bearsden

As we have not violated the assumption for conducting the Chi-Square Test (16.7% of cells have expected count less than 5, and that is less than 20%) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.068), which is associated to *Pearson Chi Square*, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility in Bearsden between residents who are living with a partner or married and those who are single or divorced or separated or widowed.

Question 6: Is there a relationship between resident's highest level of formal education and residential mobility in Bearsden?

For testing this relationship, we shall employ highest level of education as a categorical independent variable of 2 categories (1=less than completed undergraduate studies, and 2=completed undergraduate or postgraduate studies), and residential mobility as a categorical dependent variable of 3 categories. Statistical test, which we are going to use, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the highest achieved level of formal education and residential mobility in Bearsden.

Highest level of education (2 groups) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Highest level of education (2 groups)	Less than completed undergraduate studies	Count	10	8	33	51
		Expected Count	15.6	6.1	29.4	51.0
		% within Highest level of education (2 groups)	19.6%	15.7%	64.7%	100.0%
		% within Residential mobility	27.8%	57.1%	48.5%	43.2%
		% of Total	8.5%	6.8%	28.0%	43.2%
	Completed undergraduate or postgraduate studies	Count	26	6	35	67
		Expected Count	20.4	7.9	38.6	67.0
		% within Highest level of education (2 groups)	38.8%	9.0%	52.2%	100.0%
		% within Residential mobility	72.2%	42.9%	51.5%	56.8%
		% of Total	22.0%	5.1%	29.7%	56.8%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Highest level of education (2 groups)	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.385[a]	2	.068
Likelihood Ratio	5.535	2	.063
Linear-by-Linear Association	3.564	1	.059
N of Valid Cases	118		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.05.

Table 5-116: Chi-Square Test for exploring the relationship between the resident's highest achieved level of formal education and residential mobility in Bearsden

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.068), which is associated to *Pearson Chi Square*, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility in Bearsden between residents who have not completed the undergraduate studies and those who have already completed undergraduate or postgraduate studies.

Question 7: Is there a relationship between resident's job situation and residential mobility in Bearsden?

For testing this relationship, we shall employ job situation as a categorical independent variable. For the purposes of this testing, this variable includes only two categories (1=employees and 2=others). Residential mobility is a categorical dependent variable of 3 categories. Statistical test, which we are going to apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the resident's job situation and its residential mobility.

Job situation, 2 groups) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Job situation, 2 groups)	Employee (Full/Part time, Self empl.)	Count	27	5	29	61
		Expected Count	18.6	7.2	35.2	61.0
		% within Job situation, 2 groups)	44.3%	8.2%	47.5%	100.0%
		% within Residential mobility	75.0%	35.7%	42.6%	51.7%
		% of Total	22.9%	4.2%	24.6%	51.7%
	Other (student,retired, looking after home...)	Count	9	9	39	57
		Expected Count	17.4	6.8	32.8	57.0
		% within Job situation, 2 groups)	15.8%	15.8%	68.4%	100.0%
		% within Residential mobility	25.0%	64.3%	57.4%	48.3%
		% of Total	7.6%	7.6%	33.1%	48.3%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Job situation, 2 groups)	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.491[a]	2	.003
Likelihood Ratio	11.918	2	.003
Linear-by-Linear Association	8.809	1	.003
N of Valid Cases	118		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.76.

Table 5-117: Chi-Square Test for exploring the relationship between the resident's job situation and residential mobility in Bearsden

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table) and, the *Asymp. Sig. (2-sided)* value (.003), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in Bearsden between residents who are employees (full-time, part-time or self employed) and others (students, retired population, people looking after home/family, unemployed and permanently sick/disabled).

Question 8: Is there a relationship between the resident's current occupation and residential mobility in Bearsden?

In order to test this relationship, we will use current occupation as a categorical independent variable of 2 categories (1=professionals, and 2=other, non-professionals), and residential mobility as a categorical dependent variable of three categories. The Null-Hypothesis tested by the Chi-Square Test is that there is no relationship between the resident's current occupation and residential mobility in Bearsden.

Current occupation (2 groups) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Current occupation (2 groups)	Professionals	Count	24	5	28	57
		Expected Count	17.4	6.8	32.8	57.0
		% within Current occupation (2 groups)	42.1%	8.8%	49.1%	100.0%
		% within Residential mobility	66.7%	35.7%	41.2%	48.3%
		% of Total	20.3%	4.2%	23.7%	48.3%
	Other, non-professionals	Count	12	9	40	61
		Expected Count	18.6	7.2	35.2	61.0
		% within Current occupation (2 groups)	19.7%	14.8%	65.6%	100.0%
		% within Residential mobility	33.3%	64.3%	58.8%	51.7%
		% of Total	10.2%	7.6%	33.9%	51.7%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Current occupation (2 groups)	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.133[a]	2	.028
Likelihood Ratio	7.230	2	.027
Linear-by-Linear Association	5.468	1	.019
N of Valid Cases	118		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.76.

Table 5-118: Chi-Square Test for exploring the relationship between resident's current occupation and residential mobility in Bearsden

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table), and the *Asymp. Sig. (2-sided)* value (.028), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in Bearsden between professionals and residents of other occupations.

From the statistical analyses on relationships between independent variables of socio-economic characteristics and residential mobility in Bearsden, it can be observed that only 2 out of 8 independent variables proved to have a statistically significant relationship with the residential mobility in Bearsden. Those two variables are: resident's job situation and its current occupation.

Statistical tests for the relationships between the variables of environmental context as the independent ones and residential mobility in Bearsden as the dependent variable

Deriving from the Questionnaire on Residential Preferences, there were 10 independent variables of environmental context of respondents in Bearsden that were analysed individually in their relationship with residential mobility in the same neighbourhood. Following are the questions that regard these relationships and for each one of them there is an explanation of the statistical significance of the result.

Question 9: Is there a relationship between the duration of living in Bearsden and residential mobility in this neighbourhood?

For testing this relationship, we shall employ the duration of living in Bearsden as a categorical independent variable of two categories (1=up to 10 years, 2=11 years and longer), and residential mobility as a categorical dependent variable of 3 categories

(1=I'd like to move to the opposite type of neighbourhood, 2=I'd like to move within the same type of neighbourhood, 3=I don't want to leave my neighbourhood). Statistical test, which we shall apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the duration of living in Bearsden and residential mobility.

Duration of living in a present neighbourhood (2 categories) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Duration of living in a present neighbourhood (2 categories)	Up to 10 years	Count	16	7	7	30
		Expected Count	9.2	3.6	17.3	30.0
		% within Duration of living in a present neighbourhood (2 categories)	53.3%	23.3%	23.3%	100.0%
		% within Residential mobility	44.4%	50.0%	10.3%	25.4%
		% of Total	13.6%	5.9%	5.9%	25.4%
	11 years and more	Count	20	7	61	88
		Expected Count	26.8	10.4	50.7	88.0
		% within Duration of living in a present neighbourhood (2 categories)	22.7%	8.0%	69.3%	100.0%
		% within Residential mobility	55.6%	50.0%	89.7%	74.6%
		% of Total	16.9%	5.9%	51.7%	74.6%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Duration of living in a present neighbourhood (2 categories)	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.539[a]	2	.000
Likelihood Ratio	19.845	2	.000
Linear-by-Linear Association	16.109	1	.000
N of Valid Cases	118		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 3.56.

Table 5-119: Chi-Square Test for exploring the relationship between duration of living in Bearsden and residential mobility in Bearsden

Since we have not violated the assumption on minimum expected cell frequency (see footnote *a* of *Chi-Square Tests* table), and the *Asymp. Sig. (2-sided)* value (.00), which is associated to *Pearson Chi-Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in Bearsden between residents who have been living in this neighbourhood for up to 10 years and those who have been living in it for 11 years or longer.

Question 10: Is there a relationship between the resident's type of neighbourhood in childhood and residential mobility in Bearsden?

In order to test this relationship, we are going to use the type of neighbourhood in the childhood as a categorical independent variable of 2 categories (1=suburban type of neighbourhood, and 2=urban or rural type of neighbourhood), and residential mobility as a categorical dependent variable of three categories. Statistical test, which we shall apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the type of neighbourhood in the childhood and residential mobility in Bearsden.

Type of neighbourhood in childhood (2 groups) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Type of neighbourhood in childhood (2 groups)	Suburban	Count	20	7	36	63
		Expected Count	19.2	7.5	36.3	63.0
		% within Type of neighbourhood in childhood (2 groups)	31.7%	11.1%	57.1%	100.0%
		% within Residential mobility	55.6%	50.0%	52.9%	53.4%
		% of Total	16.9%	5.9%	30.5%	53.4%
	Urban or rural type of neighbourhood	Count	16	7	32	55
		Expected Count	16.8	6.5	31.7	55.0
		% within Type of neighbourhood in childhood (2 groups)	29.1%	12.7%	58.2%	100.0%
		% within Residential mobility	44.4%	50.0%	47.1%	46.6%
		% of Total	13.6%	5.9%	27.1%	46.6%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Type of neighbourhood in childhood (2 groups)	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.138[a]	2	.933
Likelihood Ratio	.138	2	.933
Linear-by-Linear Association	.049	1	.824
N of Valid Cases	118		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.53.

Table 5-120: Chi-Square Test for exploring the relationship between resident's type of neighbourhood in the childhood and residential mobility in Bearsden

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5), we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.933), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility in Bearsden

between residents who lived in the same type of neighbourhood in the childhood and those who lived in uburban or rural type of neighbourhood in the childhood.

Question 11: Is there a relationship between the next-door neighbours' similarities and residential mobility in Bearsden?

In testing this relationship, the similarities with the next-door neighbours are taken as a categorical independent variable with two categories (1= there is a great diversity between the next-door neighbours; 2=there are similarities with the next-door neighbours), and residential mobility in Bearsden is a categorical dependent variable of three categories. Statistical test, which is applied in testing the relationship between these two variables, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the next-door neighbours' similarities and residential mobility in Bearsden.

Similarities with next-door neighbours * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Similarities with next-door neighbours	There is a great diversity between the neighbours	Count	8	4	22	34
		Expected Count	10.4	4.0	19.6	34.0
		% within Similarities with next-door neighbours	23.5%	11.8%	64.7%	100.0%
		% within Residential mobility	22.2%	28.6%	32.4%	28.8%
		% of Total	6.8%	3.4%	18.6%	28.8%
	There are similarities with the next-door neighbours	Count	28	10	46	84
		Expected Count	25.6	10.0	48.4	84.0
		% within Similarities with next-door neighbours	33.3%	11.9%	54.8%	100.0%
		% within Residential mobility	77.8%	71.4%	67.6%	71.2%
		% of Total	23.7%	8.5%	39.0%	71.2%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Similarities with next-door neighbours	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.178[a]	2	.555
Likelihood Ratio	1.209	2	.546
Linear-by-Linear Association	1.159	1	.282
N of Valid Cases	118		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.03.

Table 5-121: Chi-Square Test for exploring the relationship between next-door neighbours' similarities and residential mobility in Bearsden

As we have not violated the assumption for conducting the Chi-Square Test (16.7% of cells have expected count less than 5), we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.555), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility in Bearsden between residents who think that there are no similarities between them and their next-door neighbours and those who think there are similarities between them and their next-door neighbours.

Question 12: Is there a relationship between happiness with contacts with the next-door neighbours and residential mobility in Bearsden?

In order to test this relationship, we will use happiness with contacts with the next-door neighbours as a categorical independent variable of 2 categories (1= less than agree, 2=agree to strongly agree). Residential mobility is taken as a categorical dependent variable of 3 categories. Statistical test, which will be applied, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the resident's happiness with contacts with the next-door neighbours and residential mobility in Bearsden.

Happy with contacts with neighbours (2 groups) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Happy with contacts with neighbours (2 groups)	Less than agree	Count	6	1	12	19
		Expected Count	5.8	2.3	10.9	19.0
		% within Happy with contacts with neighbours (2 groups)	31.6%	5.3%	63.2%	100.0%
		% within Residential mobility	16.7%	7.1%	17.6%	16.1%
		% of Total	5.1%	.8%	10.2%	16.1%
	Agree to strongly agree	Count	30	13	56	99
		Expected Count	30.2	11.7	57.1	99.0
		% within Happy with contacts with neighbours (2 groups)	30.3%	13.1%	56.6%	100.0%
		% within Residential mobility	83.3%	92.9%	82.4%	83.9%
		% of Total	25.4%	11.0%	47.5%	83.9%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Happy with contacts with neighbours (2 groups)	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.960[a]	2	.619
Likelihood Ratio	1.138	2	.566
Linear-by-Linear Association	.055	1	.814
N of Valid Cases	118		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 2.25.

Table 5-122: Chi-Square Test for exploring the relationship between happiness with contacts with the next-door neighbours and residential mobility in Bearsden

As we have not violated the assumption for conducting the Chi-Square Test (16.7% of cells have expected count less than 5, and that is less than 20%), we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.619), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility in Bearsden between residents who are less than happy with contacts with their next-door neighbours and those residents who are happy or very happy with contacts with their next-door neighbours.

Question 13: Is there a relationship between resident's feeling of safety in Bearsden and residential mobility in the same neighbourhood?

In order to test this relationship, we shall use the feeling of being very safe in the residential neighbourhood as a categorical independent variable of two categories (1=less than agree, and 2=agree to strongly agree), and residential mobility as a categorical dependent variable of three categories. For testing the relationship between these two variables, we are going to apply the Chi-Square Test. The Null-Hypothesis is that there is no relationship between feeling of safety in the residential neighbourhood and residential mobility in Bearsden.

Feeling very safe in my neighbourhood (2 groups) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Feeling very safe in my neighbourhood (2 groups)	Less than agree	Count	10	6	16	32
		Expected Count	9.8	3.8	18.4	32.0
		% within Feeling very safe in my neighbourhood (2 groups)	31.3%	18.8%	50.0%	100.0%
		% within Residential mobility	27.8%	42.9%	23.5%	27.1%
		% of Total	8.5%	5.1%	13.6%	27.1%
	Agree to strongly agree	Count	26	8	52	86
		Expected Count	26.2	10.2	49.6	86.0
		% within Feeling very safe in my neighbourhood (2 groups)	30.2%	9.3%	60.5%	100.0%
		% within Residential mobility	72.2%	57.1%	76.5%	72.9%
		% of Total	22.0%	6.8%	44.1%	72.9%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Feeling very safe in my neighbourhood (2 groups)	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.206[a]	2	.332
Likelihood Ratio	2.064	2	.356
Linear-by-Linear Association	.377	1	.539
N of Valid Cases	118		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 3.80.

Table 5-123: Chi-Square Test for exploring the relationship between the resident's feeling of safety in Bearsden and residential mobility

As we have not violated the assumption for conducting the Chi-Square Test (16.7% cells have expected count less than 5, and that is less than 20%), we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.332), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility between residents who feel less than safe living in Bearsden and those who feel safe or very safe living in Bearsden.

Question 14: Is there a relationship between the perceived pollution in Bearsden and residential mobility?

In order of testing this relationship, we shall use perceived pollution problems in Bearsden as a categorical independent variable of two categories (1=yes, 2=no), and residential mobility as a categorical dependent variable of three categories. Statistical test, which we shall apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the perceived pollution problems in Bearsden and residential mobility in Bearsden.

Does your neihbourhood have pollution problems * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Does your neihbourhood have pollution problems	Yes	Count	8	8	9	25
		Expected Count	7.6	3.0	14.4	25.0
		% within Does your neihbourhood have pollution problems	32.0%	32.0%	36.0%	100.0%
		% within Residential mobility	22.2%	57.1%	13.2%	21.2%
		% of Total	6.8%	6.8%	7.6%	21.2%
	No	Count	28	6	59	93
		Expected Count	28.4	11.0	53.6	93.0
		% within Does your neihbourhood have pollution problems	30.1%	6.5%	63.4%	100.0%
		% within Residential mobility	77.8%	42.9%	86.8%	78.8%
		% of Total	23.7%	5.1%	50.0%	78.8%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Does your neihbourhood have pollution problems	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.438[a]	2	.001
Likelihood Ratio	11.460	2	.003
Linear-by-Linear Association	2.081	1	.149
N of Valid Cases	118		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 2.97.

Table 5-124: Chi-Square Test for exploring the relationship between resident's perceived pollution in Bearsden and residential mobility in Bearsden

As we have not violated the assumption for conducting the Chi-Square Test (16.7% of cells have expected count less than 5 and that is less than 20%) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.001), which is associated to *Pearson Chi Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in Bearsden between residents who think that there are pollution problems in Bearsden and those who think there are no pollution problems in Bearsden.

Question 15: Is there a relationship between resident's satisfaction with the public transport system organisation in Bearsden and residential mobility?

For testing this relationship, we shall use satisfaction with the public transport system organisation in Bearsden as a categorical independent variable of two categories (1=less than agree and, 2=agree to strongly agree), and residential mobility as a categorical dependent variable of three categories. The Null-Hypothesis to be tested by the Chi-Square Test is that there is no relationship between the satisfaction with the public transport system organisation in Bearsden and residential mobility of its residents.

Very well organised public transport in the neighbourhood (2 categories) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Very well organised public transport in the neighbourhood (2 categories)	Less than agree	Count	30	10	57	97
		Expected Count	29.6	11.5	55.9	97.0
		% within Very well organised public transport in the neighbourhood (2 categories)	30.9%	10.3%	58.8%	100.0%
		% within Residential mobility	83.3%	71.4%	83.8%	82.2%
		% of Total	25.4%	8.5%	48.3%	82.2%
	Agree to strongly agree	Count	6	4	11	21
		Expected Count	6.4	2.5	12.1	21.0
		% within Very well organised public transport in the neighbourhood (2 categories)	28.6%	19.0%	52.4%	100.0%
		% within Residential mobility	16.7%	28.6%	16.2%	17.8%
		% of Total	5.1%	3.4%	9.3%	17.8%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Very well organised public transport in the neighbourhood (2 categories)	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.264[a]	2	.531
Likelihood Ratio	1.134	2	.567
Linear-by-Linear Association	.034	1	.853
N of Valid Cases	118		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 2.49.

Table 5-125: Chi-Square Test for exploring the relationship between the resident's satisfaction with the public transport system organisation in Bearsden and residential mobility

As we have not violated the assumption for conducting the Chi-Square Test (16.7% of cells have expected count less than 5, and that is less than 20%) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.531), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is <u>not</u> a statistically significant difference in residential mobility in Bearsden between residents who are less than satisfied with the public transport system organisation in Bearsden and those who are satisfied or very satisfied with the public transport system organisation in Bearsden.

Question 16: Is there a relationship between the resident's satisfaction with the overall facilities provided by Bearsden and residential mobility?

To test this relationship, we shall use: being very happy with the overall facilities provided by the residential neighbourhood as a categorical independent variable of two categories (1=less than agree and, 2=agree to strongly agree), and residential mobility as a categorical dependent variable of three categories. Statistical test, which we shall apply, is the Chi-Square Test. The Null-Hypothesis is that there is no relationship between the satisfaction with the overall facilities provided by the residential neighbourhood (Bearsden) and residential mobility in Bearsden.

Very happy with overall facilities provided by neighbourhood (2 categories) * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Very happy with overall facilities provided by neighbourhood (2 categories)	Less than agree	Count	18	4	30	52
		Expected Count	15.9	6.2	30.0	52.0
		% within Very happy with overall facilities provided by neighbourhood (2 categories)	34.6%	7.7%	57.7%	100.0%
		% within Residential mobility	50.0%	28.6%	44.1%	44.1%
		% of Total	15.3%	3.4%	25.4%	44.1%
	Agree to strongly agree	Count	18	10	38	66
		Expected Count	20.1	7.8	38.0	66.0
		% within Very happy with overall facilities provided by neighbourhood (2 categories)	27.3%	15.2%	57.6%	100.0%
		% within Residential mobility	50.0%	71.4%	55.9%	55.9%
		% of Total	15.3%	8.5%	32.2%	55.9%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Very happy with overall facilities provided by neighbourhood (2 categories)	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.878[a]	2	.391
Likelihood Ratio	1.935	2	.380
Linear-by-Linear Association	.186	1	.666
N of Valid Cases	118		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.17.

Table 5-126: Chi-Square Test for exploring the relationship between the resident's satisfaction with the overall facilities provided by Bearsden and residential mobility

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5) we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.391), which is associated to *Pearson Chi Square* value, is above .05, we accept the Null-Hypothesis and conclude that there is not a statistically significant difference in residential mobility in Bearsden between residents who are less than satisfied with the overall facilities provided by Bearsden and those who are satisfied and very satisfied with the overall facilities provided by Bearsden.

Question 17: Is there a relationship between the resident's perception on lack of certain facilities in Bearsden and residential mobility?

For testing this relationship, we shall use: the lack of facilities in Bearsden as a categorical independent variable of two categories (1=no facilities are lacking in the neighbourhood and, 2=there is a lack of certain facilities), and residential mobility as a categorical dependent variable of three categories. The Null-Hypothesis, which we shall test by Chi-Square Test, is that there is no relationship between the lack of certain facilities in Bearsden and residential mobility in the same neighbourhood.

Lack of facilities in the neighbourhood * Residential mobility Crosstabulation

			Residential mobility			
			I'd like to move to oppos. type of neigh. or out of Glw.	I would like to move within the same type of neighbourhood	I don't want to leave my neighbourhood	Total
Lack of facilities in the neighbourhood	No facilities are lacking in the neighbourhood	Count	7	8	38	53
		Expected Count	16.2	6.3	30.5	53.0
		% within Lack of facilities in the neighbourhood	13.2%	15.1%	71.7%	100.0%
		% within Residential mobility	19.4%	57.1%	55.9%	44.9%
		% of Total	5.9%	6.8%	32.2%	44.9%
	There is a lack of certain facilities	Count	29	6	30	65
		Expected Count	19.8	7.7	37.5	65.0
		% within Lack of facilities in the neighbourhood	44.6%	9.2%	46.2%	100.0%
		% within Residential mobility	80.6%	42.9%	44.1%	55.1%
		% of Total	24.6%	5.1%	25.4%	55.1%
Total		Count	36	14	68	118
		Expected Count	36.0	14.0	68.0	118.0
		% within Lack of facilities in the neighbourhood	30.5%	11.9%	57.6%	100.0%
		% within Residential mobility	100.0%	100.0%	100.0%	100.0%
		% of Total	30.5%	11.9%	57.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.592[a]	2	.001
Likelihood Ratio	14.447	2	.001
Linear-by-Linear Association	11.623	1	.001
N of Valid Cases	118		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.29.

Table 5-127: Chi-Square Test for exploring the relationship between the resident's perception on lack of certain facilities in Bearsden and residential mobility in Bearsden

As we have not violated the assumption for conducting the Chi-Square Test (0 cells have expected count less than 5), we can look at the outputs of *Chi-Square Test Table*. Since the *Asymp. Sig. (2-sided)* value (.001), which is associated to *Pearson Chi Square* value, is less than .05, we reject the Null-Hypothesis and conclude that there is a statistically significant difference in residential mobility in Bearsden between residents who think that no facilities are lacking in Bearsden and those who think there is a lack of certain facilities in Bearsden.

From the statistical analyses on the relationships between independent variables of environmental context on one side, and residential mobility in Bearsden on the other, it can be noticed that only 2 out of 9 independent variables showed a statistically significant relationship with the residential mobility in Bearsden. Those two independent variables are: perceived pollution problems in the residential neighbourhood and perception on lack of certain facilities in the residential neighbourhood. It should be noted that in the analyses regarding residential mobility in Bearsden there were 4 independent variables of environmental context less. These four variables (present type of home, ownership of home, possession of a private garden and perception on importance of having a private garden) were not included in the statistical analyses because in relation with the residential mobility they have not met the assumption required for conducting the Chi-Square Test.

Statistical test for the relationships between residential preference components: residential mobility, community sentiment and community evaluation

Final statistical analysis in Bearsden regarded testing of relationships between following components of residential preference: residential mobility, community sentiment and community evaluation. For the purpose of this analysis, Pearson correlation has been employed.

Descriptive Statistics

	Mean	Std. Deviation	N
Wish to leave residential neighbourhood	1.73	.90	118
Emotional attachment to Bearsden	4.18	.90	118
Total neighbourhood satisfaction, Bearsden	32.13	4.40	118

Correlations

		Wish to leave residential neighbourhood	Emotional attachment to Bearsden	Total neighbourhood satisfaction, Bearsden
Wish to leave residential neighbourhood	Pearson Correlation	1.000	-.622**	-.140
	Sig. (2-tailed)	.	.000	.131
	N	118	118	118
Emotional attachment to Bearsden	Pearson Correlation	-.622**	1.000	.123
	Sig. (2-tailed)	.000	.	.183
	N	118	118	118
Total neighbourhood satisfaction, Bearsden	Pearson Correlation	-.140	.123	1.000
	Sig. (2-tailed)	.131	.183	.
	N	118	118	118

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5-128: Pearson Correlation between variables: residential mobility, community sentiment and community evaluation in Bearsden

For interpreting the strength of correlation between the three components of residential preference in Bearsden, guidelines given by Cohen (1988) can be used. Following these guidelines, it can be observed that there is a large negative correlation (r=-.622) between emotional attachment (community sentiment) in Bearsden and residential mobility (wish to leave this residential neighbourhood). On the other hand, correlation between community evaluation and residential mobility in Bearsden is small (r=-.14). There is also a small positive correlation between community sentiment and community evaluation in Bearsden (r=.188).

6 Discussion of the Statistical Analyses Results on Residential Preferences in the two Neighbourhoods: the West End and Bearsden

The questionnaire survey results were given in Descriptive Statistics in the Chapter 4 of this thesis. Statistical analyses conducted in Chapter 5 provided answers to the research questions derived from the research task. Statistical analyses results serve for the testing of hypotheses stated in Chapter 3, which regarded similarities and differences between the two neighbourhoods (the West End and Bearsden) in their inhabitants' residential preferences structure.

Previously obtained results from Chapter 4 and 5 will here be discussed with the aim of achieving an overview of the influences that a number of parameters of two different neighbourhood types and their residents' characteristics have on main residential preference dimensions. The residential preference dimensions were fully described in Chapter 2 (context of this study) and they involved: attachment (community sentiment and community evaluation), social and environmental context, physical planning issues and residential mobility.

6.1 Interpretations of the Descriptive Statistics Results

As a preliminary step to statistical analyses, Descriptive Statistics procedures were conducted in Chapter 4. These procedures were applied to all the variables deriving from the questionnaire, however, the choice of a procedure depended on the type of variables, e.g. categorical variables required one and continuous another type of procedure.

All categorical variables were presented in descriptive statistics procedures by tables, in which one can find frequency and percentage for each variable category as well as the total number of respondents for the question in each neighbourhood. Beside table representation, categorical variables were also represented visually, in forms of bar graphs, which were given comparatively for the two neighbourhoods.

For some categorical variables, descriptive statistics given in percentages could have been compared with key statistics from secondary sources of data (2001 Census) for the West End and Bearsden.

Regarding the descriptive statistics procedures for continuous variables, they involved histograms with mean values and standard deviations, and line graphs for a visual representation of comparison between the two neighbourhoods.

It is important to stress that interpretations of the descriptive statistics results relate only to the samples obtained from each neighbourhood and not to the population as a whole. The limitation of descriptive statistics is that they describe only the specific samples that were used in the study. In particular, the descriptive statistics do not tell us whether or not the samples are representative of the general population. For that reason it is important to apply inferential statistics that use limited information from samples to answer questions about populations.

6.1.1 Comparison between the Results of 2001 Census and Descriptive Statistics for the two Neighbourhoods

As it was previously mentioned, for certain categorical variables of the survey on residential preferences in the West End and Bearsden, there was a possibility to compare their descriptive statistics results with the results from 2001 Census for the same areas. This comparison allows us to observe to which extent the samples in the West End and Bearsden were representative for the whole population of each of the two neighbourhoods regarding the following variables: household structure; age structure; marital status; occupations; economical activity; present type of home; ownership of home; travelling modes; and number of cars or vans.

Household structure	Type of neighbourhood	2001 Census (%)	Sample (%)	Difference between the sample and Census data (%)
Single pensioner	the West End	9.68	10.9	+1.22
	Bearsden	13.47	12.7	-0.77
Single adult (non pensioner)	the West End	35.2	14.1	-21.1
	Bearsden	7.61	4.2	-3.41
2+ pensioners	the West End	2.9	14.1	+11.2
	Bearsden	11.93	39.8	+27.87
2+ adults, no children	the West End	23.67	26.6	+2.93
	Bearsden	17.45	3.42	-14.05
Adults with dependent children	the West End	14.49	26.6	+12.11
	Bearsden	32.56	25.4	-7.16
Adults with non-dependent children	the West End	4.2	7.8	+3.6
	Bearsden	13.43	14.4	+0.97
Other	the West End	9.86	-	-
	Bearsden	3.54	-	-

Table 6-1: Comparison between the results of 2001 Census and Descriptive Statistics on household structure in the West End and Bearsden

As it can be observed from the table above, in the West End, the greatest differences between the Census and the sample data regarding household structure are for the category of single adult (non pensioner) since there is a higher percentage of the whole population belonging to this category (35.2%) than it was actually sampled (14.1%). In Bearsden, however, the greatest difference appears in the category of 2+ pensioners, where the percentage of the whole population belonging to this category (11.93%) is smaller than the percentage in the sample (39.8%).

Age structure	Type of neighbourhood	2001 Census (%)	Sample (%)	Difference between the sample and Census data (%)
0-14	the West End	9.54	-	-
	Bearsden	19.12	-	-
15-29	the West End	36.69	22.7	-13.99
	Bearsden	15.5	3.4	-12.1
30-44	the West End	26.19	37.5	+11.31
	Bearsden	20.84	20.3	-0.54
45-59	the West End	14.67	19.5	+4.83
	Bearsden	22.28	32.2	+9.92
60+	the West End	12.92	20.3	+7.38
	Bearsden	22.26	44.1	+21.84

Table 6-2: Comparison between the results of 2001 Census and Descriptive Statistics on age structure in the West End and Bearsden

From the table given above, it can be noticed that in the West End, there is a greater difference between the 2001 Census data and sample data for the category 15-29. For this age group, the percentage in the Census was higher (36.69%) than the percentage in the sample (22.7%). However, in Bearsden as well, there is a great difference between the Census and sample data for the category 60+. For this age group, the percentage of sampled population (44.1%) was much higher than the actual percentage in the whole population of Bearsden (22.26%).

Marital status	Type of neighbourhood	2001 Census (%)	Sample (%)	Difference between the sample and Census data (%)
Single	the West End	48.85	30.5	-18.35
	Bearsden	22.85	5.9	-16.95
Living with a partner/ married	the West End	38.48	57.8	+19.32
	Bearsden	63.85	75.4	+11.55
Separated/ Divorced	the West End	8.31	3.9	-4.41
	Bearsden	5.24	7.6	+2.36
Widowed	the West End	4.35	7.8	+3.45
	Bearsden	8.06	11.0	+2.94

Table 6-3: Comparison between the results of 2001 Census and Descriptive Statistics on marital status in the West End and Bearsden

From the table given above, it can be noticed that, in both neighbourhoods the differences between the Census and sample data appear in two categories: single and living with a partner/ married. In each neighbourhood, the percentage of singles that was sampled was smaller than their percentage in the population, while the percentage of living with a partner/ married was higher in the sample than in the actual population.

Occupations	Type of neighbourhood	2001 Census (%)	Sample (%)	Difference between the sample and Census data (%)
Professional etc.	the West End	53.08	54.7	+1.62
	Bearsden	40.78	48.3	+7.52
Managerial technical	the West End	23.69	2.3	-21.37
	Bearsden	31.47	6.8	-24.67
Skilled	the West End	16.29	6.3	-9.99
	Bearsden	22.1	7.6	-14.5
Other	the West End	6.95	36.7	+29.75
	Bearsden	5.66	37.3	+31.64

Table 6-4: Comparison between the results of 2001 Census and Descriptive Statistics on occupations in the West End and Bearsden

As it can be observed from the table on residents' occupations, in both the West End and Bearsden, there is a large difference between the 2001 Census data and sample data in the two categories of occupations: managerial technical and category of 'other'. For example, there is a much higher percentage of population in each of the two neighbourhoods that is of managerial technical occupations than it was actually sampled. On the other hand, in both neighbourhoods, Census data show that much less people are of 'other' occupations than there is in the sample.

Economically active and inactive	Type of neighbourhood	2001 Census (%)	Sample (%)	Difference between the sample and Census data (%)
Employee (full time)	the West End	42.68	39.1	-3.58
	Bearsden	40.57	36.4	-4.17
Employee (part time)	the West End	6.07	9.4	+3.33
	Bearsden	12.26	5.9	-6.36
Self employed	the West End	8.45	14.1	+5.65
	Bearsden	9.42	9.3	-0.12
Unemployed	the West End	3.48	1.6	-1.88
	Bearsden	1.91	0	-1.91
Student	the West End	23.16	10.2	-12.96
	Bearsden	9.64	0.8	-8.84
Retired	the West End	6.38	19.5	+13.12
	Bearsden	16.04	37.3	+21.26
Looking after home/ family	the West End	2.91	3.9	+0.99
	Bearsden	5.26	8.5	+3.24
Permanently sick/ Disabled	the West End	4.1	0.8	-3.3
	Bearsden	2.81	1.7	-1.11
Other	the West End	2.78	-	-
	Bearsden	2.08	-	-

Table 6-5: Comparison between the results of 2001 Census and Descriptive Statistics on economically active and inactive in the West End and Bearsden

From the table given above it can be noticed that, in both neighbourhoods, the percentage of retired people in the sample was higher than the percentage of this category according to the last census data. Also, in the West End, the difference can

be noticed for the category of students where the Census shows higher percentage (23.16%) than it was actually sampled (10.2%).

Present type of home	Type of neighbourhood	2001 Census (%)	Sample (%)	Difference between the sample and Census data (%)
Detached	the West End	0.94	4.7	+3.76
	Bearsden	44.32	51.7	+7.38
Semi-detached	the West End	1.48	5.5	+4.02
	Bearsden	32.34	37.3	+4.98
Terraced	the West End	4.7	21.9	+17.2
	Bearsden	10.73	2.5	-8.23
Purpose built block of flats, or tenements, and conversions	the West End	92.53	68.0	-24.53
	Bearsden	11.61	8.5	-3.11
Other	the West End	0.35	-	-
	Bearsden	1.01	-	-

Table 6-6: Comparison between the results of 2001 Census and Descriptive Statistics on present type of home in the West End and Bearsden

As it can be observed from the table above, in the West End, the percentage of total population living in purpose built block of flats, or tenements, and conversions (92.53%) is much higher than the percentage of this category in the sample (68%). In Bearsden, however, the difference is present between the Census and descriptive statistics results for the category of terraced homes, with a higher percentage of terraced homes in the 2001 Census (10.73%) than in the sample (2.5%).

Ownership of home	Type of neighbourhood	2001 Census (%)	Sample (%)	Difference between the sample and Census data (%)
Owner occupied	the West End	61.82	82.8	+20.98
	Bearsden	92.8	98.3	+5.5
Other (non-owner occupied)	the West End	38.18	17.2	-20.98
	Bearsden	7.2	1.7	-5.5

Table 6-7: Comparison between the results of 2001 Census and Descriptive Statistics on ownership of home in the West End and Bearsden

From the table given above, it can be noticed that in the West End, a higher percentage of owner-occupiers was sampled (82.8%) than it was present in the whole population of this neighbourhood (61.82%).

Travelling modes	Type of neighbourhood	2001 Census (%)	Sample (%)	Difference between the sample and Census data (%)
Private car	the West End	33.4	37.5	+4.46
	Bearsden	65.74	80.5	+14.74
Public transport	the West End	26.96	22.7	-4.26
	Bearsden	20.97	13.6	-7.37
Walk	the West End	30.03	36.7	+6.67
	Bearsden	5.84	4.2	-1.64
Other	the West End	9.99	3.1	-6.89
	Bearsden	7.45	1.7	-5.75

Table 6-8: Comparison between the results of 2001 Census and Descriptive Statistics on travelling modes in the West End and Bearsden

Previous table shows that in the category private car, the percentage of whole Bearsden population using this travelling mode is smaller (65.74%) than the

percentage of sampled population using it (80.5%). Regarding other categories of travelling modes, in both neighbourhoods, 2001 Census data and descriptive statistics are quite similar.

Number of cars or vans	Type of neighbourhood	2001 Census (%)	Sample (%)	Difference between the sample and Census data (%)
None	the West End	39.69	25.0	-14.69
	Bearsden	11.12	7.6	-3.52
One	the West End	46.35	56.3	+9.95
	Bearsden	44.11	39.0	-5.11
Two or more	the West End	13.95	18.8	+4.85
	Bearsden	44.77	53.4	+8.63

Table 6-9: Comparison between the results of 2001 Census and Descriptive Statistics on number of cars or vans in the West End and Bearsden

As it can be observed from the previous table, the difference between 2001 Census and descriptive statistics appear in the West End for the category of no cars or vans, where the percentage was higher for the whole population (39.69%) than for the sample (25.0%).

6.1.2 Interpretations of the Descriptive Statistics Results for Socio-economic Features in the two Neighbourhoods

The first descriptive statistics analysis in Chapter 4 is on sample sizes in the two neighbourhoods (see Table 4-1). Since this analysis showed that sample sizes in both neighbourhoods were almost equal, it was possible to make a comparison between the two neighbourhoods when interpreting descriptive statistics results of same variables.

Interpretations of descriptive statistics for socio-economic features in the two neighbourhoods are given in the following general table.

Variable name	Descriptive statistics interpretation in the West End and Bearsden	Table/figure reference in Chapter 4
Household size	In both neighbourhoods, the largest number of households is with 2 people.	tab. 4-2
Household type	In the West End, most respondents were adults 44yrs and younger without children and parents with young children, while in Bearsden most respondents were adults above age 45 without children living in the household.	tab. 4-3
Respondent's gender	In each neighbourhood percentage of male and female respondents was almost equal.	tab. 4-4
Respondent's age group	In the West End, the majority of respondents were younger than 44yrs, and in Bearsden, most respondents were 60yrs old and above.	tab. 4-5
Marital status	In both neighbourhoods, most respondents were married/ living with a partner. In the West End there was also a large number of singles.	tab. 4-6
Highest level of education	In both neighbourhoods, most respondents were with completed undergraduate and postgraduate education. In the West End, over 40% of respondents had completed postgraduate education.	tab. 4-7
Current occupation	In both neighbourhoods, most respondents were of professional occupation: 54.7% in the West End and 48.3% in Bearsden.	tab. 4-8
Job situation	In the West End, most respondents were employees, while in Bearsden there was a large number of retired population (37.3%).	tab. 4-9

Table 6-10: Summary of interpretations for the Descriptive Statistics Results for Socio-economic Features in the two Neighbourhoods

6.1.3 Interpretations for the Descriptive Statistics Results for Characteristics of Respondent's Environment in the two Neighbourhoods

Discussion on the descriptive statistics results for characteristics of respondent's environment in the two neighbourhoods is given in the following table, which like in the previous interpretations, consists of: variable name, descriptive statistics interpretation in the West End and Bearsden, and table/ figure reference in Chapter 4.

Variable name	Descriptive statistics interpretation in the West End and Bearsden	Table/figure reference in Chapter 4
Type of home	In the West End, the largest number of respondents (over 50%) lived in tenement flats, and in Bearsden, respondents mainly lived in detached and semi-detached houses (over 80%).	tab. 4-10
Ownership of home	In both neighbourhoods, the majority of respondents lived in owner occupied homes. In Bearsden, almost all respondents lived in owner occupied homes.	tab. 4-11
Duration of living in a present home	In the West End, the largest number of respondents has lived in their present home for less than 5 years, while in Bearsden most respondents have lived in their present home for more than 20 years.	tab. 4-12
Duration of living in a present neighbourhood	In both neighbourhoods, most respondents have lived in the same neighbourhood (i.e. the West End or Bearsden) for more than 20 years.	tab. 4-13
Type of home in childhood	In both neighbourhoods, the largest number of respondents used to live in their childhood in houses (detached/ semi-detached and terraced).	tab. 4-14
Type of neighbourhood in childhood	In the West End, almost an equal number of respondents lived in an urban and suburban type of neighbourhood in their childhood, and in Bearsden, more than half of the respondents lived in a suburban type of neighbourhood when they were children.	tab. 4-15
Attachment to a present neighbourhood	In both neighbourhoods, descriptive statistics results on emotional attachment are concentrated around higher values. In Bearsden, there is a strong negative skewness of graph on emotional attachment to the residential neighbourhood.	fig. 4-14 fig. 4-15
Attraction of convenient location of neighbourhood	Both neighbourhoods exhibit normal distribution of this variable. In the West End, most responses are concentrated around mildly agree, and in Bearsden, responses are concentrated around neutral and mildly agree.	fig. 4-17
Attraction of a 'village feel' (friendly people)	In both neighbourhoods, this variable has a normal distribution, with most responses concentrated around mildly agree.	fig. 4-18
Attraction of facilities, amenities and house values	Descriptive statistics graphs show normal distribution of this variable in both West End and Bearsden with most responses concentrated around mildly agree.	fig. 4-19

Variable name	Descriptive statistics interpretation in the West End and Bearsden	Table/figure reference in Chapter 4
Attraction of quietness and safety	In both neighbourhoods, this variable has a normal distribution with most responses concentrated around mildly agree.	fig. 4-20
Attraction of good neighbours	In the West End, most respondents are neutral or mildly agree, while in Bearsden most respondents mildly agree or agree with the like of good neighbours in the residential neighbourhood.	fig. 4-21
Attrac. of public transport system	In the West End, most respondents mildly agree, and in Bearsden, most respondents are neutral/undecided on this like in the residential neighbourhood.	fig. 4-22
Attraction of env. quality and cleanliness	In both neighbourhoods, this variable shows normal distribution, with most responses concentrated around mildly agree.	fig. 4-23
Home having a garden	In the West End, most respondents have a communal garden adjacent to their home, while in Bearsden, private garden is the most common.	tab. 4-16
High importance of having a private garden	In the West End, most respondents disagree with private garden having a high importance for them, while in Bearsden, most respondents strongly agree with high importance of having a private garden.	tab. 4-17
Similarities with next-door neighbours	In the West End the largest number of respondents thinks there is a great diversity between them and next-door neighbours, while in Berasden, most respondents think that main similarities between them and next-door neighbours are attitude, lifestyle and shared values.	tab. 4-18
Meeting the next-door neighbours	In both neighbourhoods, there is a normal distribution of this variable with most respondents meeting their next-door neighbours occasionally.	fig. 4-27
Happiness with contacts with the next-door neighbours	In both neighbourhoods, the majority of respondents agrees with being happy with contacts with next-door neighbours.	fig. 4-28
Feeling very safe in residential neighbourhood	In both neighbourhoods the largest number of respondents agrees with feeling safe in the residential neighbourhood.	fig. 4-29
Pollution problems in the neighbourhood	In both neighbourhoods the majority of respondents (over 70%) thinks there are no pollution problems in their residential neighbourhood.	tab. 4-19

Table 6-11: Summary of interpretations for the Descriptive Statistics Results for Characteristics of Respondent's Environment in the two Neighbourhoods

6.1.4 Interpretations for the Descriptive Statistics Results for Transportation Habits and Distances to Places of Daily Activity for Respondents in the two Neighbourhoods

Like in the previous sections, the interpretation of the descriptive statistics results for transportation habits and distances to places of daily activity will be given in one general table.

Variable name	Descriptive statistics interpretation in the West End and Bearsden	Table/figure reference in Chapter 4
Everyday most common means of transportation	In the West End most respondents use equally private car and walk, while in Bearsden, majority (80.5%) uses a private car as everyday most common means of transportation.	tab. 4-20
Frequency of walks	Majority of respondents in the West End walk several times a day and in Bearsden largest number of respondents walk several times a week.	fig. 4-32
Frequency of using the public transport system	In the West End, most respondents use public transport more frequently than respondents in Bearsden.	fig. 4-33
Frequency of using a private car	In the West End, respondents use a private car less frequently than respondents in Bearsden where the majority said they were using a private car several times a day.	fig. 4-34
Satisfaction with the public transport system organisation	In the West End, the majority of respondents agreed with being satisfied with the public transport system organisation in the neighbourhood, while in Bearsden the largest number of respondents was neutral/ undecided.	fig. 4-35
Number of private cars in the household	In the West End, the largest number of respondents was with one car in the household and 25% of respondents didn't have any car in the household, while in Bearsden, the majority of respondents was with two or more cars in the household and only 7.6% had no cars at all.	tab. 4-21
Possibility to manage without a car	In both neighbourhoods, among the respondents who had a car in the household, the largest number of them (64.6% in the West End and 80.7% in Bearsden) stated they couldn't manage without a car.	tab. 4-22
Need for an additional car in the household	In both neighbourhoods almost all respondents who already had a car or cars in the household said they wouldn't require an additional one.	tab. 4-23

Variable name	Descriptive statistics interpretation in the West End and Bearsden	Table/figure reference in Chapter 4
Distance to place of work or daily activity	In the West End, almost half of the respondents were travelling for up to 1 mile from their home to their place of work or daily activity, and in Bearsden 61.9% of respondents travelled between 1 and 10 miles to their place of work or daily activity.	tab. 4-24
Distance of child(ren) nursery/ school from home	In the West End, most of the respondents' children travelled up to 1 mile to their nursery/ school and in Bearsden an almost equal number of respondents' children travelled between 1 and 10 miles or up to 1 mile to their nursery/ school.	tab. 4-25
How do child(ren) go to their nursery/ school	In the West End almost equal number of respondents' children travelled to their nursery/ school by a private car and on foot, while in Bearsden, most respondents' children (57.4%) travelled to their nursery/ school by a private car.	tab. 4-26
Transportation to the city centre	In the West End, most respondents travel by public transport and in Bearsden most of them travel by a private car to the city centre.	tab. 4-27
Transportation for daily shopping	In the West End, the majority of respondents walks for daily shopping, while in Bearsden 62% use a private car for daily shopping.	tab. 4-28
Transportation for weekly shopping	In both neighbourhoods, the majority of respondents uses a private car to reach weekly shopping facilities. In Bearsden almost all respondents use a private car for weekly shopping.	tab. 4-29
Transportation to a health centre	In the West End, the largest number of respondents goes on foot to a health centre, while in Bearsden, the majority uses a private car for reaching this facility.	tab. 4-30
Transportation to a sport centre	In both neighbourhoods, the largest number of respondents uses a private car to go to a sports centre, however, in the West End, almost half of the respondents walk or use a public transport to reach a sport centre.	tab. 4-31
Transportation to green/ open spaces	In the West End, the majority of respondents walks to green/ open spaces, and in Bearsden, the majority of respondents (74.3%) uses a private car for transportation to green/ open spaces.	tab. 4-32
Transportation to post office, bank and other adminstration	In the West End, respondents in the majority walk to post office, bank and other administration, while in Bearsden, there are more respondents (slightly over 50%) who use a private car for reaching these facilities.	tab. 4-33
Transportation to the library	In the West End, the largest number of respondents walks to the library, and in Bearsden, there is almost an equal number of respondents using a private car or walking and using public transport for reaching the library.	tab. 4-34

Variable name	Descriptive statistics interpretation in the West End and Bearsden	Table/figure reference in Chapter 4
Transportation to cinema and theatre	In the West End, there is an almost equal number of respondents who uses a private car, public transport and walks to go to the cinema/ theatre, while in Bearsden the majority of respondents uses a private car to reach these facilities.	tab. 4-35
Transportation to restaurants, pubs and cafés	In the West End, the largest number of respondents walks and uses a public transport system (86.3%) to go to the restaurants, pubs and cafés, and in Bearsden, most respondents use a private car for transportation to these facilities.	tab. 4-36

Table 6-12: Summary of interpretations for the Descriptive Statistics Results for Transportation Habits and Distances to Places of Daily Activity for Respondents in the two Neighbourhoods

6.1.5 Interpretations for the Descriptive Statistics Results for the Respondents' use of Facilities in the two Neighbourhoods

In discussing descriptive statistics results for the respondents' use of facilities in the West End and Bearsden, the following table provides a general overview.

Variable name	Descriptive statistics interpretation in the West End and Bearsden	Table/figure reference in Chapter 4
Frequency in going to the city centre	In the West End, most respondents are going more frequently to the city centre in comparison to the respondents from Bearsden.	fig. 4-52
Frequency in daily shopping	In both neighbourhoods, most respondents are using daily shopping facilities several times a week, and in the West End, there is a large number of respondents who use this facilities once a day or more frequently.	fig. 4-53
Frequency in weekly shopping	In both neighbourhoods, the majority of respondents attends weekly shopping facilities several times a week but less than every day.	fig. 4-54
Frequency in going to a health centre	In both neighbourhoods, the largest number of respondents goes to a health centre less frequently than once a month.	fig. 4-55
Frequency in going to a sport centre	In both neighbourhoods, most respondents either don't go to a sports centre at all or use it several times a week.	fig. 4-56

Variable name	Descriptive statistics interpretation in the West End and Bearsden	Table/figure reference in Chapter 4
Frequency in going to green/ open spaces	In the West End, the largest number of respondents goes to green/open spaces several times a month and in Bearsden, most respondents go to green/open spaces several times a week.	fig. 4-57
Frequency in going to a post office, bank and other administration	In both neighbourhoods most respondents attend these facilities several times a month.	fig. 4-58
Frequency in going to a library	In both neighbourhoods, most respondents go to a library less frequently than once a week.	fig. 4-59
Frequency in going to a cinema and theatre	In the West End, the largest number of respondents goes to the cinema and theatre several times a month, and in Bearsden the majority of respondents attends these facilities less frequently than once a month.	fig. 4-60
Frequency in going to restaurants, pubs and cafés	In the West End, the majority of respondents attends restaurants, pubs and cafés several times a week, while most respondents from Bearsden attend these facilities less frequently (several times a month).	fig. 4-61
Very happy with overall facilities	In both neighbourhoods, the largest number of respondents agrees of being happy with the overall facilities provided by the residential neighbourhood.	fig. 4-62
Lack of facilities	In both neighbourhoods, most respondents think that no facilities are lacking in their residential neighbourhood. Among the lacking facilities in Bearsden, the largest number of respondents (24.6%) opted for cinema, better variety of restaurants and pubs, youth centre.	tab. 4-37

Table 6-13: Summary of interpretations for the Descriptive Statistics Results for the Respondents' use of Facilities in the two Neighbourhoods

6.1.6 Interpretations for the Descriptive Statistics Results for Amenities of the two Neighbourhoods

Like in the previous sections, a summary of the results of descriptive statistics for the first three ranked amenities of the West End and Bearsden is given in the general table.

Variable name	Descriptive statistics interpretation in the West End and Bearsden	Table/figure reference in Chapter 4
First amenity of the residential neighbourhood	In both neighbourhoods, the majority of respondents thinks that the general location of the residential neighbourhood is its first ranked amenity.	tab. 4-38
Second ranked amenity of the residential neighbourhood	In the West End, excluding general location of the neighbourhood, most respondents think that the second ranked amenity is the appearance of the West End. In Bearsden, excluding general location of the neighbourhood as well, most respondents think that the quality/ location of schools is the second ranked amenity of Bearsden.	tab. 4-39
Third ranked amenity of the residential neighbourhood	In the West End, excluding general location and appearance of neighbourhood, most respondents think that community amenities are the third ranked amenity of the West End. In Bearsden, excluding general location of neighbourhood, most respondents think that the appearance of neighbourhood is the third ranked amenity.	tab. 4-40

Table 6-14: Summary of interpretations for the Descriptive Statistics Results for Amenities of the two Neighbourhoods

6.1.7 Interpretations of the Descriptive Statistics Results for Residential Mobility Intentions of Respondents in the two Neighbourhoods

Regarding residential mobility intentions, there was one last categorical variable that referred to these issues. Descriptive statistics results for this variable showed that in the West End, there was almost an equal number of: respondents who would leave this neighbourhood for the opposite type of neighbourhood in or out of Glasgow; respondents who would like to move within the same (urban) type of neighbourhood; and respondents who wouldn't like to leave the West End at all. In Bearsden, the majority of respondents (57.6%) wouldn't like to leave this neighbourhood at all, while 30.5% would want to move to the opposite type of neighbourhoods to the present, suburban one (see Table 4-41).

6.2 Interpretations of Statistical Analyses Results on the Variables of Residential Preference Components in the two types of Neighbourhoods

Statistical analyses (inferential statistics) allow researchers to use sample data to draw inferences about the population of interest. Since for the researchers it is usually impossible to observe every individual in a population, they collect data from a sample and apply to it appropriate statistical techniques for obtaining the answers about population.

Hypothesis testing is one of the most commonly used inferential procedures (Gravetter & Wallnau, 2000:243). The process of hypothesis testing begins by stating two opposing hypotheses about the unknown population. The first one is called the *Null hypothesis* (Ho) and it predicts that the independent variable will have no effect on the dependent variable for the population. The second hypothesis is simply the opposite of the Null hypothesis and it is called *Scientific* or *Alternative Hypothesis* (H_1). If the statistical analysis based on sample data shows that we should reject the Null hypothesis, we can be certain to a very high degree that the Alternative hypothesis is true for the population as a whole (Zizic et al., 2001:203).

Chapter 5 contains results of all statistical analyses regarding residential preference components, i.e. how these components are influenced by certain variables of residents or neighbourhood characteristics.

Variables of residents and neighbourhood characteristics as well as variables of residential preference components derive from the questionnaire survey on randomly chosen samples in the West End and Bearsden.

A schematic representation of investigation on relationships among variables of residents and neighbourhood characteristics and residential preference components' variables is given in Chapter 3 (Figure 3-3).

Figure 3-3 also gives an outline for the research questions, which are tested through application of statistical analyses methods in Chapter 5. These research questions are:

- Do residents of the West End and Bearsden differ in terms of their community sentiments?
- Which variables of socio-economic and environmental context influence community sentiment in each neighbourhood?
- Do residents of the West End and Bearsden differ in terms of their community evaluations?
- Which variables of ecological conditions and of residents' perceptions of those conditions influence community evaluation in each neighbourhood?
- What is the influence of neighbourhood type on variables of social and environmental context?
- What is the influence of neighbourhood type on variables of physical planning issues?
- Do residents of the West End and Bearsden differ in terms of their residential mobility?
- Which variables of residents and neighbourhood characteristics and which residential preference dimensions influence residential mobility in each neighbourhood?

These research questions were basis for the establishment of the research hypothesis previously stated in Chapter 3 (see: 3.4.4). The following sections contain the discussion on results of statistical analyses for each dimension and component of residential preference and such results will either prove or reject the research hypotheses.

6.2.1 Interpretations of Statistical Analyses Results on Community Sentiment (Emotional Attachment) in the two Neighbourhoods

Community sentiment (emotional attachment) to the residential neighbourhood is analysed separately for the West End and Bearsden, however, one of the basic questions was whether community sentiment is different for urban and suburban residents and the initial analysis related to testing this hypothesis.

The data on community sentiment in each neighbourhood was obtained from the questionnaire survey on the West End and Bearsden samples. In comparing community sentiments between residents of the West End and Bearsden, the T-test has been applied as a method of statistical analysis. This method showed a statistically significant difference between the two neighbourhoods in terms of their residents' community sentiments. According to the mean values for community sentiments in the two neighbourhoods, it can be concluded that the residents of Bearsden (suburban neighbourhood) are more emotionally attached to their residential neighbourhood than residents of the West End are towards their urban neighbourhood. This result proves the research hypothesis H2 stated in Chapter 3.

As it can be observed from the Table 6-15, there have been 21 independent variables that were analysed in relation to the community sentiment in the West End and to the community sentiment in Bearsden. These independent variables describe the socio-economic and environmental context of residents in the two neighbourhoods. In the analyses of relationships between independent variables and community sentiments in each neighbourhood, statistical methods that were applied were: Pearson Correlation, T-test, One-way ANOVA and Kruskal Wallis Test.

Table 6-15 serves as a summary of the final statistical analyses results related to community sentiment in each neighbourhood while the process of obtaining such results is given in detail in Chapter 5.

Comparatively for both neighbourhoods, Table 6-15 includes: table reference in Chapter 5, the statistical method that was applied, the statistical significance of the relationship between independent variable and community sentiment and the Pearson correlation between those variables.

Table on statistical relationships between independent variables and Community sentiment as the dependent variable								
	Dependent variable: Community sentiment							
Independent variables	the West End				Bearsden			
	Table reference in Chapter 5	Statistical method	Statistical significance*	Pearson correlation	Table reference in Chapter 5	Statistical method	Statistical significance*	Pearson correlation
Household type	5-2	Kruskal Wallis Test	Yes	.362	5-24	Kruskal Wallis Test	Yes	.300
Children in the household	5-3	T-test	No		5-25	T-test	No	
Respondent's gender	5-4	T-test	No		5-26	T-test	No	
Respondent's age group	5-5	Kruskal Wallis Test	Yes	.498	Fig 5-2	One-way ANOVA	Yes	.277
Marital status	5-6	T-test	No		5-27	T-test	No	
Highest level of education	5-7	T-test	Yes	-.235	5-28	T-test	No	
Job situation	5-8	T-test	Yes	.258	5-29	T-test	Yes	.318
Current occupation	5-9	T-test	Yes	.173	5-30	T-test	Yes	.229
Type of home	5-11	T-test	Yes	-.242	5-32	T-test	No	
Ownership of home	5-12	T-test	Yes	.175	-	-	-	
Duration of living in a present home	5-13	T-test	Yes	.318	5-33	T-test	Yes	.265
Duration of living in a present neighbourhood	5-14	T-test	Yes	.386	5-34	T-test	Yes	.419
Type of home in childhood	5-15	T-test	Yes	-.208	5-35	T-test	No	

Continuation of table on statistical relationships between independent variables and Community sentiment as the dependent variable								
	Dependent variable: Community sentiment							
Independent variables	the West End				Bearsden			
	Table reference in Chapter 5	Statistical method	Statistical significance*	Pearson correlation	Table reference in Chapter 5	Statistical method	Statistical significance*	Pearson correlation
Home having a private garden	5-16	T-test	Yes	-.229	5-36	T-test	No	
Importance of having a private garden	5-17	T-test	Yes	-.176	5-37	T-test	No	
Similarities with next-door neighbours	5-18	T-test	No		5-38	T-test	No	
Happiness with contacts with the next-door neighbours	Fig 5-1	One-way ANOVA	Yes	.274	5-39	T-test	No	
Feeling of safety	5-19	T-test	No		5-40	T-test	No	
Pollution problems	5-20	T-test	No		5-41	T-test	No	
Overall facilities	5-21	T-test	No		5-42	T-test	No	
Lack of facilities	5-22	T-test	No		5-43	T-test	Yes	-.238

Statistical significance*: 'Yes' means that Ho has been rejected and that alternative hypothesis H_1 (there is a relationship between the variables) can be accepted with a high degree of probability; 'No' means that Ho can not be rejected and therefore H_1 is not acceptable.

Table 6-15: Summary of statistical relationships between independent variables and Community sentiment in the West End and Bearsden

6.2.1.1 Interpretations of the community sentiment findings in the West End

After comparing community sentiments in the West End (urban neighbourhood) and Bearsden (suburban neighbourhood), it was important to find out which of the independent variables in Table 6-15 showed statistically significant relationship with community sentiment in each neighbourhood.

As it can be observed from the Table 6-15, there were 13 out of 21 independent variables in the West End that had a statistically significant influence on community sentiment.

From the statistical outputs of significant relationships between the independent variables and community sentiment in the West End, the following conclusions can be made:

- West End residents who form single old households show the highest emotional attachment to the residential neighbourhood (r=.362) when compared with residents of all other household types in the West End.

- West End residents who are 60 years old and over show the highest emotional attachment to this residential neighbourhood (r=.498).

- Residents of the West End who did not complete higher education are more emotionally attached to the West End than those with completed undergraduate or postgraduate studies (r= -.235).

- Economically inactive residents of the West End are more emotionally attached to it than category of employees (r=.258).

- Residents of the West End with occupations which are other than professional are more emotionally attached to this neighbourhood than residents of professional occupations (r=.173).

- West End residents who live in houses (detached, semi-detached or terraced) are more emotionally attached to the West End than residents living in flats (r=-.242).

- West End residents who live in owner occupied homes are more emotionally attached to the West End than residents who live in other (non owner-occupied) homes (r=.175).

- Longer duration of living in a present home (6 years and over) in the West End makes residents more emotionally attached to this neighbourhood in comparison to residents who stayed in their present home for 5 years or less (r=.318). Similarly, longer residency in the West End is significantly related to emotional attachment to it (r=.386).

- West End residents who had lived in an urban type of neighbourhood in the childhood are more emotionally attached to their present neighbourhood (r=-.208).

- West End residents who live in a house with a private garden are more emotionally attached to this residential neighbourhood than residents living in a home without a private garden (r=-.229). On the other hand, residents in the West End who perceive that having a private garden is less than important are more emotionally attached to their residential neighbourhood than residents who think that having a private garden is important or very important (r=-.176).

- Residents of the West End who are happier with contacts with their neighbours are more emotionally attached to this neighbourhood than residents who are less than happy with contacts with neighbours (r=.274).

Out of all variables which influence community sentiment in the West End, this dependent variable had the highest strength of relationship with age groups (r=.498) and duration of living in the West End (r=.386). These statistical results support the research hypothesis H1 (see Chapter 3) for the West End (urban neighbourhood).

6.2.1.2 Interpretations of the community sentiment findings in Bearsden

As Table 6-15 shows, from all 21 independent variables of socio-economic and environmental context that were analysed in relationship to community sentiment in Bearsden, only 7 showed statistically significant relationship.

From the statistical outputs of significant relationships between the independent variables and community sentiment in Bearsden, the following conclusions can be made:

- As in the West End, single old households in Bearsden also show the highest emotional attachment to the residential neighbourhood (r=.30) when compared with residents of all other household types in Bearsden.

- Bearsden residents who are 60 years old and over show the highest emotional attachment to this residential neighbourhood (r=.277). This type of relationship was statistically significant in the West End as well.

- Economically inactive residents of Bearsden are more emotionally attached to it than category of employees (r=.318). This type of relationship was present in the West End as well.

- Residents of Bearsden with occupations other than professional are more emotionally attached to this neighbourhood than residents of professional occupations (r=.229). Again, the same type of relationship existed in the West End.

- Longer duration of living in a present home (6 years and over) in Bearsden makes residents more emotionally attached to this neighbourhood in comparison to residents who stayed in their present home for 5 years or less (r=.265). Similarly, longer residency in Bearsden is significantly related to emotional attachment to it (r=.419). The relationships between the duration of living in a present home/ neighbourhood and emotional attachment to the residential neighbourhood have shown statistical significance in the West End as well.

- Residents of Bearsden who feel that there is a lack of certain facilities in this neighbourhood are less emotionally attached to it (r=-.238) in comparison to Bearsden residents who feel that no facilities are lacking in this neighbourhood.

As the H1 research hypothesis was proven in the West End case study, it was also proven for Bearsden (suburban neighbourhood). The duration of residency in Bearsden (r=.419), job situation (r=.318) and age group (r=.30) had the highest strength of relationships with community sentiment in Bearsden.

6.2.2 Interpretations of Statistical Analyses Results on Community Evaluation in the two Neighbourhoods

As one of the two components of attachment to the residential neighbourhood, community evaluation was represented by the continuous variable measured by the neighbourhood satisfaction scale. The development of this scale is described in

Chapter 5. Also, the results of statistical analyses of relationships among independent variables of ecological conditions and perceptions on those conditions on one side, and community evaluation in each of the two neighbourhoods on the other, are given in detail in the Chapter 5.

In comparing community evaluations between residents of the West End and Bearsden, the T-test has been applied as a method of statistical analysis. This method showed a statistically significant difference between the two neighbourhoods in terms of their residents' community evaluations. According to the mean values for community evaluations in the two neighbourhoods, it can be concluded that residents of the West End (urban neighbourhood) are more satisfied with their residential neighbourhood than residents of Bearsden (suburban neighbourhood). This result proves the research hypothesis H4 stated in Chapter 3.

As it can be observed from the Table 6-16, there have been 8 independent variables that were analysed in relation to community evaluation in the two neighbourhoods. These independent variables describe ecological conditions and perceptions of those conditions of residents in the West End and Bearsden. In the analyses of relationships between independent variables and community evaluations in each neighbourhood, statistical methods that were applied were: Pearson Correlation, T-test, One-way ANOVA and Kruskal Wallis Test. Additionally to these statistical methods, Standard Multiple Regression was also applied in each neighbourhood in order to see how well a set of independent variable is able to predict a particular outcome of community evaluation in the West End and in Bearsden.

Table 6-16 serves as a summary of final statistical analyses results related to community evaluation in each neighbourhood while the process of obtaining such results is given in detail in Chapter 5.

Comparatively for both neighbourhoods, Table 6-16 includes: table reference in Chapter 5, statistical method that was applied, statistical significance of relationship between independent variable and community evaluation, Pearson correlation between those variables, and Beta coefficients which are the results of Standard Multiple Regression.

Table on statistical relationships between independent variables and Community evaluation as the dependent variable										
	Dependent variable: Community evaluation									
Independent variables	the West End					Bearsden				
	Table reference in Chapter 5	Statistical method	Statistical significance	Pearson correlation	Beta coefficients	Table reference in Chapter 5	Statistical method	Statistical significance	Pearson correlation	Beta coefficients
Duration of living in a present home	5-48	T-test	No			5-52	T-test	No		
Ownership of home	5-49	T-test	Yes	.273	.126	-	-	-		
Similarities with neighbours	5-50	T-test	No			5-53	T-test	Yes	.283	.029
Happiness with contacts with the next-door neighbours	Fig 5-3	One-way ANOVA	Yes	.467	.296	Fig 5-9	One-way ANOVA	Yes	.377	.241
Feeling of safety	Fig 5-4	One-way ANOVA	Yes	.600	.414	Fig 5-10	One-way ANOVA	Yes	.349	.259
Satisfaction with public transport	Fig 5-5	One-way ANOVA	Yes	.393	.306	5-54	Kruskal Wallis Test	Yes	.631	.406
Overall facilities	Fig 5-6	One-way ANOVA	Yes	.457	.279	Fig 5-11	One-way ANOVA	Yes	.544	.334
Lack of facilities	5-51	T-test	Yes	-.296	.018	5-55	T-test	Yes	-.480	-.115

Table 6-16: Summary of statistical relationships between the independent variables and community evaluation in the West End and Bearsden

6.2.2.1 Interpretations of the community evaluation findings in the West End

Among 8 independent variables of ecological conditions and residents' perception on those conditions in the West End, 6 variables that showed correlation with community evaluation in this neighbourhood (see Table 6-16) were taken as a set of independent variables for the model of prediction of neighbourhood satisfaction in the West End.

As it has been fully described in Chapter 5, Model Summary of Standard Multiple Regression for predicting neighbourhood satisfaction in the West End showed a great significance. This Model explains 64.7% of the variance in neighbourhood satisfaction (community evaluation) in the West End.

Beta coefficients serve to explain which of the variables included in the model contributed to the prediction of the neighbourhood satisfaction in the West End and which one made the strongest unique contribution to explaining the dependent variable. With a variation of factors that are involved in this model it can be predicted what kind of effect this variation might imply for the neighbourhood satisfaction in the West End.

From the statistical outputs of significant relationships between the independent variables and community evaluation in the West End, and from the Standard Multiple Regression results, the following conclusions can be made:

- The feeling of safety in the West End has the strongest individual influence of all predictors on community evaluation of this neighbourhood (r=.60; Beta=.414).

- West End residents' happiness with contacts with the next-door neighbours strongly influences community evaluation of the West End (r=.467; Beta=.296).

- Satisfaction with the overall facilities provided by the West End has a strong influence on community evaluation in the West End (r=.457; Beta=.279).

- West End residents' satisfaction with a public transport system organisation in this neighbourhood has a medium positive correlation with community evaluation in the West End (r=.393; Beta=.306).

- Ownership of home in the West End is the only variable of ecological conditions that showed a statistically significant relationship with the community evaluation in this neighbourhood (r=.273; Beta=.126).

- Lack of certain facilities in the West End is negatively related with the community evaluation in this neighbourhood. However, this variable does not make a significant individual contribution in the Model for prediction of neighbourhood satisfaction in the West End (r=-.273; Beta=.018).

The results of statistical analyses regarding community evaluation in the West End (urban neighbourhood) support the research hypothesis H3 stated in Chapter 3. Indeed, in the West End, residents' feelings of safety and happiness with contacts with the next-door neighbours have a very strong influence on community evaluation of this neighbourhood.

6.2.2.2 Interpretations of the community evaluation findings in Bearsden

As Table 6-16 summarises, from 8 independent variables of ecological conditions and perceptions on those conditions, 6 of them showed statistically significant relationship with community evaluation in Bearsden and were taken as a set of independent variables for the model of prediction of neighbourhood satisfaction in Bearsden.

Model Summary of Standard Multiple Regression for predicting neighbourhood satisfaction in Bearsden showed a great significance. This Model, which can be found in Chapter 5, explains 65.5% of the variance in neighbourhood satisfaction (community evaluation) in Bearsden.

From the statistical outputs of significant relationships between the independent variables and community evaluation in Bearsden, and from Beta coefficients of Standard Multiple Regression, the following conclusions can be made:

- Satisfaction with the public transport system in Bearsden has the strongest individual influence of all predictors on community evaluation in this neighbourhood (r=.631; Beta=.406).

- Satisfaction with the overall facilities provided by Bearsden has a strong influence on community evaluation in Bearsden (r=.544; Beta=.334).

- Residents' perceptions on lack of facilities in Bearsden have a medium negative correlation with community evaluation (r=-.48), however, this variable does not make a significant individual contribution in the Model for prediction of neighbourhood satisfaction in Bearsden (Beta=-.115).

- Bearsden residents' happiness with contacts with the next-door neighbours influences community evaluation in the West End (r=.377; Beta=.241).

- The feeling of safety in Bearsden is positively correlated with community evaluation in this neighbourhood (r=.349; Beta=.259).

- In Bearsden, more similarities with the next-door neighbours presume higher neighbourhood satisfaction (r=.283). However, like the perception on a lack of facilities in Bearsden, similarities with the next-door neighbours do not make significant individual contribution in the Model for prediction of neighbourhood satisfaction in Bearsden (Beta=.029).

In Bearsden like in the West End previously, the research hypothesis H3 can be accepted since the feeling of safety and happiness with contacts with neighbours influence community evaluation. Yet, according to the Model of Standard Multiple Regression, it can be concluded that community sentiment in Bearsden would increase most with an improvement of residents' satisfaction with the public transport system in this neighbourhood and with enhancement of their satisfaction with overall facilities provided by Bearsden.

6.2.3 Interpretations of Statistical Analyses Results on Relationships between the Neighbourhood type and variables of Social and Environmental Context

The social and environmental context is the dimension of residential preference that is, according to the literature sources, largely influenced by the neighbourhood type.

From this point of view, statistical analyses are conducted with the aim to investigate the relationships between the neighbourhood type (urban- the West End and suburban- Bearsden), which is an independent variable, and a number of dependent variables describing social and environmental context of such residential neighbourhoods.

As it can be observed from the Table 6-17, there have been 12 dependent variables of the social and environmental context of residents in the West End and Bearsden that were analysed in relation to the neighbourhood type.

In analyses of relationships between the variables, the statistical methods that were applied were: Chi-Square Test, T-test and One-way MANOVA.

Table 6-17 serves as a summary of the final statistical analyses results related to social and environmental contexts in the two neighbourhoods while the process of obtaining such results is given in total in Chapter 5.

For the dependent variables of social and environmental context of respondents, Table 6-17 includes the following information: categories of the dependent variable, table reference in Chapter 5, statistical method that was applied, statistical significance of the relationship between the independent variable of neighbourhood type and the dependent variables, % of respondents within categories of categorical dependent variables comparatively for both neighbourhoods, and mean values of continuous dependent variables for each neighbourhood type.

Table on statistical relationships between the neighbourhood type and dependent variables of Social and Environmental Context								
	Independent variable: Neighbourhood type (1=the West End; 2=Bearsden)							
Dependent variables	Categories of the dependent variables	Table reference in Chapter 5	Statistical method	Statistical significance	the West End % within category	Bearsden % within category	the West End mean value	Bearsden mean value
Similarities with next-door neighbours	1. No similarities	5-56	Chi- Square test	Yes	42.2	28.8		
	2. There are similarities				57.8	71.2		
Frequency in meeting the next-door neighbours		5-57	T-test	No				

Happiness with contacts with neighbours		5-58	T-test	Yes			3.84	4.04
Continuation of the table on statistical relationships between the neighbourhood type and dependent variables of Social and Environmental Context								
	Independent variable: Neighbourhood type (1=the West End; 2=Bearsden)							
Dependent variables	Categories of the dependent variables	Table reference in Chapter 5	Statistical method	Statistical significance	the West End % within category	Bearsden % within category	the West End mean value	Bearsden mean value
Feeling of safety	1. Less than safe 2. Safe or very safe	5-59	Chi- Square test	No				
Overall facilities in the neighbourhood		5-60	T-test	Yes			3.88	3.45

Lack of facilities	1. No facilities are lacking 2. There is a lack of facilities	5-61	Chi- Square test	No				
Continuation of the table on statistical relationships between the neighbourhood type and dependent variables of Social and Environmental Context								
	Independent variable: Neighbourhood type (1=the West End; 2=Bearsden)							
Dependent variables	Categories of the dependent variables	Table reference in Chapter 5	Statistical method	Statistical significance	the West End % within category	Bearsden % within category	the West End mean value	Bearsden mean value
Frequency of visits:		6-63	One-way MANOVA	Yes			3.7	3.4
City centre							3.9	3.5
Daily shopping							2.7	2.16
Cinema/ theatre								

Restaurants, pubs, cafés							3.35	2.83
Importance of private garden		5-64	T-test	Yes			3.3	4.51
Pollution problems	1. Yes 2. No	5-66	Chi- Square test	No				

Table 6-17: Summary of statistical relationships between the neighbourhood type and dependent variables of Social and Environmental Context

As it can be observed from Table 6-17, from the 12 dependent variables that were analysed in comparison between the West End and Bearsden, 8 showed statistically significant relationships with the neighbourhood type.

From the statistical outputs of significant relationships between the neighbourhood type and variables of social and environmental context, the following conclusions can be made:

- The majority of suburban residents in Bearsden (71.2%) thinks there are similarities between them and their next-door neighbours, whilst 57.8% of residents in the West End (urban neighbourhood) think there is more diversity between them and their next-door neighbours.

- Bearsden residents are happier with contacts with their next-door neighbours (4.04) in comparison to the West End residents (3.84).

- Urban (the West End) residents are more satisfied with the overall facilities provided by their residential neighbourhood (3.88) than suburban (Bearsden) residents (3.45).

- Urban and suburban residents differ in frequency of using certain facilities (city centre facilities, daily (local) shopping, cinema/ theatre, and restaurants, pubs and cafés). Regarding all 4 types of facilities, the West End residents use them more frequently than Bearsden residents, however, the largest difference between the two neighbourhoods appears in the frequency in going to the cinema, theatre, restaurants etc.

- Suburban residents in Bearsden give more importance to having a private garden (4.51) than urban (the West End) residents (3.3).

These results show that there is a great correlation between the type of neighbourhood and perceived importance of having a private garden (r=.506) but, supporting the research hypothesis H5 in Chapter 3, urban residents are more satisfied with the overall facilities in their neighbourhood than suburban residents are about their residential neighbourhood's facilities (r=-.248).

6.2.4 Interpretations of Statistical Analyses Results on Relationships between the Neighbourhood type and variables of Physical Planning Issues

Like in the case of Social and Environmental Context dimension of residential preference, the dimension of Physical Planning Issues, which is described by a number of variables, is analysed in relation to the type of residential neighbourhood.

Therefore, statistical analyses of this dimension of residential preference involved the type of neighbourhood as an independent variable, and variables of physical planning issues (e.g. commuting distances, physical mobility of adults and children, private car dependence, accessibility of certain facilities) as the dependent ones.

In the Table 6-18, there is a summary of the final statistical analyses results regarding physical planning issues in the two neighbourhoods, while the process of obtaining such results is documented in detail in Chapter 5.

As it can be noticed in Table 6-18, 20 dependent variables of physical planning issues have been analysed in relation to the neighbourhood type. The statistical methods, which have been applied in those analyses, are Chi-Square and T-test.

For the dependent variables of physical planning issues, Table 6-18 includes following information: categories of the dependent variables, table reference in Chapter 5, statistical method that was applied, statistical significance of relationship between the variable of neighbourhood type and the dependent variable, % of respondents within categories of categorical dependent variables or mean values if the dependent variable was continuous, comparatively for both neighbourhoods.

Table on statistical relationships between the neighbourhood type and dependent variables of Physical Planning Issue								
	Independent variable: Neighbourhood type (1=the West End; 2=Bearsden)							
Dependent variables	Categories of the dependent variables	Table reference in Chapter 5	Statistical method	Statistical significance	the West End		Bearsden	
					% within category	Mean value	% within category	Mean value
Distance to place of work or daily activity	1. Up to 1 mile	5-67	Chi- Square test	Yes	46.9		23.7	
	2. More than 1 mile				53.1		76.3	
Everyday most common means of transportation	1. Private car	5-68	Chi- Square test	Yes	37.5		80.5	
	2. Underground/ Train				17.2		8.5	
	3. Bus				5.5		5.1	
	4. Walk				36.7		4.2	
	5. Other				3.1		1.7	
Frequency of walk		5-69	T-test	Yes		4.56		4.03
Frequency of using public transport system		5-70	T-test	Yes		3.57		2.69

Frequency of using a private car		5-71	T-test	Yes		3.7		4.51
Continuation of the table on statistical relationships between the neighbourhood type and dependent variables of Physical Planning Issues								
	Independent variable: Neighbourhood type (1=the West End; 2=Bearsden)							
Dependent variables	Categories of the dependent variables	Table reference in Chapter 5	Statistical method	Statistical significance	the West End		Bearsden	
					% within category	Mean value	% within category	Mean value
Satisfaction with public transport system		5-72	T-test	Yes		3.55		2.74
Number of private cars in the household	1. None	5-74	Chi- Square test	Yes	25.0		7.6	
	2. One				56.3		39.4	
	3. Two or more				18.8		53.0	
Possibility to manage without a car	1. Yes	5-75	Chi- Square test	Yes	35.4		19.3	
	2. No				64.6		80.7	
Transportation to the city centre	1. Private car	5-76	Chi- Square test	Yes	19.7		57.3	
	2. Public transport, walk etc. (not a car)				80.3		42.7	

Transportation to daily shopping	1. Private car	5-77	Chi- Square test	Yes	14.8		62.0	
	2. Public transport, walk etc. (not a car)				85.2		38.0	
Continuation of the table on statistical relationships between the neighbourhood type and dependent variables of Physical Planning Issues								
	Independent variable: Neighbourhood type (1=the West End; 2=Bearsden)							
Dependent variables	Categories of the dependent variables	Table reference in Chapter 5	Statistical method	Statistical significance	the West End % within category		Bearsden % within category	
Transportation to weekly shopping	1. Private car	5-78	Chi- Square test	Yes	66.4		92.1	
	2. Public transport, walk etc. (not a car)				33.6		7.9	
Transportation to health centre	1. Private car	5-79	Chi- Square test	Yes	36.6		64.8	
	2. Public transport, walk etc. (not a car)				63.4		35.2	
Transportation to sport centre	1. Private car	5-80	Chi- Square test	Yes	54.4		88.3	
	2. Public transport, walk etc. (not a car)				45.6		11.7	
Transportation to	1. Private car	5-81	Chi- Square test	Yes	21.5		74.3	

green/ open spaces	2. Public transport, walk etc. (not a car)				78.5	25.7
Transportation to post office, bank and other administration	1. Private car	5-82	Chi- Square test	Yes	15.3	58.8
	2. Public transport, walk etc. (not a car)				84.7	41.2
Continuation of the table on statistical relationships between the neighbourhood type and dependent variables of Physical Planning Issues						
	Independent variable: Neighbourhood type (1=the West End; 2=Bearsden)					
Dependent variables	Categories of the dependent variables	Table reference in Chapter 5	Statistical method	Statistical significance	the West End % within category	Bearsden % within category
Transportation to the library	1. Private car	5-83	Chi- Square test	Yes	15.9	53.5
	2. Public transport, walk etc. (not a car)				84.1	46.5
Transportation to cinema/ theatre	1. Private car	5-84	Chi- Square test	Yes	32.2	85.7
	2. Public transport, walk etc. (not a car)				67.8	14.3
Transportation to restaurants, pubs, cafés	1. Private car	5-85	Chi- Square test	Yes	13.7	64.8
	2. Public transport, walk etc. (not a car)				86.3	35.2

Distance of children's nursery/ school from home	1. Up to 1 mile; 2. More than 1 mile	5-86	Chi- Square test	No		
Transportation of children to their nursery/ school	1. Private car; 2. Public transport; 3. On foot	5-87	Chi- Square test	No		

Table 6-18: Summary of statistical relationships between the neighbourhood type and dependent variables of Physical Planning Issues

As can be observed in Table 6-18, from 20 dependent variables of physical planning issues that were analysed in comparison between the West End and Bearsden, almost all of them (18) showed statistically significant relationships with the neighbourhood type.

From the statistical outputs of significant relationships between the neighbourhood type and variables of physical planning issues, the following conclusions can be made:

- In both types of neighbourhoods, more respondents travel distances longer than 1 mile than shorter distances (up to 1 mile) to the place of their work or daily activity. Yet, in suburban neighbourhood (Bearsden), the majority of respondents (76.3%) travels longer distances, while in the West End (urban neighbourhood) only slightly over half of respondents travel distances longer than 1 mile.

- In comparing the two neighbourhoods in terms of the most common everyday means of transportation, in suburban neighbourhood, there is over 80% of respondents who predominantly use a private car, while in an urban neighbourhood, majority of respondents uses both private car (37.5%) and walk (36.7%). Additionally, other results also support that in the West End (urban neighbourhood) there is a greater frequency of walks, use of public transport system and satisfaction with the public transport in comparison to Bearsden (suburban neighbourhood). Furthermore, in Bearsden, the private car is used more frequently than in the West End.

- In the West End, most respondents (56.3%) have one car in the household but 25% of respondents do not have any cars in the household. In Bearsden, conversely, over half of respondents (53%) have 2 or more private cars in the household and only 7.6% have no car at all. Following these results, there is also a statistically significant difference between the two neighbourhoods in terms of the possibility to manage without a car for the respondents who already have one. In the West End, more than a third of the respondents said they would be able to manage without a car, while in Bearsden less than 20% of respondents who had a private car in the household said they would be able to manage without one.

- Regarding transportation means in reaching certain facilities, there is a clear distinction between the urban and suburban neighbourhoods in ways of transportation to: city centre, daily shopping, health centre, green/ open spaces, post office, bank and other administration, library, cinema/ theatre, and to restaurants, pubs and cafés. For reaching all those facilities, in the West End (urban neighbourhood) respondents predominantly use public transport, walk and use means other than a private car, while in Bearsden (suburban neighbourhood), for reaching the same facilities, respondents use primarily a private car. Only two facilities that in both neighbourhoods are mainly reached by a private car are weekly shopping and sport centre. However, in both cases, in Bearsden, a higher percentage of respondents uses a private car to reach those facilities than in the West End.

The conclusions that are made according to the statistically significant results on relationships between the type of neighbourhood and physical planning issues support research hypotheses H6 and H7 from Chapter 3. In other words, urban residents' distances from home to their place of work or daily activity are shorter in relation to suburban residents' distances, and in reaching different facilities, suburban residents are more likely to use a private car than urban residents.

6.2.5 Interpretations of Statistical Analyses Results on Residential Mobility in the two Neighbourhoods

Residential Mobility is the fourth component of residential preference that was represented by the categorical variable, which related to individual's intentions of: moving from the present neighbourhood to the opposite type of neighbourhood in or out of Glasgow, moving to the similar type of neighbourhood, or not leaving the present neighbourhood at all.

The results of statistical analyses of relationships among independent variables of socio-economic characteristics of respondents and environmental contexts in the two neighbourhoods on one side, and residential mobility in each of the two neighbourhoods on the other, are given in detail in Chapter 5. Residential mobility in each neighbourhood is also analysed in relationship with two other components of residential preference: community sentiment and community evaluation, and these results are also reported in detail in Chapter 5.

In comparing the residential mobility between the West End (urban neighbourhood) and Bearsden (suburban neighbourhood) residents, the Chi-Square Test was applied as the method of statistical analysis. This method showed a statistically significant difference between the two neighbourhoods in terms of residential mobility intentions of their residents. According to the percentages of respondents in each of the three categories of the dependent variable for the West End and Bearsden, it can be concluded that the majority of Bearsden (suburban) respondents (57.6%) does not wish to leave their present neighbourhood at all, and approximately 30% of suburban respondents would change this neighbourhood for the opposite neighbourhood types. On the other hand, in the West End (urban neighbourhood) the same percentage of respondents (37.5%) would leave this neighbourhood for the opposite neighbourhood type and would not wish to leave the West End at all. These findings support the research hypothesis H8 from Chapter 3 in which it is stated that suburban residents are less likely to change their present type of neighbourhood than urban residents.

As it can be observed from Table 6-19, 23 independent variables were analysed in relation to the residential mobility in the two neighbourhoods. In statistical analyses of relationships between independent variables and residential mobility in each neighbourhood, the method that was applied was the Chi-Square Test.

Table 6-19 summarises the final statistical analyses results related to residential mobility in each neighbourhood while the process of obtaining such results is given in detail in Chapter 5.

For a statistical relationship between each independent variable and residential mobility, Table 6-19 provides the following information: table reference in Chapter 5 (the West End), table reference in Chapter 5 (Bearsden), statistical method which was applied, statistical significance (the West End), and statistical significance (Bearsden).

Table on statistical relationships between independent variables and dependent variable of Residential Mobility					
	Dependent variable: Residential Mobility (1=I'd like to move to the opposite type of neighbourhood or out of Glasgow; 2= I'd like to move within same neighbourhood type; 3= I don't want to leave my neighbourhood)				
Independent variables	Table reference in Chapter 5 (the West End)	Table reference in Chapter 5 (Bearsden)	Statistical method	Statistical significance (the West End)	Statistical significance (Bearsden)
Household type	5-89	5-111	Chi-Square Test	No	No
Children in the household	5-90	5-112	Chi-Square Test	No	No
Respondent's gender	5-91	5-113	Chi-Square Test	Yes	No
Respondent's age group	5-92	5-114	Chi-Square Test	Yes	No
Marital status	5-93	5-115	Chi-Square Test	Yes	No
Highest level of education	5-94	5-116	Chi-Square Test	Yes	No
Job situation	5-95	5-117	Chi-Square Test	Yes	Yes
Current occupation	5-96	5-118	Chi-Square Test	No	Yes
Type of home	5-97	-	Chi-Square Test	Yes	-
Ownership of home	5-98	-	Chi-Square Test	No	-
Duration of living in a present neighbourhood	5-99	5-119	Chi-Square Test	Yes	Yes
Type of neighbourhood in childhood	5-100	5-120	Chi-Square Test	No	No
Home having a private garden	5-101	-	Chi-Square Test	No	-
Importance of having a private garden	5-102	-	Chi-Square Test	No	-

Continuation of table on statistical relationships between independent variables and dependent variable of Residential Mobility					
	Dependent variable: Residential Mobility (1=I'd like to move to the opposite type of neighbourhood or out of Glasgow; 2= I'd like to move within same neighbourhood type; 3= I don't want to leave my neighbourhood)				
Independent variables	Table reference in Chapter 5 (the West End)	Table reference in Chapter 5 (Bearsden)	Statistical method	Statistical significance (the West End)	Statistical significance (Bearsden)
Similarities with next-door neighbours	5-103	5-121	Chi-Square Test	No	No
Happiness with contacts with the next-door neighbours	5-104	5-122	Chi-Square Test	Yes	No
Feeling of safety	5-105	5-123	Chi-Square Test	No	No
Pollution problems	5-106	5-124	Chi-Square Test	No	Yes
Satisfaction with public transport	5-107	5-125	Chi-Square Test	No	No
Overall facilities	5-108	5-126	Chi-Square Test	No	No
Lack of facilities	5-109	5-127	Chi-Square Test	No	Yes
Community sentiment	5-110	5-128	Pearson Correlation	Yes	Yes
Community evaluation	5-110	5-128	Pearson Correlation	No	No

Table 6-19: Summary of statistical relationships between the independent variables and Residential Mobility in the West End and Bearsden

6.2.5.1 Interpretations of the Residential Mobility findings in the West End

As it can be noticed from Table 6-19, 9 out of 23 independent variables in the West End had a statistically significant influence on residential mobility in this neighbourhood. Summary of these influential relationships (apart from the one with community sentiment) is given for this neighbourhood in a separate table, consisting of the following information: categories of the independent variables that influence

residential mobility in the West End, percentages of respondents within category 1 of the dependent variable, percentages of respondents within category 2 of the dependent variable, and percentages of respondents within category 3 of the dependent variable.

Table on statistically significant relationships between independent variables and dependent variable of Residential Mobility in the West End				
	Dependent variable: Residential Mobility in the West End (1=I'd like to move to the opposite type of neighbourhood or out of Glasgow; 2= I'd like to move within same neighbourhood type; 3= I don't want to leave my neighbourhood)			
Independent variables	Categories of the independ. variables	% within category 1 of the dependent variable	% within category 2 of the dependent variable	% within category 3 of the dependent variable
Respondent's gender	1. Male	43.5	14.5	41.9
	2. Female	31.8	34.8	33.3
Respondent's age group	1. 44yrs. and younger	37.7	36.4	26.0
	2. 45yrs. and older	37.3	7.8	54.9
Marital status	1.With partn./ married	47.3	18.9	33.8
	2. Other	24.1	33.3	42.6
Highest level of education	1. Less than undergr.	26.3	18.4	55.3
	2. Undergrad. or pg.	42.2	27.8	30.0
Job situation	1. Employee	46.3	27.5	26.3
	2. Other	22.9	20.8	56.3
Type of home	1. House	41.5	9.8	48.8
	2. Flat	35.6	32.2	32.2
Duration of living in a present neighbourhood	1. Up to 10yrs	38.3	35.0	26.7
	2. 11yrs and longer	36.8	16.2	47.1
Happiness with contacts with the next-door neighbours	1. Less than happy	35.9	41.0	23.1
	2. Happy or v. happy	38.2	18.0	43.8

Table 6-20: Summary on statistically significant relationships between independent variables and dependent variable of Residential Mobility in the West End

From the statistical outputs of significant relationships between the independent variables and residential mobility in the West End, the following conclusions can be made:

- In the West End, male respondents are more likely than female respondents to consider moving to the neighbourhood of opposite type to the present one, however, male respondents are also more likely wishing not to leave the West End at all in comparison to the female respondents. Results show that more female than male respondents would like to leave the present neighbourhood for another urban neighbourhood.

- The majority of respondents in the West End who are 45 years old and over does not wish to leave this neighbourhood at all (54.9%). On the other hand, respondents who are 44 years old and younger are more likely to consider moving to either opposite or same neighbourhood type to the West End.

- In the West End, respondents who are married or living with a partner are mostly in favour of the opposite neighbourhood type to the present one (47.3%). Respondents of other marital statuses do mainly not wish to leave the West End at all (42.6%).

- The majority of respondents in the West End who have less than completed undergraduate studies would not wish to leave this neighbourhood (55.3%). Conversely, most respondents in the West End who have completed undergraduate or postgraduate studies would like to leave it for the opposite neighbourhood type (42.2%).

- The West End respondents who are employees are most likely to consider moving to the opposite type of neighbourhood to the present one (46.3%). In contrast, respondents of other job situations, predominantly wish not to leave the West End at all (56.3%).

- In the West End, more respondents who live in houses than respondents who live in flats would either leave the West End for the opposite neighbourhood type or would not wish to leave this neighbourhood at all. However, there are more West End respondents living in flats than those living in houses who would like to move to another urban neighbourhood.

- Longer duration of living in the West End implies a larger number of respondents who would not wish to leave this neighbourhood at all (47.1%).

- Happiness with contacts with the next-door neighbours in the West End is also closely related to respondents wishing not to leave this residential neighbourhood at all (43.8%). On the other hand, most respondents who are less than happy with contacts with their next-door neighbours would like to leave the West End for another urban neighbourhood (41%).

- Finally, community sentiment (emotional attachment) in the West End is strongly correlated (r=-.671) with residential mobility in this neighbourhood. This implies that more people are emotionally attached to the West End less likely they are to leave it at all.

6.2.5.2 Interpretations of the Residential Mobility findings in Bearsden

Table 6-19 showed that in Bearsden, there were only 6 out of 23 independent variables that showed statistically significant relationships with residential mobility in this neighbourhood.

For that reason, a summary of these influential relationships (apart from the one with community sentiment) is given for Bearsden in a separate table (Table 6-21), consisting of the following information: categories of the independent variables that influence residential mobility in Bearsden, percentages of respondents within category 1 of the dependent variable, percentages of respondents within category 2 of the dependent variable, and percentages of respondents within category 3 of the dependent variable.

Table on statistically significant relationships between independent variables and dependent variable of Residential Mobility in Bearsden				
	Dependent variable: Residential Mobility in Bearsden (1=I'd like to move to the opposite type of neighbourhood or out of Glasgow; 2= I'd like to move within same neighbourhood type; 3= I don't want to leave my neighbourhood)			
Independent variables influencing residential mobility in the Bearsden	Categories of the independent variables	% within category 1 of the dependent variable	% within category 2 of the dependent variable	% within category 3 of the dependent variable

Job situation	1. Employee	44.3	8.2	47.5
	2. Other	15.8	15.8	68.4
Current occupation	1. Professionals	42.1	8.8	49.1
	2. Other	19.7	14.8	65.6
Duration of living in a present neighbourhood	1. Up to 10yrs	53.3	23.3	23.3
	2. 11yrs and longer	22.7	8.0	69.3
Pollution problems	1. Yes	32.0	32.0	36.0
	2. No	30.1	6.5	63.4
Lack of facilities	1. No facilities lacking	13.2	15.1	71.7
	2. There is a lack of facilities	44.6	9.2	46.2

Table 6-21: Summary on statistically significant relationships between independent variables and dependent variable of Residential Mobility in Bearsden

From the statistical outputs of significant relationships between the independent variables and residential mobility in Bearsden, the following conclusions can be made:

- Most respondents in Bearsden who are employees, are either attracted by the opposite type of neighbourhood (44.3%) or they would not consider leaving Bearsden at all (47.5%). On the other hand, respondents of other job situations predominantly wish not to leave Bearsden at all (68.4%).

- In Bearsden, respondents who are of professional occupations are more open towards moving to the opposite type of neighbourhood (42.1%) when compared with respondents of other occupations (19.7%). However, a large number of respondents of both categories of occupations in Bearsden would mainly wish not to leave their present neighbourhood, yet the percentage of such respondents is much higher for people of other (non professional) occupations (65.6%).

- Like previously shown in the West End, in Bearsden as well, the majority of respondents who stayed in this neighbourhood for a longer time (11 years and longer) does not wish to leave it at all (69.3%). Conversely, respondents who lived in

Bearsden for less than 10 years mainly wish to leave it for the opposite neighbourhood type (53.3%).

- In Bearsden, respondents who perceive that this neighbourhood does not have pollution problems, mainly express they do not wish to leave it at all (63.4%). Respondents who think that Bearsden have pollution problems are more attracted to moving to another neighbourhood of similar or opposite type to the present one.

- The majority of Bearsden respondents who perceive that no facilities are lacking in their residential neighbourhood would not wish to leave it at all (71.7%). Those respondents who think that there is a lack of facilities in Bearsden would either like to leave it for the opposite neighbourhood type (44.6%) or they do not consider leaving Bearsden at all (46.2%).

- Finally, community sentiment (emotional attachment) in Bearsden is strongly correlated (r=-.622) with residential mobility in this neighbourhood. This implies that more people are emotionally attached to Bearsden less likely they are to leave it at all.

6.3 Concluding Summary of the Statistical Analyses on Residential Preference Profiles in the two Neighbourhoods

The results of inferential statistics regarding the dimensions of residential preferences (attachment; social and environmental context; physical planning issues and residential mobility) showed which variables influence these dimensions in either one or both case study neighbourhoods.

Contextual answers to the research questions of the study on residential preference profiles in affluent urban and suburban neighbourhoods are given in the following summary, which is organised according to the residential preference dimensions that were analysed.

6.3.1 Attachment

The results of statistical analyses on this dimension of residential preference referred to community sentiment and community evaluation as components of attachment to the residential neighbourhood.

6.3.1.1 Community sentiment

The main inferences of the study on residential preferences in the two neighbourhoods (the West End and Bearsden) regarding community sentiments of their residents are:

- Suburban (Bearsden) residents have greater community sentiment towards their residential neighbourhood than urban (the West End) residents.

- Like previous researches on community sentiment have already substantiated, some of the background variables (especially age and length of residence) showed to be influential on community sentiments in both the West End and Bearsden. This research shows clearly that older residents, and especially single old households (60+ years old) have the highest emotional attachment to their residential neighbourhood regardless the neighbourhood type. In interpreting these results for the whole population of Bearsden, one has to take into account that the sample included by 21.8% higher proportion of residents who are 60 years old and over than it was recorded in the 2001 Census for Bearsden.

- As it was hypothesised, this research demonstrated that residents who have been living longer in their residential neighbourhood of either urban or suburban type are more emotionally attached to it.

- This research showed that in both neighbourhoods, economically inactive residents are more emotionally attached to their residential neighbourhood than employees. In a way, this is influenced by people's age because of the retired population (i.e. mainly older population).

- In both the West End and Bearsden, professionals are less emotionally attached to the residential neighbourhood than people of other occupations.

- In the West End (urban neighbourhood), community sentiment is influenced by: the type of home, home having a private garden, and home ownership. This research shows that community sentiment in the urban neighbourhood is enhanced if people live in a detached, semi-detached or a terraced house with a private garden. However, it has to be stressed that in comparison to the 2001 Census data, the West End sample overshoots proportion of people living in terraced houses by 17.2% and

undershoots proportion of people living in purpose built block of flats, or tenements, and conversions by 24.53%. Previous findings of Lee et al. (1991) regarding homeowners being more emotionally attached to the residential neighbourhood are also proven by this research in the urban type of neighbourhood.

- In the urban neighbourhood, this research showed a relationship between the interpersonal ties and community sentiment, which supports findings of Campbell et al. (1976), Zehner (1972) and Adams (1992a).

- In Bearsden (suburban neighbourhood), a lack of facilities in this neighbourhood, as a perception of objective conditions of the residential environment, is found to have a negative influence on community sentiment.

6.3.1.2 Community evaluation

A summary of deductions on community evaluation in both neighbourhoods is given in the following list:

- In contrast to the results on community sentiment, community evaluation in the urban neighbourhood (the West End) is greater than in the suburban neighbourhood (Bearsden).

- The findings on community evaluation in the two neighbourhoods support the previous findings of other researchers in this field (Parkes et al., 2002; Spain, 1988; Lee and Guest, 1983; Fried, 1982; Campbell et al., 1976) in a way that this aspect of neighbourhood attachment is influenced by perceived neighbourhood attributes rather than by personal and housing background variables. Therefore, it is not surprising that community evaluation is higher in an urban than in a suburban neighbourhood, especially if the perception on neighbourhood facilities is considered.

- The findings of this research show that, in both neighbourhoods, community evaluation is influenced by: the happiness with contacts with the next-door neighbours; feeling of safety; satisfaction with the public transport system; and overall neighbourhood facilities. Also, in both neighbourhoods, community evaluation is negatively related to a perceived lack of facilities.

- Models for the prediction of total neighbourhood satisfaction demonstrate that, in the West End (urban neighbourhood), among all predictors of community evaluation, the feeling of safety has the strongest individual influence. In Bearsden, it is the satisfaction with the public transport system that has the strongest individual influence of all predictors on the community evaluation. This means that in Bearsden, the greatest enhancement of community evaluation could be experienced with the improvement of resident's satisfaction with the public transport system. However, this result does not imply that with the improvement of the public transport in Bearsden, residents would automatically switch to using it more often.

6.3.2 Social and Environmental Context

The main inferences of the study on residential preferences in the two neighbourhoods (the West End and Bearsden) regarding the differences between the social and environmental contexts for their residents are:

- Bearsden (suburban neighbourhood) expresses greater homogeneity of residents (in terms of perceived similarities between the next-door neighbours) and greater happiness with contacts with neighbours in comparison to the West End (urban neighbourhood). However, heterogeneity of resident's structure in the West End is one of its main features and it was beyond the scope of this research to make inferences whether people in general prefer residential neighbourhoods in which they feel similar to other residents or not.

- The two neighbourhoods do not differ in terms of the perceived neighbourhood safety. This finding supports the results of the research done by Parkes et al. (2002) because it shows that people living in affluent neighbourhoods (both urban and suburban) perceive their neighbourhood as quite safe.

- Satisfaction with the overall facilities provided by the residential neighbourhood is higher in the West End than in Bearsden and urban residents use certain facilities (e.g. entertainment facilities and local shopping facilities) more frequently than suburban residents. However, the two neighbourhoods didn't show significant difference in terms of their resident's perception on the lack of certain facilities. When interpreting this result in Bearsden, it can be understood that, although there is

an objective lack of facilities, residents accept the deficiency because they are mobile.

- Regarding the importance of the home having a private garden, suburban residents, who in majority already have a private garden, consider it more important than urban residents.

6.3.3 Physical Planning Issues

A summary of the results on the two neighbourhoods' residential preferences profiles regarding the physical planning issues includes the following deductions:

- There is a significant difference between the residents in the two neighbourhoods regarding the average distance they travel from their home to the place of work (daily activity). As it was hypothesised, the research showed that Bearsden (suburban) residents in general have to travel longer distances in order to reach their place of work or daily activity when compared to the West End (urban) residents. However, further study on the efficiency of household travel patterns (i.e. time spent in travel) was beyond the scope of this research.

- In Bearsden (suburban neighbourhood), residents predominantly use a private car, both as the most common everyday means of transportation and as the main transportation mode for accessing different facilities. Although Bearsden sample overshoots by 14.74% 2001 Census data on using a private car as the main travelling mode, the Census also shows predominant private car use (65.74%) in the whole Bearsden population. In this neighbourhood, frequencies of walks and especially of public transport use are significantly lower than in the West End (urban neighbourhood).

- In the West End, the level of motorisation (number of private cars per household) is much lower than in Bearsden. In parallel, the possibility to manage without a private car is much higher in the West End than in Bearsden. It has to be also stressed that the sample in the West End undershot 2001 Census data by 14.69% regarding the proportion of households without any car or van.

- The two neighbourhoods significantly differ in terms of their residents' satisfaction with the public transport system organisation. While urban residents are

more satisfied with public transport system and use it more frequently, suburban residents are much less satisfied with the public transport system in their residential neighbourhood and rely predominantly on a private car use.

6.3.4 Residential Mobility

The main inferences of the study on residential preferences in the two neighbourhoods (the West End and Bearsden) regarding residential mobility intentions of their residents are:

- When residential mobility intentions are compared between the two case study neighbourhoods, it can be deduced that the West End (urban) residents are much more likely to consider moving from their residential neighbourhood to either another urban neighbourhood or to suburban and rural types of neighbourhoods. Bearsden (suburban) residents predominantly express the wish to remain living only in their present neighbourhood.

- There were only three variables that influenced residential mobility intentions in both neighbourhoods: job situation; duration of living in a present neighbourhood; and community sentiment. Regarding job situation, in both the West End and Bearsden, people who are economically inactive (e.g. students in the West End and the retired population in Bearsden) are less likely to consider moving from the present neighbourhood type. In both neighbourhoods, the duration of living in a present neighbourhood is negatively correlated with the residential mobility intentions. The same type of relationship is present in both neighbourhoods regarding community sentiment and residential mobility intentions.

- In the West End only, certain background variables (respondent's gender; age group; marital status; and highest level of education) and certain variables of resident's environmental context (type of home and happiness with contacts with neighbours) are related to residential mobility intentions.

- In Bearsden only, the background variable of current occupation and certain variables of environmental context (perceived pollution problems in Bearsden and perceived lack of facilities) are related to residential mobility intentions.

Due to the limits of this study related to the number of respondents, it was beyond its scope to answer the question on the residential mobility intentions of people in different stages of their life-cycle.

However, the current residential structure in each neighbourhood reflects which groups of population are more attracted by the urban type of living (e.g. less than 60 years old single adults and couples without children) or by the suburban type of living (e.g. adults with dependent children and retired population).

7 Conclusion

The discussion from the previous chapter regarding residential preference profiles in the two prestigious types of neighbourhoods is to be followed by the conclusion on how these results fit in to the urban sustainability picture.

The final conclusions of this thesis will be given in a summary, the research contributions, and in recommendations and agenda for further research.

7.1 Summary

This thesis was initiated by the question of the interrelationship between the residential preferences and urban sustainability. Therefore, the aim was to investigate on any common points between the two concepts and the possibility of residential preferences supporting sustainable urban goals.

The concept of sustainability is reviewed from its broadest context to the very specific topic of urban sustainability. Sustainability on urban level means the opposite to sprawl, i.e. from the normative point of view, between urban and suburban type of living, the former is considered to be sustainable.

However, people's choices (when they are able to exercise them) do not necessarily support urban living, therefore, residential preferences' structure was another concept of this thesis that was actually researched. The research was based on the two case study neighbourhoods in and outside Glasgow, which were of urban (the West End) and suburban type (Bearsden). These two neighbourhoods were suitable for the comparative analyses because each of them exhibited a preference within its neighbourhood type.

The methodology employed in the research was the one of social surveys, where the method of collecting data was the mail questionnaire. This method provided expected and sufficiently high response rates in each case study neighbourhood (32% of the 400 questionnaires that were sent in the West End, and 33.7% of the 350 questionnaires that were sent in Bearsden).

In the part of analyses, there were eight research hypotheses that were based on research questions related to the residential preference dimensions in each neighbourhood type. All these research hypotheses were supported because their relevant null hypotheses were rejected through applying various statistical tests. The statistical analyses results proved that, as expected, certain dimensions of residential preference were stronger in one type of neighbourhood than in another and that some variables of resident's socio-economic and environmental characteristics can influence the variability of dominant urban or suburban preference.

7.2 Research Contributions

The outcomes of the research initiated by the question of why people of similar income groups prefer urban or suburban neighbourhood types show the following correlations with the key indicators and target values of the model of sustainable development, previously postulated in the context of this study.

Firstly, preferred type of urban neighbourhood (the West End) is in accordance with the recommended model on sustainable urban development and it demonstrates that higher residential densities (70 - 133 people/ha in the West End) can produce certain qualities that are residentially attractive.

As the key recommendations on sustainability suggest, the West End population densities result in rapid diminishing of land-intake: more people are close enough to communal facilities to walk; instead of private car dependence people use viable public transport system more frequently; and in general, there is a reduction of need to travel. In contrast to its suburban counterpart Bearsden, the West End exhibits a variety of housing types and greater mix in population. However, the fact that the West End provides better access of services and facilities for less mobile groups of population is one of its main attractive features.

On the other hand, Bearsden as a preferred suburban low-density type of residential neighbourhood is in conflict with urban sustainability issues because it contributes to sprawl. Bearsden residential densities (15 - 28 people/ha) are much lower than it is suggested by the key recommendations on sustainable developments and indeed, these low densities do not support viable public transport system, local services and

facilities (apart from primary schools) and the variety of house and tenure types. However, high suburban preference is clearly not shaped out by the negative connotations of low-density living, and whilst Bearsden residents are mobile and are able to access all the facilities they require outside their neighbourhood by a private car they do not show propensity to accept denser living forms.

This research succeeded in two of its main objectives: 1) to comprehend urban and suburban residential preferences and their underlying components for the people who are able to exercise their residential choices, and 2) to identify residential preference dimensions' flexibility and adaptability in support of suburban and more importantly, urban life.

7.2.1 The strength of residential preference dimensions in the West End (urban neighbourhood)

In the urban neighbourhood (the West End), from the four dimensions of residential preference that were analysed, the greatest strength is shown in community evaluation component of neighbourhood attachment and in physical planning issues.

These results confirm the findings of Talen (2001) that neighbourhood attachment is one of the strongest dimensions of residential preference. As an extension of her study, which related only to the affluent suburban neighbourhood, this research substantiated high strength of this dimension in the residentially attractive urban neighbourhood. However, this research's results show that the attachment to the urban neighbourhood is stronger when it is analysed in respect of its community evaluation component (rational assessment of the relative advantages and disadvantages of living in the urban neighbourhood) than when it is analysed in respect of its community sentiment component (overall emotional attachment to the neighbourhood).

The strength of community evaluation in the West End is particularly influenced by the variables of perceived neighbourhood attributes (happiness with contacts with neighbours, feeling of safety, satisfaction with the public transport system, and overall neighbourhood facilities), which backs up the previous findings of Parkes et

al. (2002), Spain (1988), Lee and Guest (1983), Fried (1982), and Campbell et al. (1976).

However, this research challenges the findings of Adams (1992a) and Lee et al. (1991) that duration of residence influences community evaluation, since this was not proven in the case of the West End (urban neighbourhood).

Regarding the strength of physical planning issues, the West End performed much better than Bearsden in almost all of this dimension's aspects (e.g. shorter distances to the place of work or daily activity, higher satisfaction and more frequent use of the public transport system, better access to various facilities, less car dependency).

The highest strength of community evaluation and physical planning issues in the West End signifies their importance in retaining present urban population and clearly supports sustainable urban goals.

7.2.2 Variability of urban preference

The greatest flexibility from all the dimensions of residential preference in the West End (urban neighbourhood) is shown in residential mobility. When compared to Bearsden residents, the West End residents are more likely to consider moving to the neighbourhood of either the same or opposite type than their present one. This is the main issue of divergence of residential preference dimensions from sustainable urban goals.

This research reported that the main influence on the West End residents' considerations of moving out from their neighbourhood came from their age group; level of education; job situation; type of home; duration of living in a present home; and happiness with contacts with the neighbours. Also, residential mobility of the urban residents was found to be related to the community sentiment, i.e. lower community sentiment influenced higher residential mobility intentions with the West End residents.

7.2.3 The strength of residential preference dimensions in Bearsden (suburban neighbourhood)

In the suburban neighbourhood (Bearsden), from the four dimensions of residential preference that were analysed, the greatest strength is shown in community sentiment component of neighbourhood attachment and in the lack of residential mobility intentions.

Again, the results on high strength of neighbourhood attachment in a suburban neighbourhood and its least flexibility among all dimensions of residential preference confirm the findings of Talen (2001). However, this research's results point out that suburban attachment is greater if it is regarded in its community sentiment component than in community evaluation component.

The strength of community sentiment in Bearsden is particularly influenced by the variables of local statuses (length of residence in Bearsden and in the present home, type of household, people's age, job situation and current occupation). These results back up the findings of Lee et al. (1991), Wellman (1979), Hunter (1974; 1978), and Kasarda and Janowitz (1974). However, the unique contribution of this research regarding factors influencing community sentiment in a suburban neighbourhood is that it substantiated that resident's perception on lack of neighbourhood facilities is negatively correlated with the community sentiment in Bearsden.

As in contrast to the urban type of neighbourhood, residential mobility in Bearsden (suburban neighbourhood) showed to be one of the least flexible dimensions. The majority of Bearsden residents does not consider leaving the neighbourhood at all and this lack of residential mobility intentions is highly supported by the strength of community sentiment.

The implications of these findings are that higher stability of a suburban neighbourhood, measured by its affluence, resident's longer duration of staying and older age, clearly influences stronger community sentiment and lack of residential mobility intentions, thus being least supportive for the return of suburban population to the urban living.

7.2.4 Variability of suburban preference

The greatest flexibility from all the dimensions of residential preference in Bearsden (suburban neighbourhood) is shown in physical planning issues. While suburban residents are highly emotionally attached to their neighbourhood and moreover, the majority does not consider leaving it at all, they acknowledge the problems regarding their neighbourhood's physical planning issues (e.g. longer distances to their place of work or daily activity, the lack of a public transport system, private car dependency, lack of local facilities and dominant private car use for accessing provision centres).

Apart from the variability in physical planning dimension of residential preference in Bearsden, this research demonstrated the weaker community evaluation in this neighbourhood when compared to the West End (urban neighbourhood). It is in the variability of these two components of suburban residential preference that one might see an opening niche for attracting people back to the urban living. Yet, the degree of optimism depends on whether one views the glass as half empty or half full. Lack of affluent suburban resident's mobility intentions and their strong emotional attachment to the present neighbourhood may be interpreted as rather disheartening.

7.2.5 Model for prediction of neighbourhood satisfaction

The major contribution of the research regarded the development of a model for the prediction of resident's total neighbourhood satisfaction, which could serve as an indicator to people's expectations from the sustainable residential neighbourhood.

This model employed six variables for predicting the total neighbourhood satisfaction in each neighbourhood, and five of those variables were the same for both neighbourhood types.

In the West End (urban neighbourhood), the model included the following variables: ownership of home; happiness with contacts with neighbours; feeling of safety; satisfaction with the public transport system; satisfaction with the overall facilities; and perceived lack of facilities. This Model explains 64.7% of the variance in neighbourhood satisfaction in the West End, which stands for a very high level of

prediction of what urban residents rationally assess as the relative advantages and disadvantages of living in their neighbourhood type.

In Bearsden, the model included the same variables for the prediction of neighbourhood satisfaction apart from ownership of home, which was replaced by the similarities with the next-door neighbours. Again, a significant result was achieved with the model's ability to predict neighbourhood satisfaction in Bearsden (suburban neighbourhood), since in this neighbourhood the model explained 65.6% of the variance in neighbourhood satisfaction.

Qualities encompassed by the Model for the prediction of neighbourhood satisfaction in both neighbourhood types introduce locally contingent perspectives on the meaning of sustainability and conditions and means to achieve it.

7.3 Recommendations and Agenda for further research

The experience from the research on residential preferences in urban and suburban neighbourhoods underlines the importance of formulating the questions with view of the possibility to apply more powerful techniques of statistical analyses. Most often, this presumes a wider use of measuring scales for the variables deriving from the questionnaire. The variables measured by scales are typically of a psychological nature and they encompass a number of items, all of which should be marked by the respondent who employs a certain marking scale. All the items have to measure the same underlying construct or otherwise the scale we developed would not be reliable (it would not have the internal consistency). The most common measure of internal consistency of scale is the Cronbach alpha coefficient, and for considering a scale to be reliable with the sample, this coefficient should be above 0.7.

In this research, as an example of such a scale, the Neighbourhood Satisfaction Scale (NSS) was developed in order to measure community evaluation in each case study neighbourhood. This scale enabled application of a powerful statistical technique like Standard Multiple Regression for predicting neighbourhood satisfaction.

In future research, the NSS can be applied for measuring community evaluation in other neighbourhoods, which are not necessarily those that attract people who are able to exercise their residential choice. It is important to probe the scale beyond the

case studies areas of this research and to assess residents' views about neighbourhood satisfaction as well as the factors which influenced their residential location choices.

The city exists as a set of different districts and as a rather complex patchwork of neighbourhoods. This mosaic may reflect differences in preferences, for example two-adult, affluent households can be found in city suburbs, and also in different locations within a city. However, the city mosaic is also shaped by differences in incomes. Inequalities in incomes are sharply reflected in housing locations, tenures and qualities that exist in a city and its wider context. These issues were beyond the scope of the study on residential preferences but, in future research, it would be important to investigate more on the association between tenure and choice of sustainable urban developments. Future studies should also expand the investigation on the relationship between the property prices and growing/ shrinking households.

With more resources, especially with a wider sample involved, further research on residential preferences and urban sustainability should aim to test the actual moves of households from one neighbourhood type to another depending on the stage in their family life-cycle. There is a need for a survey similar to the Market Information Team one (1997 Greater Glasgow Housing Choice Survey) with an emphasis on people who had recently moved, particularly in the 30-55 age group, because this is the group that is responsible for greatest proportion on the projected increase in households in the UK. In addition, this is seen as 'a prime group fuelling demand for high density housing on brownfield sites' (Scottish Executive Central Research Unit, 2001).

The results of this research regarding residential mobility intentions suggest that urban residents are more inclined to consider moving to the opposite types of neighbourhoods than the suburban residents are. Therefore, more research is needed to bring to light the factors influencing urban population to leave their neighbourhood for suburban or rural type and this research would probably extend the scope of residential preference study.

If the sustainable urban goal is to guide public preferences toward higher densities and reduction of the private car use, future research should aim to substantiate the

effects of people's higher awareness and exposure to these issues. The task is to convince people in suburbs of the need to change their preferences towards environments with higher residential densities. This can be achieved voluntarily, because certain groups of suburban population (e.g. single people or couples with no children) are already attracted by urban living; or by incentives (e.g. to provide a wider range of locations within a city that would meet the model for prediction of neighbourhood satisfaction), and by penalties (e.g. introduction of higher fuel taxes, or suburban residents having council tax bands that would take in account their use of nearby city facilities).

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Appendix A: Sample of the postal questionnaire (the West End)

To the occupier

You have received a questionnaire form aimed to identify and measure your preferences and opinions on your place of residence.

This questionnaire survey is done for academic purposes, it is completely anonymous and conducted on randomised sample. The only criterion of choosing your household is that it is located in the West End of Glasgow.

One representative of your household is asked to fill in the questionnaire form describing his/her opinion on the questions asked and then to post it back to the researcher in the addressed envelope that you will find inside the letter. No stamps are necessary.

Please complete and send back the questionnaire as soon as possible (preferably within a week from receiving it).

Your full cooperation is of maximum value for the research and is highly appreciated.

Thank you very much for helping this research.

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A QUESTIONNAIRE ON RESIDENTIAL PREFERENCES

Instructions for completing the questionnaire

- In some questions you are asked to write your answer in figure in boxes.
- Most of the questions ask you to tick only one answer – tick boxes like this √.

If you make a mistake simply cross it out and tick the right answer.

- Only in question number 36 you are asked to tick three answers and give them a rank of priority.
- Some questions ask you to write your answer in space provided by the questionnaire. Please write in **CAPITAL** letters.

SECTION 1 **INTRODUCTION**

1- Which is the number of people living in your home by age, including yourself?
(Please write in figure in boxes)

Age	Under 5yrs	5-14yrs	15-29yrs	30-44yrs	45-59yrs	60yrs +
Number						

2- What is the sex of people living in your home by age, excluding yourself?
(Please write in figure in boxes)

Age	Under 5yrs	5-14yrs	15-29yrs	30-44yrs	45-59yrs	60yrs +
Female						
Male						

3- What is your sex?

Male □1 Female □2

4- Which is your marital status? *(please tick one answer which applies)*

Single □1 Living with a partner (not married) □2 Married first time □3
Remarried □4 Separated □5 Divorced □6 Widowed □7

5- What is the highest level of education that you have completed? *(please tick one answer which applies)*

Primary school □1 Some secondary school □2 Completed high school □3
Some additional training □4 Completed undergraduate studies □5
Completed postgraduate studies □6

6- What is your current occupation? *(please tick one answer which applies)*

Professional ☐1 Managerial technical ☐2 Skilled non-manual ☐3
Skilled manual ☐4 Partly skilled ☐5 Unskilled ☐6
Other ☐7

7- What is your job situation? *(please tick one answer which applies)*

Employee (Full-time) ☐1 Employee (Part-time) ☐2 Self-employed ☐3
Student ☐4 Looking after home/family ☐5 Unemployed ☐6
Retired ☐7 Permanently sick / Disabled ☐8 Other ☐9

SECTION 2 RESPONDENT'S ENVIRONMENT (URBAN AREA)

8- What type of home do you live in? *(please tick one answer which applies)*

Detached house ☐1 Semi-detached house ☐2 Tenement flat ☐3
Terraced house ☐4 High-rise or block of flat ☐5
Other ☐6 *(please describe)*_____

9- Your home is: *(please tick one answer which applies)*

Owner occupied ☐1 Private rented ☐2 Council rented ☐3
Other ☐4 *(please specify)* _____

10- For how long have you been living in your present home? *(please tick one answer which applies)*

Less than a year ☐1 1-5 years ☐2 6-10 years ☐3 11-20 years ☐4
More than 20 years ☐5

11- For how long have you been living in the West End of Glasgow? *(please tick one answer which applies)*

Less than a year ☐1 1-5 years ☐2 6-10 years ☐3 11-20 years ☐4
More than 20 years ☐5

12- In which type of home did you spend most of your time as a child? *(please tick one answer which applies)*

Detached house ☐1 Semi-detached house ☐2 Tenement flat ☐3
Terraced house ☐4 High-rise or block of flat ☐5
Other ☐6 *(please describe)*_____

13- In which type of neighbourhood did you spend most of your time as a child? *(please tick one answer which applies)*

Urban ☐1 Suburban ☐2 Rural ☐3

14- Do you feel attached to the neighbourhood in which you are living now? *(please tick <u>one</u> answer which applies)*

I don't feel at home in this neighbourhood. ☐1

Given the opportunity, I would like to move to another location. ☐2

I feel like I'm presently attached to this neighbourhood but may move in the future. ☐3

I plan to remain a resident of this neighbourhood for a number of years. ☐4

I want to live only in my present neighbourhood. ☐5

15- Rate all the listed qualities (attractions) of the West End as they appear to you on the following scale:

strongly disagree	disagree	mildly disagree	neutral/ undecided	mildly agree	agree	strongly agree
1	2	3	4	5	6	7

I like the convenient location ☐

I like the 'village feel' (friendly people) ☐

I like the facilities, amenities and house values ☐

I like the quietness and safety ☐

I like the good neighbours ☐

I like the public transport system ☐

I like the environmental quality and level of cleanliness ☐

16- Does your home have a garden? *(please tick <u>one</u> answer which applies)*

It has a private garden ☐1 It has a communal garden ☐2

Other ☐3 *(please specify)*_____

17- It is very important for me and my family to have a private garden. *(please tick <u>one</u> answer which applies and write your comment in a box)*

strongly disagree ☐1

disagree ☐2

undecided ☐3

agree ☐4

strongly agree ☐5

Please give reason(s)

18- Which are the similarities between you and your next-door neighbours?

_____

_____

_____

19- How often do you meet your next-door neighbours? *(please tick <u>one</u> answer which applies)*

never	☐1
very rarely	☐2
rarely	☐3
occasionally	☐4
frequently	☐5
very frequently	☐6

20- I am very happy with contacts with my neighbours. *(please tick <u>one</u> answer which applies)*

strongly disagree	☐1
disagree	☐2
neutral / undecided	☐3
agree	☐4
strongly agree	☐5

21- I feel very safe in the neighbourhood where I live. *(please tick <u>one</u> answer which applies and write your comment in a box)*

strongly disagree	☐1
disagree	☐2
neutral / undecided	☐3
agree	☐4
strongly agree	☐5

Please specify the answer

22- Does your neighbourhood have pollution problems? *(please tick <u>one</u> answer which applies)*

Yes ☐1 No ☐2

SECTION 3 **TRANSPORTATION**

23- What means of transportation do you mainly use to go to work or to conduct your daily business? *(please tick <u>one</u> answer which applies)*

Private car ☐1 Underground/Train ☐2 Bus ☐3 Bicycle ☐4
Motorcycle ☐5 Walk ☐6 Other ☐7*(please specify)*_____

24- How far is the place of your work or main daily activity from your home when using your most common means of transportation? *(please indicate both in minutes and miles)*

IN MINUTES	
IN MILES	

Please write what is the place of your main daily activity if you don't work

25- How often do you walk and use public and private transport? *(please tick only <u>one</u> answer from each line)*

	Once a day or more frequently	Less than once a day but once a week or more	Less than once a week but once a month or more	Less than once a month but once a year or more	Never
WALK					
PUBLIC TRANSPORT					
PRIVATE CAR					

26- The public transport system in my neighbourhood is very well organised. *(please tick <u>one</u> answer which applies and write your comment in a box)*

strongly disagree ☐1
disagree ☐2
neutral / undecided ☐3
agree ☐4
strongly agree ☐5

Please specify the answer

27- How many cars are there in your household? *(please tick <u>one</u> answer which applies)*

None ☐1 One ☐2 Two ☐3 Three or more ☐4

If you don't have a car skip to question 30

28- Could you manage without a car?

Yes ☐1 No ☐2

Please give reasons

29- Do you think that your household needs an additional car?

Yes ☐1 No ☐2

Please give reasons

If you don't have children going to nursery /school please skip to the Section 4 (Question number 32)

30- Who accompanies your children to their nursery / school and which way of transport do they use? *(please write the number of children using certain mode(s) of transport)*

	NURSERY	PRIMARY SCHOOL	SECONDARY SCHOOL
Parent(s) or an adult driving a car			
Parent(s) or an adult using public transport			
Parent(s) or an adult, on foot			
They go to school on their own by public transport			
They go to school on their own, on foot			

31- How far away is your children's nursery / school from your home? *(please write both in minutes and miles)*

	NURSERY	PRIMARY SCHOOL	SECONDARY SCHOOL
IN MINUTES			
IN MILES			

SECTION 4 **FACILITIES**

32- How do you usually access the following destinations? *(please tick only <u>one</u> answer from each line)*

	by private car	by public transport	on foot	other
city centre				
daily shopping				
weekly shopping				
health centre				
sport centre				
green / open spaces				
post office, bank, other administration				
library				
cinema, theatre				
restaurants, pubs, cafés				

33- How often do you go to the following destinations? *(please tick only <u>one</u> answer from each line)*

	every day	less than every day but once a week or more	less than once a week but once a month or more	less than once a month but once a year or more	never
city centre					
daily shopping					
weekly shopping					
health centre					
sport centre					
green / open spaces					
post office, bank, other administration					
library					
cinema, theatre					
restaurants, pubs, cafés					

34- I am very happy with the overall facilities provided by my neighbourhood. *(please tick <u>one</u> answer which applies and write your comment in a box)*

strongly disagree ☐1
disagree ☐2
undecided ☐3
agree ☐4
strongly agree ☐5

Please explain the answer

35- Which are the facilities that you cannot find in your neighbourhood and you would require? *(please write in space provided)*

_____
_____
_____

SECTION 5 **AMENITIES**

36- When you chose your current place of residence which of the following factors influenced your decision? *(please select up to 3 options in order of importance, indicating your 1st, 2nd and 3rd choices write in 1,2,3)*

General location of the neighbourhood ..... ☐
Appearance of the neighbourhood ..... ☐
Reduced traffic and noise ..... ☐
Proximity to work or place of daily activity ..... ☐

Quality / location of schools ☐
Community amenities (shops, parks, recreation areas, libraries) ☐
Places of entertainment (cinemas, restaurants, cafés) ☐
Wanted a bigger house ☐
Wanted a private garden ☐
Wanted a smaller house ☐
Wanted to change house type ☐
Wanted to own a house ☐
Property values, re-sale values ☐
Other *(please specify)* _____ ☐

37- If you could exercise your choice to live anywhere else but in the West End of Glasgow where would it be and why?

_____
_____
_____
_____
_____

SECTION 6 **FINALLY**

38- Are there any general or specific comments that you wish to make on topics covered by this questionnaire?

Please write in this space

Date of filling in the questionnaire form is:.....

Appendix B: Codebook for the Questionnaire

VARIABLE NAME	SPSS VARIABLE NAME	CODING INSTRUCTIONS
1. Identification number	id	Number assigned to each questionnaire
2. Neighbourhood	nid	1= West End 2= Bearsden
3. Household size	hhlds	Number of people living in respondent's home
4. Household type	hhldt	1= single adult household (less than 60yrs old) 2= two or more adults (44yrs old and younger) without children 3= parent(s) living with at least one child of 14yrs and under 4= parent(s) living with children only above 15yrs old 5= two or more people of middle to old age (45+) without children and "empty nesters" 6= single old household
5. Respondent's gender	sex	1= male 2= female
6. Respondent's age group	rag	1= 15-29yrs 2= 30-44yrs 3= 45-59yrs 4= 60yrs+
7. Marital status	marital	1= Single 2= Living with a partner / Married 3= Separated/ Divorced 4= Widowed
8. Highest level of education	edu	1= Primary school 2= Some secondary school 3= Completed high school 4= Some additional training 5= Completed undergraduate studies 6= Completed postgraduate studies
9. Current occupation	occup	1= Professional 2= Managerial technical 3= Skilled (manual and non-manual) 4= Partly skilled and Unskilled 5= Other
10. Job situation	jobsit	1= Employee (Full-time) 2= Employee (Part-time) 3= Self employed 4= Student 5= Looking after home/ family 6= Unemployed 7= Retired 8= Permanently sick / Disabled 9= Other
11. Type of home	toh	1= Detached house 2= Semi-detached house 3= Tenement flat 4= Terraced house 5= High-rise or block of flats

12. Ownership of home	owner	1= Owner occupied 2= Other (Private rented, Council rented, rented from Scottish Homes/ a Housing Association, a shared ownership through a Housing Association, bought directly from Council/ Scottish Homes)
13. Duration of living in a present home	preshome	1= Less than one year 2= 1-5 years 3= 6-10 years 4= 11-20 years 5= More than 20 years
14. Duration of living in a present neighbourhood	presneig	1= Less than one year 2= 1-5 years 3= 6-10 years 4= 11-20 years 5= More than 20 years
15. Type of home in childhood	childtoh	1= Detached house 2= Semi-detached house 3= Tenement flat 4= Terraced house 5= High-rise or block of flats
16. Type of neighbourhood in childhood	childton	1= urban 2= suburban 3= rural
17. Attachment to a present neighbourhood	attachn	1= I don't feel at home in this neighbourhood. 2= Given the opportunity, I would like to move to another location. 3= I feel like I'm presently attached to this neighbourhood but may move in the future. 4= I plan to remain a resident of this neighbourhood for a number of years. 5= I want to live only in my present neighbourhood.
18. Likes in the neighbourhood	lik1 – lik7	1= strongly disagree 2= disagree 3= mildly disagree 4= neutral/undecided 5= mildly agree 6= agree 7= strongly agree

lik1= like of convenient location
lik2= like of 'village feel' (friendly people)
lik3= like of facilities, amenities and house values
lik4= like of quietness and safety
lik5= like of good neighbours
lik6= like of public transport system
lik7= like of environmental quality and level of cleanliness

19. Home having a garden	garden	1= Private garden 2= Communal garden 3= No garden 4= Other

20. High importance of having a private garden	imprivg	1= strongly disagree 2= disagree 3= neutral/ undecided 4= agree 5= strongly agree
21. Similarities with next-door neighbours	neighsim	1= Professionals or similar occupation 2= Similar ages, stage in a family life-cycle (i.e. either having children or no children at all or having grown up families), similar social class, affluence 3= Attitude, lifestyle and shared values (mutual respect, friendliness but not intrusiveness of neighbours, enjoyment of the area, community interest, long stay in the neighbourhood, shared hobbies, car ownership) 4= There is a great diversity between the neighbours (none or very little similarities)
22. Meeting the next-door neighbours	neighfr	1= never 2= very rarely 3= rarely 4= occasionally 5= frequently 6= very frequently
23. Happiness with contacts with the next-door neighbours	neighhap	1= strongly disagree 2= disagree 3= neutral/ undecided 4= agree 5= strongly agree
24. Feeling very safe in my residential neighbourhood	safen	1= strongly disagree 2= disagree 3= neutral/ undecided 4= agree 5= strongly agree
25. Pollution problems in the neighbourhood	pollut	1=yes 2=no
26. Everyday most common means of transportation	transpm	1= private car 2= underground/ train 3= bus 4= walk 5= other (bicycle, motorcycle, taxi, plane…)
27. Frequency of walks	wfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently
28. Frequency of using the public transport system	ptfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently

29. Frequency of using a private car	carfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently
30. Satisfaction with the public transport system organisation in the neighbourhood	pto	1= strongly disagree 2= disagree 3= neutral/ undecided 4= agree 5= strongly agree
31. Number of private cars in the household	carnum	1= none 2= one 3= two or more
32. Possibility to manage without a car[#]	nocaropt	1= yes 2= no
33. Need for an additional car in the household[#]	addcar	1= yes 2= no
34. Distance to place of work or daily activity	distwda	1= up to 1 mile (or up to 40 min of walk) 2= more than 1 mile but less than 10 miles 3= more than 10 miles but less than 50 miles 4 = more than 50 miles and changeable distances
35. Distance of child(ren) nursery/ school from home[*]	schoold	1= up to 1 mile (or up to 40 min of walk) 2= more than 1 mile but less than 10 miles 3= more than 10 miles 4 = other (changeable distances)
36. How do children go to their nursery or school*	chitran	1= by private car 2= by public transport 3= on foot
37. Transportation to the city centre	tcc	1= by private car 2= by public transport 3= on foot 4= other
38. Transportation for daily shopping	tds	1= by private car 2= by public transport 3= on foot 4= other
39. Transportation for weekly shopping	tws	1= by private car 2= by public transport 3= on foot 4= other
40. Transportation to a health centre	thc	1= by private car 2= by public transport 3= on foot 4= other

This question is aimed only to people who have a private car in the household

[*] This question is aimed only for respondents with children of pre-school and school age in the household

41. Transportation to a sport centre	tsc	1= by private car 2= by public transport 3= on foot 4= other
42. Transportation to green/ open spaces	tgs	1= by private car 2= by public transport 3= on foot 4= other
43. Transportation to the post office, bank and other administration	tadm	1= by private car 2= by public transport 3= on foot 4= other
44. Transportation to the library	tlib	1= by private car 2= by public transport 3= on foot 4= other
45. Transportation to cinema and theatre	tct	1= by private car 2= by public transport 3= on foot 4= other
46. Transportation to restaurants, pubs and cafés	trpc	1= by private car 2= by public transport 3= on foot 4= other
47. Frequency in going to the city centre	ccfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently
48. Frequency in daily shopping	dsfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently
49. Frequency in weekly shopping	wsfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently
50. Frequency in going to a health centre	hcfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently

51. Frequency in going to a sport centre	scfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently
52. Frequency in going to green/ open spaces	gsfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently
53. Frequency in going to a post office, bank and other administration	admfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently
54. Frequency in going to a library	libfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently
55. Frequency in going to a cinema and theatre	ctfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently
56. Frequency in going to restaurants, pubs, cafés	rpcfr	1= never 2= less than once a month but once a year or more times a year 3= less than once a week but once a month or more times a month 4= less than once a day but once a week or more times a week 5= once a day or more frequently
57. Very happy with overall facilities provided by neighbourhood	facility	1= strongly disagree 2= disagree 3= neutral/ undecided 4= agree 5= strongly agree

58. Lack of facilities that respondent would require in the neighbourhood	nofac	1= Lack of facilities for children (open spaces, pre-school centres, safe playing areas which are dog-free, pre-school centres, indoor play area) 2= Lack of sport facilities (sport centres, public swimming pools, skating ring) 3= Lack of cinema, better variety of restaurants and pubs, lack of facilities for young people (youth centres) 4= Lack of transport facilities (better public transport, traffic-free zones, cycle tracks) 5= Lack of shopping facilities (specialised shops, small shops and supermarkets which are closer to home) 6= Lack of other facilities (pharmacies or health service provision with extended working hours, libraries with better stock, job centres, post office and bank facilities, recycling programme, dog waste bins…) 7= No facilities are lacking
59. First amenity of the residential neighbourhood	am1	1= General location of the neighbourhood 2= Appearance of neighbourhood 3= Reduced traffic and noise 4= Proximity to work or place of daily activity 5= Quality/ location of schools 6= Community amenities (e.g. shops, parks, recreation areas, libraries) 7= Places of entertainment (e.g. cinemas, restaurants, cafés) 8= Bigger house 9= Private garden 10= Smaller house 11= Type of home 12= Home ownership 13= Property values 14= Other amenities (temporary location, partner or family already lived in this neighbourhood or family already stayed in this neighbourhood, recommended neighbourhood)
60. Second amenity of the residential neighbourhood	am2	1= General location of the neighbourhood 2= Appearance of neighbourhood 3= Reduced traffic and noise 4= Proximity to work or place of daily activity 5= Quality/ location of schools 6= Community amenities (e.g. shops, parks, recreation areas, libraries) 7= Places of entertainment (e.g. cinemas, restaurants, cafés) 8= Bigger house 9= Private garden 10= Smaller house 11= Type of home 12= Home ownership 13= Property values 14= Other amenities

61. Third amenity of the residential neighbourhood	am3	1= General location of the neighbourhood 2= Appearance of neighbourhood 3= Reduced traffic and noise 4= Proximity to work or place of daily activity 5= Quality/ location of schools 6= Community amenities (e.g. shops, parks, recreation areas, libraries) 7= Places of entertainment (e.g. cinemas, restaurants, cafés) 8= Bigger house 9= Private garden 10= Smaller house 11= Type of home 12= Home ownership 13= Property values 14= Other amenities (temporary location, partner or family already lived in this neighbourhood or family already stayed in this neighbourhood, recommended neighbourhood)
62. Living anywhere else but in the present neighbourhood	difpref	1= I would like to move to the opposite type of neighbourhood (rural or suburban: e.g. Bearsden, Milngavie, Lenzie, Stepps for the West End inhabitants; and rural or urban: e.g. the West End of Glasgow (Hyndland, Hillhead), Anniesland, Jordanhill, South side of Glasgow or Glasgow city centre for the inhabitants of Bearsden) 2= I would like to move within the same type of neighbourhood excluding the one I am presently living in (e.g. south side of Glasgow -Shawlands, Pollockshields, Glasgow city centre or another city for the West End of Glasgow inhabitants, or Milngavie or other suburban area for Bearsden inhabitants) 3= I don’t want to leave my neighbourhood