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Kylie M. Smith
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The Relationship between Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place in a Western Australian Urban Planned Community

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BA (Psych); BPsych**

**This thesis is presented in partial fulfilment of the requirements for the degree of
Doctor of Psychology**

Faculty of Computing, Health & Science

Edith Cowan University

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Supervisors: Professor Lynne Cohen and Dr Julie Ann Pooley

This study has been approved by the ECU Human Research Ethics Committee

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

Abstract

Residential satisfaction is important as it contributes to a person's psychological well-being and quality of life. Residential satisfaction develops due to physical factors such as the provision of parks and amenities within a community, social factors such as a feeling of belongingness to the community and social support within the community and personal factors such as homeownership and length of residence. Sense of community, sense of belonging and sense of place also influence residential satisfaction; however, the extent that these contribute is unclear. As a result, this study investigated the contribution of these constructs to the development of residential satisfaction in the planned community of Ellenbrook, designed to promote these concepts. Additionally, this study investigated the relationship between residential satisfaction, sense of community, sense of belonging and sense of place as well as the factors that comprise of these constructs. A quantitative approach was utilised in which 300 residents completed published questionnaires measuring residential satisfaction, sense of community, sense of place and sense of belonging. To examine the extent that social, physical and personal predictors contributed to the development of residential satisfaction, sense of community, sense of belonging and sense of place, a Kruskal-Wallis analysis was undertaken. The findings indicated that the social and physical factors: feelings of belongingness, community attachment, community participation, minimal fear of crime, community layout and design and housing density contribute to the experience of high levels of residential satisfaction, sense of community, sense of belonging and sense of place. Regarding personal factors: age, ethnicity, homeownership, length of residence and educational level did not contribute to the development of residential satisfaction, sense of community, sense of belonging and sense of place. However, marital status contributed to the development of sense of community, sense of belonging and sense of place but not residential satisfaction. Household income and number of people known in the community contributed to the development of sense of community and sense of belonging, while gender contributed to the development of residential satisfaction and sense of community. These findings indicate that a community developed with sensitivity to people's social and personal needs as well as specific spatial planning elements, contribute to the development of residential satisfaction. The interrelation of sense of community, sense of belonging and sense of place and their impact on residential satisfaction was explored through factor analysis. Results showed nine

factors to emerge. One factor consisted of several residential satisfaction items along with the attraction to neighbourhood components of sense of community, and the place attachment components of sense of place, indicating the communality of these items. Despite efforts to use distinctive measures of these concepts, there is to a certain degree, an inseparable nature of the dimensions of residential satisfaction, sense of community and sense of place. The sense of belonging items emerged as a separate factor indicating it to have a unique identity from residential satisfaction, sense of place and sense of community. Additionally, three of the four place identity items emerged on one factor, as did the residential satisfaction items referring to feelings of dissatisfaction, suggesting the uniqueness of these items. To examine the relationship between residential satisfaction, sense of community, sense of belonging and sense of place, regression analyses were performed. There was a significant positive relationship between residential satisfaction and sense of community $\chi^2 (1,300) = 40.127, p < .05$; residential satisfaction and sense of place $\chi^2 (1,300) = 56.805, p < .05$ and residential satisfaction and sense of belonging $\chi^2 (1,300) = 25.848, p < .05$. This indicates that sense of community, sense of belonging and sense of place contribute to the development of residential satisfaction, supporting previous research. The examination of these concepts in conjunction is a new concept. As a result, this research provides a theoretical understanding of the interrelation, as well as the uniqueness, of residential satisfaction, sense of community, sense of belonging and sense of place. Practically, this research assists policy makers and planners to develop communities that encompass these concepts to avoid issues faced by unplanned communities.

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education.
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Chapter 1

Introduction

Focus of the Research

The purpose of this study is to examine the concepts of residential satisfaction, sense of community, sense of belonging and sense of place in the planned community of Ellenbrook in Western Australia. Ellenbrook was chosen as the research context as it was designed to promote these concepts. Residential satisfaction is the degree to which the community meets a person's needs and aspirations (Lu, 1999). The degree to which these are met is dependent on a person's evaluation of the physical, social and personal elements that their community provides such as a high quality physical environment, the availability of community services, housing quality, interactive networks, feelings of belongingness and acceptance, norms and value systems (Grillo, Teixeira, & Wilson, 2010; James, Carswell, & Sweaney, 2009; Mesch & Manor, 1998; Sirgy & Cornwell, 2002). Residential satisfaction is important as dissatisfaction with one's community can reduce a person's psychological well-being and quality of life (Braubach, 2007; Hur & Morrow-Jones, 2008; Nelson & Preston, 2005; Prilleltensky, 2005) and influence their decision to move from the community (Amole, 2009; Chapman & Lombard, 2006; James et al., 2009; Warrick & Alexander, 1998).

Previous research has identified a number of factors that contribute to residential satisfaction. Some studies have shown the significance of the physical environment, such as parks, amenities and housing (Braubach, 2007; Chapman & Lombard, 2006; da Luz Reis & Lay, 2010; James et al., 2009; Potter & Cantarero, 2006; Uzzell, Pol, & Badenas, 2002), while others have found social factors such as belongingness and social support (Adriaanse, 2007; Braubach, 2007; Tartaglia, 2006; Wood, Frank, & Giles-Corti, 2010; Young, Russell, & Powers, 2004) or personal factors such as length or residence and homeownership (Obst & Stafurik, 2010; Ross, 2002) to be important.

A comprehensive search of the literature identified a broader set of issues that impact on residential satisfaction, the concepts of sense of community, sense of belonging and sense of place (Brown, Dorius, & Krannich, 2005; Filkins, Allen, & Cordes, 2000; Fluery-Bahi, Felonneau, & Marchand, 2008; Grillo et al., 2010; Hur & Morrow-Jones, 2008; Mellor, Stokes, Firth, Hayashi, & Cummins, 2008; Potter & Cantarero, 2006; Young et al., 2004). For example, sense of community, which is

established through social ties within that community, can provide a source of support for new residents. The support offered by these social ties enables individuals to cope with stressors associated with relocation, which in turn minimises psychological distress and increases residential satisfaction (Amole, 2009; Butterworth, 2000; Fisher & Sonn, 2007; Nesdale, Rooney, & Smith, 1997; Pendola & Gen, 2008; Tartaglia, 2006).

Despite previous research, it is unclear the extent to which sense of community, sense of belonging and sense of place contribute to residential satisfaction. Additionally, residential satisfaction, sense of community, sense of belonging and sense of place have not been researched in conjunction. Further, the community of Ellenbrook has been developed to promote these concepts, warranting investigation of these concepts in this Western Australian community. As a result, this study will investigate these concepts in conjunction to determine their contribution to residential satisfaction.

Study Aims & Research Questions

The aims of this study are:

1. To investigate the contribution of sense of community, sense of belonging and sense of place to the development of residential satisfaction in the planned community of Ellenbrook;
2. To investigate the factors that comprise residential satisfaction, sense of community, sense of belonging and sense of place; and
3. To investigate the relationship between residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook.

The research questions addressed in this study are:

1. What is the sense of community within Ellenbrook?
2. What is the sense of belonging within Ellenbrook?
3. What is the sense of place within Ellenbrook?
4. What is the level of residential satisfaction within Ellenbrook?
5. What builds residential satisfaction, sense of community, sense of belonging and sense of place in a planned community?
6. What factors comprise residential satisfaction, sense of community, sense of belonging and sense of place?
7. What is the relationship between residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook?

Plan of the Thesis

The previous section discussed the focus of the research: the examination of residential satisfaction, sense of community, sense of belonging and sense of place to determine the extent of their relationship. Before understanding residential satisfaction and its relationship to sense of community, sense of belonging and sense of place, an understanding of community needs to be determined. Therefore, the next section of this chapter provides background information on community research, discussing the approaches used to understand community and how community is defined based on these approaches. While urban planning theory has typically addressed factors such as structure, setting and formation of community, environmental and community psychology can enhance understanding by focusing on the experience of community and the psychological nature of the environment-person interaction and fit.

In chapter 2 a review of the concepts of residential satisfaction, sense of community, sense of belonging and sense of place is presented. Research indicates connections exist between residential satisfaction, sense of community, sense of belonging and sense of place; however, empirical and theoretical links have not been approached systematically. This chapter reviews the concepts of residential satisfaction, sense of community, sense of belonging and sense of place in order to understand the dynamics of these relationships by investigating them concurrently.

Chapter 3 provides the methodology of this research, beginning with methodological issues, followed by the community profile of Ellenbrook, the setting for this study. Following is demographic information about the participants in this study, and an outline of the procedure undertaken. This study employed a quantitative methodology using existing reliable and validated questionnaires to explore the concepts of residential satisfaction: *General Community Satisfaction Scale* (GCSS) (Vreugdenhil & Rigby, 1987); sense of community: *Neighborhood Cohesion Instrument* (NCI) (Buckner, 1988); sense of belonging: *Sense of Belonging Instrument* (SOBI) (Hagerty & Patusky, 1995); and sense of place: *Sense of Place Scale* (SOPS) (Jorgensen & Stedman, 2001).

Analysis and results of this quantitative study are presented in chapter 4. To examine the level of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook, a Kruskal-Wallis test was performed. The Kruskal-Wallis analysis also examined the components of residential satisfaction, sense

of community, sense of belonging and sense of place within Ellenbrook by analysing the social, physical and personal predictors such as attachment to the community, fear of crime, tenure type and income level. Factor analysis was conducted to explore the factors that comprise residential satisfaction, sense of community, sense of belonging and sense of place. Finally, to examine the relationship between the above concepts within Ellenbrook, regression analyses were performed.

An integration of the results and conclusions are discussed in chapter 5. Research questions one to four discuss the level of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook. This is followed by discussion of research question 5 to address the building of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook by presenting information on social, physical and personal predictors. Information pertaining to research question 6 is then presented; determining the factors that comprise residential satisfaction, sense of community, sense of belonging and sense of place. Finally, research question 7, which addresses the relationship between residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook, is presented. A summary of the discussion is then presented, followed by limitations of the study, indications for further research and theoretical and practical implications arising from this study.

Background to Community

As indicated earlier, prior to understanding residential satisfaction and its relationship to sense of community, sense of belonging and sense of place, an understanding of community needs to be examined. Therefore, this section provides background information on community research by discussing the approaches deployed to understand community and how it is defined based on these approaches. Then follows is discussion of the issues of ‘unplanned’ communities and their impact on residents as well as discussion on the development of planned communities. This enables the issues of ‘unplanned’ community and the benefits of planned communities to be addressed. Finally, how urban planning theory examines community, and how environmental and community psychology can enhance understanding by focusing on the experience of community and the psychological nature of the environment-person interaction and fit is considered.

Many attempts have been made to establish the characteristics of community. An early attempt by Tonnies (1887, as cited in Pretty, Bishop, Fisher, & Sonn, 2007) in his work *Gemeinschaft und Gessellschaft* (translated Community and Society), viewed community on a rural-urban continuum and compared traditional feudal societies with capitalist industrial societies. *Gemeinschaft* (*Community*) relationships involved extended families and villages, and had a sense of tradition, loyalty and respect for individuals, regardless of their status in the community (Allen, 1991; Dunlap & Johnson, 2010; Greenfield, 2009; Pretty et al., 2007). *Gessellschaft* (*Society*) relationships, however, are the secondary relationships within a community, and assist a person to survive in the community and achieve desired goals (Allen, 1991; Day, 2006; Dunlap & Johnson, 2010; Greenfield, 2009; Mannarini & Fedi, 2009).

However, in the early 20th century, Park (as cited in Allen, 1991), inspired by Darwin, defined community as being based on competition for supremacy. Park believed that populations compete for resources to enhance their existence. It is through this competition that interrelated webs of spatial forms and function, and symbiotic relationships based upon interdependence, are developed (Allen, 1991; King, 2009). Towards the latter half of the 20th century, Parks' approach was modified with community being viewed as an "ecological system of interdependence among groups and organisations attempting to adapt to their local environment" (Allen, 1991, p.332).

Another approach to community derived from systems theory in which Parsons (1951, as cited in Allen, 1991) focused on the social systems within a community. Social systems include the economic, legal, political and cultural systems within a society, and are the parent system to social structures such as family, religion, law, economy and class. Social systems involve individuals in a community who are motivated to optimise community satisfaction by interacting with one another. These social systems are linked to their community and with one another by culturally structured and shared symbols. This view indicates that the tie to geographical space is incidental and focuses on group and individual values and interactions that take place to link them to the larger society (Allen, 1991; Garcia, Giuliani, & Wiesenfeld, 1999; King, 2009; Sciortino, 2010).

These approaches to determine the characteristics of a community have contributed to defining it (Allen, 1991; Dunlap & Johnson, 2010; Garcia et al., 1999; Mannarini & Fedi, 2009; Sciortino, 2010). While traditionally, community was defined

by geographical boundaries such as locality or place, i.e., suburb or town, recent definitions emphasise the relationships between people by focusing on three elements: interactions with each other; shared ties; and spatial consciousness (Allen, 1991; Day, 2006; Duffy & Wong, 1996; Dunlap & Johnson, 2010; Garcia et al., 1999; Mannarini & Fedi, 2009; Obst & White, 2007; Osterman, 2000). These elements exist for planned and unplanned communities.

Unplanned Communities

Urbanisation can result in the development of unplanned communities, particularly in low-income countries which struggle to control rapid population growth (Antai & Moradi, 2010; Graham, Gurian, Corella-Barud, & Avitia-Diaz, 2004; Home, Bauer, & Hunziker, 2010). As a result, the planning and provision of facilities and services has been reactive in that authorities deal with and solve the immediate issues of the community while often ignoring the long-term concerns of residents (Graham et al., 2004; Holahan & Wandersman, 1987; Marzoughi & Vanderburg, 2010; Meijers & Burger, 2010; Semenza & March, 2009; Sipes, 2005; Warrick & Alexander, 1998). As needed facilities and services such as community centres and security patrols are often not initiated until years later, this delayed short-term approach results in social problems such as residential instability, isolation, boredom and increased crime (Antai & Moradi, 2010; Graham et al., 2004; Holahan & Wandersman, 1987; Marzoughi & Vanderburg, 2010; Meijers & Burger, 2010; Pendola & Gen, 2008; Semenza & March, 2009; Sipes, 2005). This leads to an increase in adversity and fear, a decrease in confidence, collective efficacy and sense of safety, and a low sense of community, sense of belonging and sense of place (Aiello, Ardone, & Scopelliti, 2010; Butterworth, 2000; Home et al., 2010; James et al., 2009; Meijers & Burger, 2010; Pendola & Gen, 2008; Perkins, Crim, Silberman, & Brown, 2003; Wilson-Doenges, 2000). As a result, residents perceive these communities as hectic, impersonal, cold, polluted and noisy, thereby leading to a decline in residential satisfaction as expectations are unfulfilled (Chapman & Lombard, 2006; Halter, 1998; Holahan & Wandersman, 1987; James et al., 2009; Marzoughi & Vanderburg, 2010; McManus, 1994; Meijers & Burger, 2010; Perkins et al., 2003; Semenza & March, 2009). Planners and developers attribute these consequences to the impersonal and haphazard fashion in which these environments were created. To alleviate these problems, planned communities have been developed (Holahan & Wandersman, 1987; Marzoughi & Vanderburg, 2010; Nasar, 2003; Nasar & Julian, 1995; Semenza & March, 2009).

Planned Communities

Planned communities are deliberately and carefully designed so all aspects of development are considered before construction begins (Eves, 2007; Halter, 1998; Morris, 1994; Nasar, 2003; Rosenblatt, Cheshire, & Lawrence, 2009; Yigitcanlar, Dodson, Gleeson, & Sipe, 2005). They often conform to a single master plan, are large in scale, and contain mixed land use developments, i.e., commercial and residential lots (Eves, 2007; Nasar, 2003; Pendola & Gen, 2008; Rosenblatt et al., 2009; Yigitcanlar et al., 2005). These communities are aimed at socially diverse populations with a view of maintaining a set of community values (Aiello et al., 2010; Community Archives Inc Planned, n.d.; Eves, 2007; Halter, 1998; Nasar, 2003; Pendola & Gen, 2008; Rosenblatt et al., 2009; Yigitcanlar et al., 2005). It is through aspects such as the provision of open spaces, the reduction of car travel and increase in pedestrian traffic, and architectural designs that foster social interactions, that many social problems are reduced, a strong sense of community, sense of belonging and sense of place is developed, and personal and property safety is increased (Butterworth, 2000; Eves, 2007; Holahan & Wandersman, 1987; James et al., 2009; Nasar, 2003; Pendola & Gen, 2008; Rosenblatt et al., 2009; Schmitz, 1998; Warrick & Alexander, 1998).

Although not a new concept, the first modern planned community was at Greenbelt, Maryland, United States of America (U.S.A.) during the Great Depression of the 1930s (Community Archives Inc Planned, n.d.; Schmitz, 1998). It was not until 1962 that the next major planned community in Reston, Virginia, U.S.A. was developed (Community Archives Inc Planned, n.d.; Holahan & Wandersman, 1987; Schmitz, 1998). Since then, there have been 38 planned communities developed within the U.S.A with the concept spreading internationally to countries such as the United Kingdom, China, and Australia (Community Archives Inc Planned, n.d.).

Within Australia, planned communities are not as prevalent as in the U.S.A, however, there has been an increasing shift towards this style of residential development (Eves, 2007; Rosenblatt et al., 2009). The adoption of planned communities in Australia is purported to help create place identity, a strong sense of community, increase personal and property safety, reduce levels of vehicle traffic to assist pedestrian safety, and conserve non-renewable energy sources (Blair et al., 2003; Butterworth, 2000; Commonwealth of Australia, 1995; Eves, 2007; Rosenblatt et al., 2009; Yigitcanlar et al., 2005). With these issues in mind, developers market the planned community as the

'ideal' community, which creates certain expectations for potential residents (Eves, 2007; Halter, 1998; McManus, 1994; Wilson-Doenges, 2000). For example, marketers promote planned communities as offering a better way of life, which leads to increased social status, communalism and civility, which are reportedly appealing for those in search of social harmony (Gwyther, 2005; Halter, 1998; Rosenblatt et al., 2009; Schmitz, 1998; Wilson-Doenges, 2000).

Approaches to Examining Community

Town planners and theorists (Barnett, 1987; Calthorpe, 1991; Duany & Plater-Zyberk, 1992; Eves, 2007; Halter, 1998; Langdon, 1988; Morris, 1994; Rosenblatt et al., 2009; Wood et al., 2010; Yigitcanlar et al., 2005) claim that planned communities bring together geographical and relationship variables which instil a sense of community, a sense of belonging and a sense of place, thereby enhancing residents' quality of life (Calthorpe, 1991; Duany & Plater-Zyberk, 1992; Eves, 2007; Halter, 1998; Jiven & Larkham, 2003; Lew, 2007; Pendola & Gen, 2008; Pinet, 1988; Rosenblatt et al., 2009; White, 1985; Wood et al., 2010; Yigitcanlar et al., 2005). To date, most of this understanding has been based on urban planning theory (Aiello et al., 2010; Lew, 2007; Plas & Lewis, 1996), warranting investigation by environmental and community psychology as both subfields can apply psychological knowledge to address questions about the social and psychological effects/benefits of planned communities (Aiello et al., 2010; Cherniss & Deegan, 2000; Heller, Price, Reinharz, Riger, & Wandersman, 1984; Holahan & Wandersman, 1987; Plas & Lewis, 1996).

While urban planning theory addresses factors such as the structure, setting and formation of the community (Aiello et al., 2010; Lew, 2007; Lewicka, 2010; Plas & Lewis, 1996), environmental and community psychology focuses on the experience of community and the psychological nature of the environment-person interaction and fit, by examining an individual's attitudes, perception, feelings and understanding about community and their relationship to the community and other residents (Aiello et al., 2010; Cherniss & Deegan, 2000; Stokols & Shumaker, 1981; Uzzell & Rätzzel, 2009). Environmental psychology does this by adopting an individual perspective in examining environmental effects (Hodgetts et al., 2010; Uzzell & Rätzzel, 2009), while community psychology adopts a social intervention focus (Christens, 2010; Holahan & Wandersman, 1987; Trickett, 2009a, 2009b; Trickett & Schensul, 2009). Despite the differences in their approaches to examining community, these subfields of psychology

can work in partnership. For example, by joining the social intervention skills and models of community psychology with the methodological and conceptual concerns of environmental psychology, a broader understanding of the connection between the physical environment and the social community can be undertaken (Holahan & Wandersman, 1987).

Community and environmental psychology also share ecological and systems underpinnings (Holahan & Wandersman, 1987). The ecological environment can be explained by Bronfenbrenner's (1977) analysis of the ecology of human development (see Figure 1), in that it consists of the immediate settings in which the person participates, namely the micro-system, and various contexts, the meso-system, exo-system and macro-system which are nested around this setting (Greenfield, 2009; Holahan & Wandersman, 1987; Mannarini & Fedi, 2009).



Figure 1. Bronfenbrenner's analysis of the ecology of human development. From "A systems approach to the study of human behaviour", by W. Huitt, 2009, *Educational Psychology Interactive*, Valdosta, GA: Valdosta State University. Retrieved 27 August 2010 from <http://www.edpsycinteractive.org/materials/sysmdlo.html>. Copyright 2009 by Bill Huitt. Reprinted with permission.

The micro-system involves the relations between the individual and the immediate setting such as the residential environment. Meso-system refers to the interrelations among the major settings which contain the person such as interactions between the family and the school. The exo-system refers to the informal and formal social structures that encroach on the individual's immediate setting such as the neighbourhood environment. The macro-system reflects the general prototypes or overarching institutional patterns of the culture in which the micro-, meso-, and exo-system are concrete manifestations (Greenfield, 2009; Holahan & Wandersman, 1987). Environmental psychology encompasses environmental factors at the residential, neighbourhood, and urban levels which corresponds to Bronfenbrenner's (1977) micro-, meso-, exo-, and macro-systems. Community psychology complements this approach by encompassing the behavioural consequences of the physical setting at various social levels such as the group, organisational and social network rather than just the individual (Greenfield, 2009; Holahan & Wandersman, 1987; Mannarini & Fedi, 2009).

Both environmental and community psychology are underpinned by a systems oriented perspective in that the relationship between the parts of this ecological environment are dynamic, interactive and reciprocal (Holahan & Wandersman, 1987; Mannarini & Fedi, 2009). For example, mesosystem influences are shown in the reciprocal relationships between the residential, neighbourhood and urban levels.

In summary, definitions of community outline social and geographical aspects which can provide a basis on which to examine the composition of residential satisfaction. Therefore, obtaining a comprehensive understanding of the construct is enhanced. For example, Tonnies (1887, as cited in Allen, 1991) work provides a basis for understanding community; however, *Gemeinschaft* relationships only suggest one approach to addressing residential satisfaction. Therefore, other approaches such as environmental and community psychology, which examine social ties and social process to understand the effects of the physical environment on the behaviour and experience of individuals, can be utilised to examine other aspects of community such as sense of community, sense of belonging and sense of place and their impact on residential satisfaction.

Chapter 2

Literature Review

Aims of the Chapter

The aim of this chapter is to examine residential satisfaction and its relationship to sense of community, sense of belonging and sense of place. These constructs are founded on theoretical considerations and empirical research directed to understanding the relationship between people and their environment (Bonaiuto, Aiello, Perugini, Bonnes, & Ercolani, 1999). Research has indicated there is some connection among sense of community, sense of belonging and sense of place in that these concepts examine how residents perceive their community, promote well-being, enhance coping, develop support networks and promote community building, all of which can lead to residential satisfaction (Shumaker & Taylor, 1983). However, the empirical and theoretical links between them have not been approached in a systematic way. Therefore, the concept of residential satisfaction with its literature related factors – well-being and quality of life will be discussed in this chapter. Additionally, theories of satisfaction are categorised into two types, content and process, and their confused relationship with theories of motivation explored. Attempts to operationalise residential satisfaction will be presented by examining traditional models of residential satisfaction, the belief-affect and functional approach model; and contemporary models such as the availability and commitment approaches. Objective and subjective attributes influence residential satisfaction and these are categorised into social, physical and personal factors. Presentations of these factors are made.

As stated, this chapter reviews the concepts of sense of community, sense of belonging and sense of place in order to understand the dynamics of these relationships by investigating them concurrently. For each of these concepts information is presented on the theoretical models and instruments that have been developed in attempts to operationalise these concepts. Additionally, social, physical and personal factors such as community participation, crime rate and household income, all of which contribute to the development of these constructs will also be presented. Discussion is advanced on how these concepts contribute to the development of residential satisfaction.

Residential Satisfaction

Residential satisfaction is one's perception that the community meets personal goals and needs, and how content that person is with the environment and whether there is a feeling of community connectedness. It is a multi-dimensional construct that focuses on the social environment, such as belongingness and acceptance, and the physical environment, such as availability of community services and housing quality (Grillo et al., 2010; Heller et al., 1984; Hughey & Bardo, 1987; James et al., 2009; Sirgy & Cornwell, 2002). Therefore, residential satisfaction approaches take into account residents' views of the commercial, social and public services in the area; the physical environment; the opportunities available; and the accountability, effectiveness, efficiency and accessibility of local political decision makers (Puddifoot, 1994). Throughout the literature, satisfaction has been equated with well-being, and quality of life which are discussed below (Allen, 1991; Vreugdenhil & Rigby, 1987).

Well-being.

A person's well-being is dependent on the quality of relationships with others and on the community in which they live (Prilleltensky, 2005). Underlying factors that determine well-being are embedded in the individual and their social circumstances (Nelson & Prilleltensky, 2005; Prilleltensky, 2005). Therefore, there are three levels to well-being: individual, relational and community and societal levels (Cutrona, Russell, Hessling, Brown, & Murry, 2000; Nelson & Prilleltensky, 2005; Prilleltensky, 2005). The first, individual well-being, refers to many conditions such as freedom from threats and oppression, physical and mental health and access to material resources to meet daily needs (Nelson & Prilleltensky, 2005; Theodori, 2001). The second, relational well-being, refers to the positive and supportive relationships one has, as well as one's ability to participate freely in social, community, and political life (Nelson & Prilleltensky, 2005; Prilleltensky, 2005).

The third, community and societal well-being, refers to the acquisition of basic resources such as education, housing and employment (Nelson & Prilleltensky, 2005; Prilleltensky, 2005). The community context influences well-being in that ongoing life conditions that threaten a person's sense of control, mastery and self-esteem increase that person's vulnerability to depression and feelings of helplessness and hopelessness (Cutrona et al., 2000). Also influenced by the community context is a person's

personality and attitude. For example, Steele and Sherman (1999) found that individuals from more advantaged communities are more likely to carry out actions to further the goal of self-reliance such as job training or educational programmes; however, those from disadvantaged communities are less likely to further the goal of self-reliance as their environment provides little evidence that poverty can be avoided. The community context therefore, may moderate the effects of a range of personality traits and attitudes (Cutrona et al., 2000). These three values are interdependent (see Figure 2), that is, while each is unique they depend on each other and cannot exist in isolation (Nelson & Prilleltensky, 2005; Prilleltensky, 2005). If attention is exclusively on one value then other values that impact the well-being of the person are neglected (Prilleltensky, 2005).

Figure 2 removed for due to copyright

Figure 2. Values of holistic well-being.

From *Community psychology: In pursuit of liberation and well-being* (p.59), by G. Nelson, & I. Prilleltensky, 2005, New York: Palgrave. Copyright 2005 by Geoffrey Nelson and Isaac Prilleltensky. Reprinted with permission from Palgrave Macmillan.

A factor that affects well-being is sense of community in that it promotes health and buffers against psychological disruption. Davidson and Cotter (1991) examined the relationship between these constructs in 992 participants within three American communities. The focus was on subjective well-being which refers to individual happiness or satisfaction (Kennedy, Northcott, & Kinzel, 1977; Oishi, Schimmack, & Diener, 2001; Wright & Cropanzano, 2000). Subjective well-being consists of three characteristics: negative affects, positive affects and perceived efficacy (Davidson & Cotter, 1991; Kennedy et al., 1977; Oishi et al., 2001; Wright & Cropanzano, 2000). Individuals with high subjective well-being are typically cheerful, pleased, happy and

excited (positive affects); free of excessive worry, guilt, anger and sadness (negative affects); and believe they are capable of handling their lives (perceived efficacy) (Davidson & Cotter, 1991; Kennedy et al., 1977; Oishi et al., 2001; Wright & Cropanzano, 2000). It is the absence of negative qualities and the presence of positive qualities that are influential in promoting healthy well-being (Davidson & Cotter, 1991; Kennedy et al., 1977; Oishi et al., 2001; Wright & Cropanzano, 2000). The information was gathered via the Sense of Community Scale (Davidson & Cotter, 1986) and a subjective well-being scale with questions relating to coping (perceived efficacy), happiness (positive affects) and worrying (negative affects). A significant positive relationship between sense of community and subjective well-being was found, indicating that people with high levels of sense of community experienced high subjective well-being.

Quality of life.

Like well-being, quality of life is associated with satisfaction (Bramston, Pretty, & Chipuer, 2002). There are three general approaches to quality of life (Allen, 1991). First, the individualist approach focuses on the accomplishments of a person with regard to their desires and expectations (Allen, 1991). This approach pays little attention to external forces or the environment as influencing one's quality of life (Allen, 1991). Unlike the individualist approach, the second, the transcendental approach focuses on the external environment (Allen, 1991). As order and maintenance of the larger community occurs, then a person's quality of life is achieved. However, this approach ignores individual freedom and replaces individualism with the greater good of the community and society (Allen, 1991). A third approach combines the individualistic and transcendental, suggesting that one area (individual or community) does not take precedence over the other; rather the two are involved in ongoing negotiation and interchange, with each area being influenced by and influencing the other (Allen, 1991).

Therefore, quality of life involves evaluating various life experiences 'relating to the individual and the environment' around them (Allen, 1991, p. 333). These life experiences are in the domains of satisfaction (see Figure 3): personal, neighbourhood and community in which each is influenced by a number of attributes (Bramston et al., 2002). This is a bottom up approach suggesting that individuals' satisfaction with each domain corresponds to their quality of life. Each domain is not exclusive as each influences and is influenced by the other (Allen, 1991).

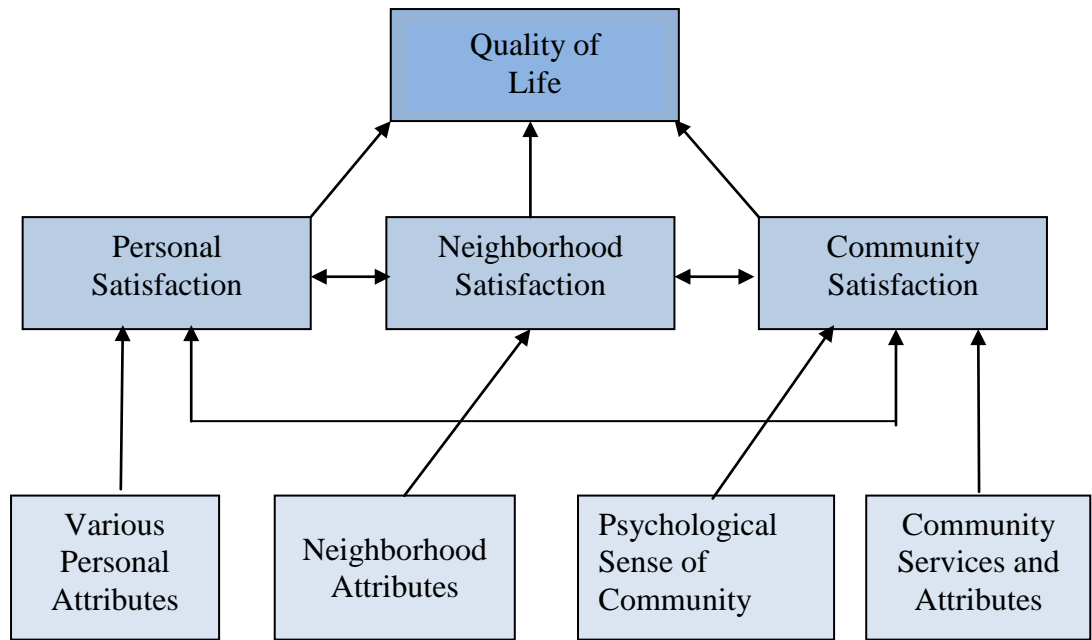


Figure 3. Primary domains and specific attributes contributing to quality of life.

From *Benefits of leisure* (p.336), by L. R. Allen, 1991, State College, Pennsylvania: Venture Publishing, Inc. Copyright 1991 by Venture Publishing, Inc. Reprinted with permission.

These various domains and attributes contributing to quality of life have been demonstrated in research that found quality of life is influenced by a variety of physical and social domains, e.g., family, employment, residence, neighbourhood, etc. (Marans & Rodgers, 1975). Further support for this contention has been demonstrated by Hughey and Bardo (1987) who found two factors representing community satisfaction that relate to quality of life: perceived responsibility for the community and feelings of belonging. This demonstrates that social relations in community satisfaction and quality of life relationships are important. While this study focused on internal psychological factors, environmental components were examined by Potter and Cantarero (2006) who explored four domains: i) cultural and social life aspects such as neighbours, family relations and a sense of community; ii) physical environment such as housing conditions and the neighbourhood; iii) public services accessible to residents such as fire and police protection, transportation and recreation; and iv) economic circumstances such as employment and retail conditions. Social and cultural aspects were found to be the most significant factor; however, housing concern and services

were also influential. This shows that while internal psychological aspects are the main influence on quality of life, environmental components are also an influence.

Although satisfaction is equated with well-being and quality of life in general (Allen, 1991; Vreugdenhil & Rigby, 1987), satisfaction centres on the belief that it measures the difference between a person's actual and desired situation (Grzeskowiak, Sirgy, Lee, & Clairborne, 2006; Lu, 1999). Satisfaction has been approached in various ways by different disciplines such as planning, sociology, psychology and geography; however, despite these differing approaches, the theoretical underpinnings have been similar (Bramston et al., 2002; Lu, 1999; Sirgy, Rahtz, Cicic, & Underwood, 2000). The following section discusses some of the major theories of satisfaction.

Theories of satisfaction.

An attempt to classify satisfaction theories organises them into two categories: content and process theories (Allen, 1991; Thierry & Koopman-Iwena, 1984). Content theories identify specific motives and needs conducive to satisfaction and include Need for Achievement Theory (McClelland, 1951, 1961), Hierarchy of Needs (Maslow, 1954), Internal-External Locus of Control (Rotter, 1966), Cognitive Evaluation Theory (Deci, 1975) and Two Factor Theory (Herzberg, Mausner, & Snyderman, 1959). Process theories on the other hand, concentrate on dynamic thought processes and how they produce certain behaviours and attitudes and include Drive Theory (Hull, 1943, 1951), Equity Theory (Adams, 1963, 1965) and Expectancy Theory (Vroom, 1964). The foregoing theories, however, are also recognised as motivation theories in which satisfaction plays a role in one's level of motivation, such as the extent to which a particular need has been met and as such, is not a satisfaction theory per se (Thierry & Koopman-Iwena, 1984).

The confusion in categorising the above theories as satisfaction theories, rather than motivation theories, is demonstrated in Maslow's Hierarchy of Needs for example, in which satisfaction decides whether a higher level of need in the hierarchy will evoke behaviour. Another example is Equity Theory, which pays attention to behaviour caused by dissatisfaction (dissonance). Despite the arguments proposed the following theories pertain to satisfaction: Need-Fulfillment Theory (Vroom, 1964), Discrepancy Theory (Locke, 1969), Event-Agent Theory (Schneider & Locke, 1971), Social Comparison Theory (Festinger, 1950, 1954) and Facet-Satisfaction Model (Lawler, 1973). While not

an exhaustive list, these are the most frequently mentioned satisfaction theories across decades of research (Chapman & Lombard, 2006; Elsinga & Hoekstra, 2005; Fluery-Bahi et al., 2008; Grillo et al., 2010; James et al., 2009; Jorgensen, Hitchmough, & Dunnett, 2007).

The Need-Fulfilment theory refers to satisfaction occurring as a result of the level of a component or outcome a person feels they are receiving (Vroom, 1964). According to this theory, all individuals have different needs, which determine their motivation. If these needs are fulfilled, then greater levels of satisfaction occur (Galster & Hesser, 1981). That is, satisfaction is the result of the degree to which the environment satisfies a person's need. There are two models that utilise the need-fulfilment framework: the 'subtractive' and the 'multiplicative' models (Allen, 1991). According to the subtractive model, a person's level of satisfaction is the result of the discrepancy between their needs and the extent to which the environment satisfies those needs. That is, the more discrepancy between the two then the lower the satisfaction level and vice versa. The multiplicative model calculates the product of the individual's needs and extent to which the environment satisfies those needs. The total of all the needs illustrates the individual's level of satisfaction. While there is support for these models, they are limited in applicability to individuals with high self esteem. Therefore, the need-fulfilment framework does not provide a complete framework to understanding satisfaction (Allen, 1991; Galster & Hesser, 1981; Korman, 1971).

Discrepancy theory refers to the difference between an expected outcome level and the actual outcome a person receives (Locke, 1969). Dissatisfaction occurs when the actual outcome level is lower than the expected outcome level; however, when discrepancies between expected and real outcomes are reduced then satisfaction is achieved (Allen, 1991; Berry, 1997; Thierry & Koopman-Iwena, 1984). The Event-Agent theory (Schneider & Locke, 1971) refers to satisfaction as being the result of the interaction between an event (relating to the things that happen) and an agent (relating to the cause of the event) (Thierry & Koopman-Iwena, 1984; Tietjen & Myers, 1998).

While the above theories are based on the notion that individuals balance their outcomes against what they are striving for, and this analysis is based on their desires and opinions, the Social Comparison theory maintains that this balancing is done with regard to the viewpoints and characteristics of one's group. A person's satisfaction level is based on the interests and desires of the group they look to for guidance, and their

perception about how they are doing in relation to that reference group (Festinger, 1950, 1954). Limitations of this theory lie in two directions: its applicability across different individuals such as those whose views are largely derived from group influences, compared to those who are independent in nature and have their own opinion; and its lack of applicability across individuals with similar characteristics but have different reference groups.

According to the Facet-Satisfaction Model (Lawler, 1973) satisfaction occurs only if actual rewards are equal to perceived equitable rewards. That is, if actual rewards are more or less than perceived equitable rewards, discomfort and guilt occurs. Discomfort results if a person knows they are receiving more or less than they deserve. A criticism of this theory is its emphasis on perception, in that it reinforces the importance of perception of reality as opposed to reality itself.

Despite the various theories, they share common elements: they measure the difference between community conditions (Galster & Hesser, 1981; Grzeskowiak et al., 2006; Kaplan, 1985; Lu, 1999), and conclude that a person's satisfaction occurs when there is an absence, or at least a minimal number, of complaints and a high degree of congruence between actual and desired situations. However, incongruence between actual and desired conditions leads to dissatisfaction (Grzeskowiak et al., 2006). Another commonality is the recognition of the complex nature and interdependence of the numerous factors that affect residential satisfaction (Kaplan, 1985). Within the literature there is little consensus on the most appropriate theory to address and explain the cause of satisfaction (Allen, 1991; Thierry & Koopman-Iwena, 1984). As a result various theoretical frameworks and models have been developed.

Models of residential satisfaction.

There have been many attempts to develop a theoretical model of community satisfaction (Allen, 1991; Amerigo & Aragones, 1997). However, most have been criticised for lacking a theoretical basis, while others have examined the characteristics of the environment (physical and social) and the user (cognitive and behavioural) but have not organised these variables into a model to examine the relationships among them (Adriaanse, 2007; Allen, 1991; Amerigo & Aragones, 1997; Filkins et al., 2000).

Traditionally, community satisfaction research has utilised either the belief-affect model (Allport, 1935; Fishbein & Ajzen, 1975) or the functional approach model

(Katz, 1960). The belief-affect model indicates that when people develop an overall attitude about an object, they combine their set of beliefs about that object (Allport, 1935; Fishbein & Ajzen, 1975). The functional approach model (Katz, 1960) points to attitudes as being expressions of one's values, and in terms of community satisfaction refers to an expression of one's identification with their neighbourhood. These classic models, however, have been challenged in that others (Tversky & Kahneman, 1974; Zajonc, 1980) have queried the extent to which people make judgements that involve such complete or careful analyses of information. It has been shown (Moreland & Zajonc, 1977; Wilson, 1979) that people evaluate an object quicker than they evaluate factual beliefs, and processing of these occurs in separate sections of the cognitive system (Miller, Tsemberis, Malia, & Grega, 1980). Additionally, when assessing the predictors of satisfaction within the belief-affect model, a variety of neighbourhood aspects should be examined or else the aspects determined to be important to overall satisfaction, depends more on the researchers' selection criteria, rather than the respondents' beliefs (Miller et al., 1980). Despite criticisms of the belief-affect model, Miller et al. (1980) examined this model with two contemporary satisfaction models, the availability approach and the commitment approach to determine the most appropriate model of community satisfaction.

The availability approach attempts to counter the criticisms of the belief-affect model by proposing that satisfaction is based on general beliefs about the community as well as evaluations of the neighbourhood's actual qualities (Miller et al., 1980). A person's beliefs about the community can influence the interpretation of available objective information. The difference between the availability approach and the belief-affect approach are the criteria by which the elements of a judgement are chosen (Miller et al., 1980). With the belief-affect approach, a person samples a broad range of qualities of the object to maximise accuracy while with the availability approach judgements are chosen for their availability in memory rather than for their ability to provide an accurate model of the full range of neighbourhood qualities (Miller et al., 1980).

The commitment approach determines that one's satisfaction with a community depends on their financial or emotional ties to it (Miller et al., 1980). The more emotional or financial ties, such as through community involvement and homeownership, a person has to the community, the higher their community satisfaction (Miller et al., 1980). A person's satisfaction with community services and facilities also

increases their commitment to that community. This model indicates that processes operate differently than the other two models propose (Miller et al., 1980). Rather than indicating that people make assessment depending on the degree of their involvement in a community, it indicates that assessments are also made via one's satisfaction with elements of the community (Miller et al., 1980).

Based on the finding by Miller et al. (1980) the different models are not equally useful to predict satisfaction. While the belief-affect approach accounted for variance in residential satisfaction, there were difficulties operationalising this approach. For example, it was difficult to indicate which neighbourhood qualities create satisfaction as only a single factor solution was generated when factor analysis was conducted. However, this was evidence that a single dimension characterises evaluative thought about communities (Miller et al., 1980). In regards to the commitment approach, the variables were not strongly related to residential satisfaction (Miller et al., 1980), a weakness that is not reflected in the plethora of research conducted in this area. The availability approach, like the belief-affect approach, had variables that correlated significantly with satisfaction, and the variance within this model was identified as being comparable with the belief-affect model (Miller et al., 1980). There was a substantive overlap between these two approaches; however, the availability approach made a significant independent contribution to explaining variance in satisfaction and is more effectively operationalised than the belief-affect approach (Miller et al., 1980). A disadvantage of the availability approach, however, is that there is no empirical rule for selecting predictors of satisfaction (Miller et al., 1980). As a result of Miller et al's., (1980) research, it is suggested that there is not one dominant approach to replace the others therefore, researchers need to recognise that there are several approaches that can assist to understand community satisfaction (Miller et al., 1980).

Since Miller et al's. (1980) research, other models have been developed to help explain community satisfaction. Amerigo and Aragonés (1990) attempted to develop a theoretical model by examining how a person interacts with their environment (see Figure 4). This model demonstrates the elements composed by a resident to form residential satisfaction, and shows residential satisfaction to be a precursor to satisfaction with life in general. Objective attributes of the environment such as access to local services and housing quality, contribute to residential satisfaction via three potential pathways (Amerigo & Aragonés, 1990). The first pathway shows a link between objective attributes of residential environment and residential satisfaction

which indicate its direct role in forming residential satisfaction. The second pathway shows that objective attributes become subjective after they have been evaluated by the person which gives rise to a degree of satisfaction (Amerigo & Aragonés, 1997). Hence, the subjective attributes (i.e., one's perception of public safety or perception of access to amenities) are influenced by personal characteristics such as a person's socio-demographic background, age and income level and the perception of their real and ideal residential environment (Amerigo & Aragonés, 1997). If a person experiences residential satisfaction they then work at maintaining or increasing congruence with that environment (Amerigo & Aragonés, 1997). The third pathway shows the formation of residential satisfaction when objective attributes are filtered through personal characteristics of the individual. The degree to which the environment meets the needs associated with these personal characteristics leads to the direct calculation of residential satisfaction.

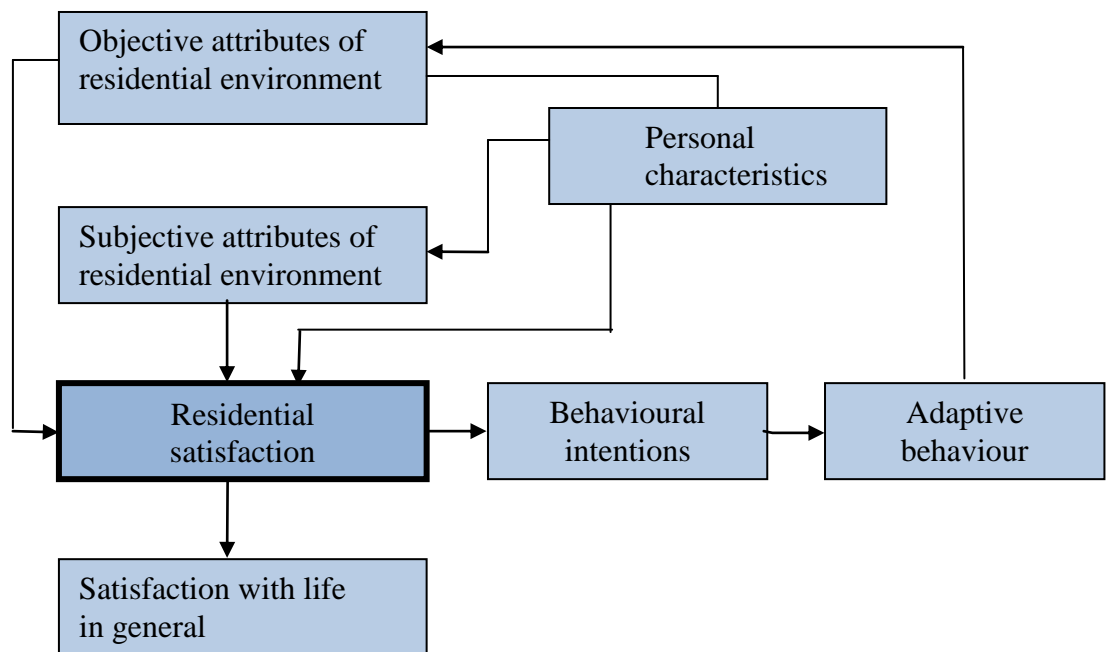


Figure 4. A systemic model of residential satisfaction.

From “A theoretical and methodological approach to the study of residential satisfaction”, by M. Amerigo and J. I. Aragonés, 1997, *Journal of Environmental Psychology*, 17, p.48. Copyright 1997 by Academic Press Limited. Reprinted with permission from Elsevier.

As presented in the model above, the perceived outcome of residential satisfaction can affect a person's behavioural intentions, which in turn affect their behaviour, and can lead to alteration of the objective attributes of the residential environment (Amerigo & Aragonés, 1990). For example, where the level of perceived safety could be influenced by participation in community action a person may become involved in a neighbourhood watch programme. Adaptive behaviour could also result in mobility and a change of residential location depending on the level of residential satisfaction felt (Amerigo & Aragonés, 1990, 1997; James et al., 2009; Lu, 1998, 1999).

As indicated earlier, one of the criticisms of many community satisfaction models is that the relationship amongst the identified variables in the model have not been examined (Allen, 1991; Amerigo & Aragonés, 1997). One study to do this, however, was by Grzeskowiak, Sirgy, and Widgery (2003) who focused on the determinants of community satisfaction and assessed the interrelationships among the determinants. They developed a comprehensive model (see Figure 5) based on factors that are continually found in the research to be key factors of residential satisfaction.

This model shows that satisfaction with community conditions such as crime and safety, job opportunities and aesthetic appeal; and satisfaction with community services, such as rescue services, libraries, shopping centres and religious services, are key determinants of satisfaction (Grzeskowiak et al., 2003). Community members compare their evaluation of community conditions with their evaluations of community services. For example, satisfaction with the crime rate in one's community depends on their evaluation of the service police are providing. If the crime rate is low in their community, community members make a causal link and determine that the police are performing a satisfactory service (Grzeskowiak et al., 2003). Therefore, a positive evaluation of a community condition leads to a positive evaluation of the community service responsible for that condition (Grzeskowiak et al., 2003).

Within this model is shown that community satisfaction leads to community commitment, that is, their sense of belonging and loyalty to the community (Grzeskowiak et al., 2003). The greater one's satisfaction is with the community, the greater their community commitment (Grzeskowiak et al., 2003). Other variables related to community satisfaction include power in influencing local institutions, confidence in local institutions and social ties (Grzeskowiak et al., 2003). Power in influencing local institutions is related to community satisfaction in that residents who

believe they are able to influence local institutions are more satisfied as they consider they have a sense of control over their lives (Grzeskowiak et al., 2003). Confidence in local institutions refers to the extent that residents feel they can trust these institutions to provide reliable services for many years. The more confidence one has with local institutions, the greater their community satisfaction (Grzeskowiak et al., 2003). Social ties are a strong indicator for community satisfaction. The more social ties one has in the community, the more committed they are to that community and hence, the more satisfied they are with that community (Grzeskowiak et al., 2003).

Other constructs contained in this model are: neighbourhood satisfaction, satisfaction with neighbourhood conditions and housing satisfaction (Grzeskowiak et al., 2003). In regard to neighbourhood satisfaction, the neighbourhood is the residents' most proximal, psychological representation of their community. Any feeling of satisfaction with the neighbourhood influences a person's perception of and evaluations toward, community services, condition of the community and toward the larger community (Grzeskowiak et al., 2003). That is, the more satisfaction there is with the neighbourhood, the more satisfaction a resident has with their community overall. Concerning satisfaction with neighbourhood conditions, this refers to the feeling residents have regarding their neighbourhood conditions such as their neighbours, neighbours behaviour in the community and crime and safety (Grzeskowiak et al., 2003). As these neighbourhood conditions are also community conditions, residents' feelings towards these conditions in their neighbourhood also influence their feelings about these conditions in the community (Grzeskowiak et al., 2003). Finally, housing satisfaction refers to the degree that a person's home meets their needs, and as their home is part of the neighbourhood these feelings extend to the neighbourhood and vice versa (Grzeskowiak et al., 2003).

Also within the model are constructs related to satisfaction with social, work and financial life (Grzeskowiak et al., 2003). If a person considers they are happy socially, they determine that they have strong social ties with that community, leading to the development of community satisfaction. Satisfaction with social life is also influenced by satisfaction with family life (Grzeskowiak et al., 2003). Issues relating to work and financial life are part of family life in that problems related to these areas can cause dissatisfaction with family life. Therefore, the greater a person's satisfaction with their financial and work life, the greater their satisfaction with family life (Grzeskowiak et al., 2003).

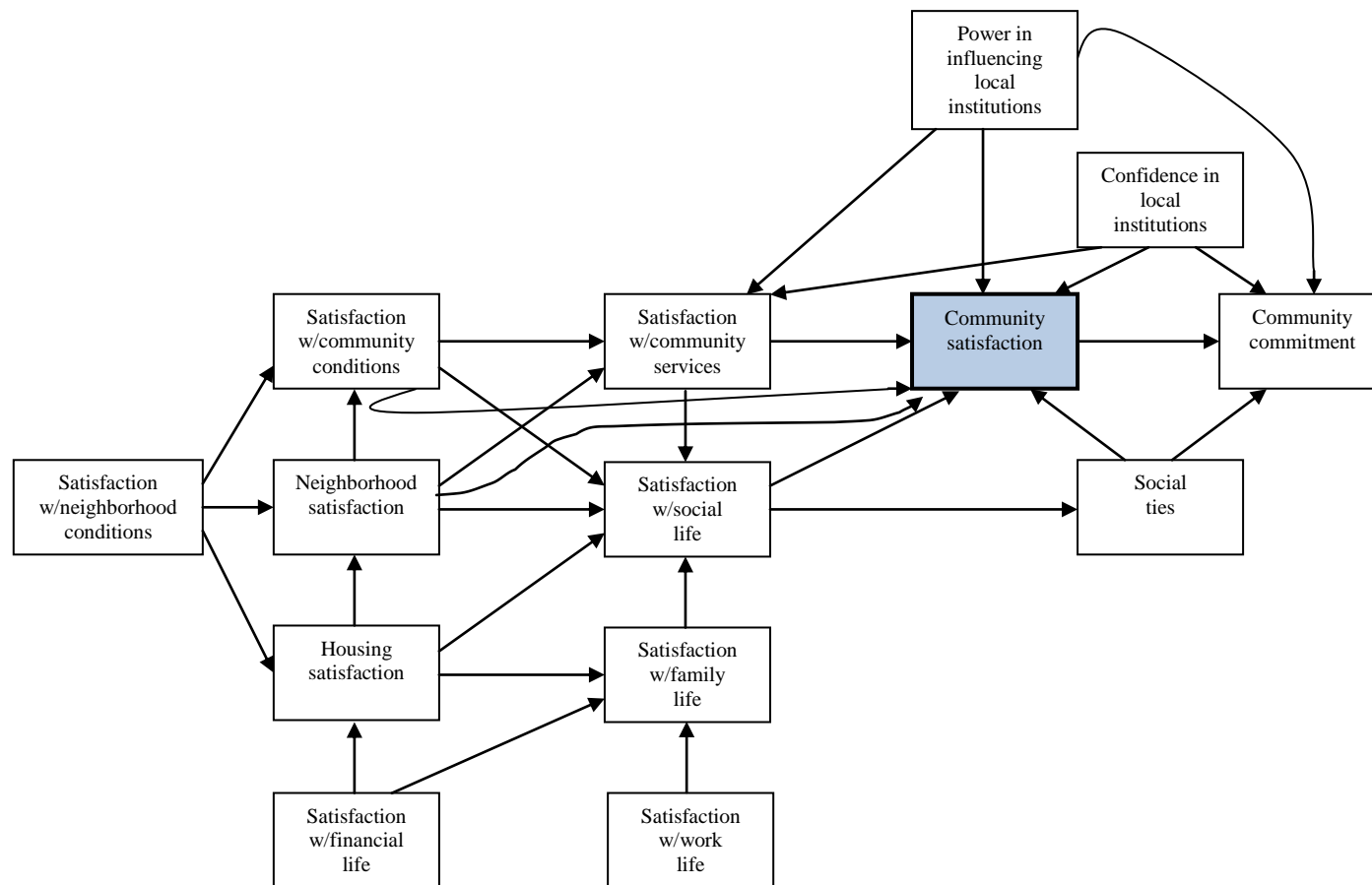


Figure 5. Determinants and consequences of satisfaction with community services.

From “Residents’ satisfaction with community services: Predictors and outcomes”, by S. Grzeskowiak, M. Sirgy and R. Widgery, 2003, *The Journal of Regional Analysis and Policy*, 33, p.16. Copyright 2006 by Mid-Continent Regional Science Association. Reprinted with permission.

Subjective/objective attributes.

Research has determined that objective and subjective attributes explain variations in residential satisfaction (Adriaanse, 2007; Amerigo & Aragonés, 1997; Braubach, 2007; Hughey & Bardo, 1984; James, 2008; Young et al., 2004). Objective attributes refer to the configuration of the community such as geographical location and amount of open public space (Adriaanse, 2007; Amerigo & Aragonés, 1997; Carro, Valera, & Vidal, 2010; James, 2008; Young et al., 2004); while subjective attributes are comprised of an individual's personality and aspirations and desires (Amerigo & Aragonés, 1997; Carro et al., 2010; James, 2008; Lu, 1998, 1999; Young et al., 2004). Objective characteristics of the community alone do not determine satisfaction, it also involves the subjective interpretation of those objective characteristics (Adriaanse, 2007; Allen, 1991; Bardo, 1976; Brown et al., 2005; Carro et al., 2010; Galster & Hesser, 1981; Hourihan, 1984; Hughey & Bardo, 1984; Lu, 1998, 1999; Marans & Rodgers, 1975; Rojek, Clemente, & Summers, 1975; Young et al., 2004). One of the first studies to recognise the importance of both objective and subjective characteristics was the work by Wasserman (1982) which therefore, was considered the way to assess general community satisfaction. Prior to Wasserman's (1982) study, single item global measures were utilised to assess community satisfaction. However, these were acknowledged to be inadequate as they did not take into account the complexity of satisfaction, in that it is not merely a yes/no question, and did not recognise that community services, facilities and opportunities also contribute to community satisfaction (Allen, 1991; Bardo & Bardo, 1983; Wasserman, 1982).

The evaluation process begins with objective attributes but decisions are made according to a subjective assessment of the situation (Braubach, 2007; Marans & Rodgers, 1975; Potter & Cantarero, 2006; Rojek et al., 1975). This involves taking into account how a place is perceived, its attributes and the standard of comparison against which it is judged (e.g., personal expectations, needs and reference group(s)). For example, a person compares their aspirations and desires with a reference group, usually one of which they aspire to be a member of (Bruin & Cook, 1997). If an individual deems their aspirations to be closely related to their comparison group, then their level of residential satisfaction is higher as their aspiration and desires are deemed to be met. A person's perception of the attribute may also be influenced by personal characteristics such as social status, personality and experience (Brown et al., 2005; Marans &

Rodgers, 1975; Potter & Cantarero, 2006; Rojek et al., 1975). For example, personality is seen to act as a 'filter' in which environmental and social characteristics are examined and then assembled to form residential satisfaction (Amerigo & Aragonés, 1997). These characteristics can be filtered differently by each community member, and their level of residential satisfaction is based on their perception, rather than the actual configuration of these residential conditions (Lu, 1999). In summary, the perception of the degree to which a person's aspirations and desires are met by the community influences their level of residential satisfaction (Lu, 1998, 1999).

A longitudinal study by Brown et al. (2005) examined the effects of rapid boom growth on residential satisfaction within a community and established the role that subjective attributes played. Anticipatory responses and subjective evaluations relating to community change were critical determinants of individual and collective responses during boom, bust and recovery periods. As the community changed so did the residents' subjective relationships to it (Brown et al., 2005). For example, some residents were "appalled" at the changes that took place in their community due to the boom period; however, most had reconciled their feelings with the changes and their levels of satisfaction returned to or exceeded pre-boom baseline levels (Brown et al., 2005, p. 46). Residents subjectively adjusted to the changes within the community due to their attachment to the place, with longer term residents maintaining the highest levels of satisfaction over the course of the changes (Brown et al., 2005).

Factors impacting on residential satisfaction.

The objective and subjective dimensions influencing residential satisfaction include predictive factors which are categorised into social, physical and personal factors (Adriaanse, 2007; Braubach, 2007; Carro et al., 2010; Young et al., 2004). Social factors include aspects such as belongingness, quality of community life and community participation (Amerigo & Aragonés, 1997; Braubach, 2007; Bruin & Cook, 1997; Potter & Cantarero, 2006; Puddifoot, 1994; Young et al., 2004). Physical factors include aspects such as community layout and design, crime rate, access to services and housing quality (Bonnes, Bonaiuto, & Ercolani, 1991; Braubach, 2007; da Luz Reis & Lay, 2010; Hourihan, 1984; James, 2007; James et al., 2009; Potter & Cantarero, 2006; Young et al., 2004). Personal factors refer to a person's age, gender, race, education level, tenure (i.e., renting or home owner), length of residence and household income (Bonaiuto et al., 1999; Chapman & Lombard, 2006; Filkins et al., 2000; Lu, 1999).

Social factors.

The social environment consists of the social interactions, relationships and social activities in which a person participates (Bruin & Cook, 1997; Galster & Hesser, 1981; Miller et al., 1980; Sirgy & Cornwell, 2002; Wasserman, 1982). Some researchers (Amerigo & Aragonés, 1997; Fried & Gleicher, 1972) claim that social relationships are more important to residential satisfaction than the physical environment. Goudy (1977) was one of the first researchers to consider that social factors were important in determining residential satisfaction (Potter & Cantarero, 2006).

Previous research has suggested that residents who feel they belong to a community identify with that community (Mellor et al., 2008; Puddifoot, 1994) and as a result, are generally more satisfied with their social relationships and physical surrounding, which in turn leads to higher levels of residential satisfaction (Bardo, 1976; Bardo & Bardo, 1983; Bardo & Hughey, 1984; Young et al., 2004). By feeling as if one belongs, one becomes more attached to a community (Grillo et al., 2010; Hughey & Bardo, 1987; Wasserman, 1982). The level of attachment one feels for their community also influences their level of residential satisfaction (Aiello et al., 2010). This attachment is described as a bond between a person and their social and physical environment (Bonaiuto et al., 1999; Grillo et al., 2010; Mesch & Manor, 1998; Wasserman, 1982). An individual develops an attachment to their community through their social (i.e., relationships), economic (i.e., homeownership) and temporal (i.e. length of residence) investments within the community (Aiello et al., 2010; Bonaiuto et al., 1999; Grillo et al., 2010; James et al., 2009; Mesch & Manor, 1998; Unger & Wandersman, 1985; Wasserman, 1982). At this time, only the social investments will be examined, with the economic and temporal investments being addressed in the personal characteristic section of the chapter. Social relationships include family, neighbours and friends. Attachment to the community depends on the amount invested in these relationships. The more investment and attachment one has, the higher the level of residential satisfaction (Aiello et al., 2010).

This investment and attachment can be seen in that strong social networks within a community increase a person's level of satisfaction as they provide support and social interaction and can compensate when environmental conditions are poor (Aiello et al., 2010; Amerigo & Aragonés, 1997; Brown et al., 2005; Bruin & Cook, 1997; Galster &

Hesser, 1981; Grillo et al., 2010; Hourihan, 1984; Marans & Rodgers, 1975; McCrea, Stimson, & Western, 2005; Miller et al., 1980; Potter & Cantarero, 2006; Russ-Eft, 1978; Unger & Wandersman, 1985). For example, Filkins et al. (2000) examined social/spiritual satisfaction which refers to social ties such as local friendships and kin that foster strong community sentiments. It was found that social/spiritual attributes strongly influenced community satisfaction in that the more satisfied a resident was with this area in their life, the higher their community satisfaction (Filkins et al., 2000).

Generally, the more friends and family in the community one has, the higher their level of residential satisfaction (Allen, 1991). However, this is only the case if these support networks are strong and not maladaptive. In other words, knowing a large number of people in the community does not necessarily equate with strong social support, showing that strong social ties is the stronger predictor of residential satisfaction. On a related note, it has been found that people are more satisfied with their community if it is seen to be supportive, trusting and friendly (Filkins et al., 2000; Hourihan, 1984; Hughey & Bardo, 1984). In the study by Filkins et al. (2000) these aspects and the social/spiritual areas mentioned above were the strongest predictors of residential satisfaction.

A positive social environment not only consists of social ties/interactions with family and friends in the community but also the level of one's involvement in their community (Amerigo & Aragonés, 1997; Fried, 1984; Grillo et al., 2010; Unger & Wandersman, 1985; Wasserman, 1982). Belonging to a voluntary association increase one's ties to the community (Wasserman, 1982). The interactions provided by being involved in one's community increase the perception of neighbourhood quality, which in turn creates residential satisfaction (Amerigo & Aragonés, 1997; James et al., 2009; Wasserman, 1982). It has been found that one's involvement in their community is dependent on their perception of the level of safety within the community in that, the safer one feels within their community the more open they are to social interaction (James et al., 2009; Marans & Rodgers, 1975; Wasserman, 1982). Issues of safety will be discussed in more detail in the next section; however, this does show the link between the physical and social factors in that both play a role in developing residential satisfaction.

Physical factors.

Fear of crime and feelings of personal safety are predictors of residential satisfaction, as are variables perceived to be associated with crime, such as the presence of graffiti in the community and loitering (Adams, 1992; Adriaanse, 2007; Braubach, 2007; Bruin & Cook, 1997; Carro et al., 2010; Chapman & Lombard, 2006; Hur & Morrow-Jones, 2008; James et al., 2009; McCrea et al., 2005; Mesch & Manor, 1998; Mulvey, 2002; Potter & Cantarero, 2006; Uzzell et al., 2002). If residents perceive their community as unsafe they are less likely to be satisfied, which can result in high residential mobility out of the area (Diaz-Serrano & Stoyanova, 2010; Grillo et al., 2010; James et al., 2009). This perception of presence of crime in a community and how it impacts on residential satisfaction was examined by Chapman and Lombard (2006). Results indicated that less than 10% of their sample believed crime existed in their community despite crime rate statistics showing higher occurrences of criminal activity in the community (Chapman & Lombard, 2006). This perception of low crime in the community resulted in high levels of residential satisfaction. Therefore, while the objective statistics present the actual representation of a community, it is the subjective experience that has a stronger influence on residential satisfaction.

Satisfaction with community services (i.e., government services such as emergency services; business services such as shopping centres; and non-profit services such as religious services) is also related to community satisfaction (Allen, 1991; Grzeskowiak et al., 2003; Marans & Rodgers, 1975; Perez, Fernandez-Mayoralas, Rivera, & Abuin, 2001; Potter & Cantarero, 2006; Rojek et al., 1975; Sirgy & Cornwell, 2002; Uzzell et al., 2002; Wasserman, 1982). For example, Filkins et al. (2000) examined general community attributes such as schools, police protection and local government services to determine their impact on residential satisfaction. It was found that the more satisfied a resident was with community services, community satisfaction was strongly influenced. These results were also replicated in a study by McCrea, Stimson, and Western (2005) in which satisfaction with community services was also found to be an important predictor of satisfaction.

Community layout and design include aspects such as an adequate number of public open spaces, close travelling distance to services and amenities, building aesthetic pleasantness and minimal high density housing (Adriaanse, 2007; Bonaiuto et al., 1999; Bonnes et al., 1991; Braubach, 2007; Chapman & Lombard, 2006; da Luz

Reis & Lay, 2010; Perez et al., 2001; Russ-Eft, 1978; Uzzell et al., 2002). It has been found that these aspects increase a person's attachment to the community which in turn increases one's satisfaction with the community (Adriaanse, 2007; Bonaiuto et al., 1999; Bonnes et al., 1991; Braubach, 2007; Chapman & Lombard, 2006; da Luz Reis & Lay, 2010; Perez et al., 2001; Russ-Eft, 1978; Uzzell et al., 2002). In turn, excessive and repetitive noise from overcrowding in mass high density housing complexes and a lack of parks and ovals for example, reduces one's attachment to their community and decreases residential satisfaction (Bonaiuto et al., 1999; Bonnes et al., 1991; Braubach, 2007; Chapman & Lombard, 2006; da Luz Reis & Lay, 2010; Hourihan, 1984; James et al., 2009; Perez et al., 2001; Uzzell et al., 2002). As a result, the level of attachment one feels for their community influences their level of residential satisfaction in that the more attached a person is to a community, the higher their level of satisfaction.

Related to aesthetic pleasantness, community satisfaction has been found to be determined by the neatness and cleanliness of the community in that the more aesthetically pleasing an area, the higher the level of residential satisfaction (Adriaanse, 2007; Aiello et al., 2010; da Luz Reis & Lay, 2010; Grzeskowiak et al., 2006; Hourihan, 1984; Hughey & Bardo, 1984; James et al., 2009; Perez et al., 2001; Uzzell et al., 2002). A study by Hourihan (1984) indicated that residents in middle and upper classes pay more attention to cleanliness and neatness and as a result, experience high levels of residential satisfaction; however, it was also found that longer term residents of lower socio-economic status ignored the clutter and also experienced high levels of community satisfaction (Hourihan, 1984). This is attributed to these residents having strong ties in the community and hence an increased level of attachment. Therefore, this result indicates that while neatness and cleanliness play a role in residential satisfaction, attachment is a stronger contributor to satisfaction.

Another physical dimension is economic satisfaction which refers to factors such as job security, employment opportunities and future financial security as determinants of community satisfaction (Bonaiuto et al., 1999; Potter & Cantarero, 2006; Sirgy & Cornwell, 2002). If within a community there are vast opportunities for an individual to be employed, their level of satisfaction increases as they feel more financially secure. As a result, this has the added benefit of low residential mobility occurring as people do not leave the community to seek employment (Diaz-Serrano & Stoyanova, 2010; Grillo et al., 2010). This then creates the opportunity for residents to become more attached to the community (Diaz-Serrano & Stoyanova, 2010; Grillo et al., 2010).

Personal factors.

The personal factor attachment determines residential satisfaction. An individual can develop attachments to their community through their economic (i.e., home ownership) and temporal (i.e., length of residence) investments within the community (Aiello et al., 2010; Bonaiuto et al., 1999; James et al., 2009; Mesch & Manor, 1998; Unger & Wandersman, 1985). Concerning economic investments, homeowners experience more attachment to their community, as they tend to be more financially secure resulting in less residential mobility out of the area. Attachment to the community develops as the likelihood of social involvement and the development of relationships with neighbours increases, resulting in enhanced residential satisfaction (Elsinga & Hoekstra, 2005; James et al., 2009; Lu, 1998; Mesch & Manor, 1998). Regarding temporal investments, the longer a person lives in a community the stronger their attachment to that community usually due to community involvement and extensive social networks (Brown et al., 2005; Filkins et al., 2000; Fluery-Bahi et al., 2008). This in turn results in higher levels of residential satisfaction (Bonaiuto et al., 1999; Fluery-Bahi et al., 2008). Differences between long term residents and new arrivals is the result of different needs, in that new residents are concerned more with physical issues such as housing conditions while long term residents are more concerned with community improvement (Potter & Cantarero, 2006). Newer residents are still adjusting to their new environment and may feel insecure about their place in the new community and that they do not belong yet (Potter & Cantarero, 2006). However, long term residents, particularly those who are members of a community association, are more focused on improving the community as they feel they have their needs met, and are more secure and hence feel they belong to the community, resulting in higher levels of residential satisfaction (Potter & Cantarero, 2006).

The number of people known in the community is also related. The more friends living close by and known in the community increases the level of residential satisfaction a person experiences (Filkins et al., 2000; Grzeskowiak et al., 2003; Widgery, 1982). This is because local friendships foster strong community sentiments and more engagement in the community (Grillo et al., 2010; Grzeskowiak et al., 2003). It also determines one's commitment to staying in the area which enhances community attachment (Grzeskowiak et al., 2003). The more friends known in the community also provides a valuable source of social support for individuals to help them cope during difficult times, increasing residential satisfaction (Phillips, Siu, Yeh, & Cheng, 2004).

Ethnicity is also a determinant of residential satisfaction (Lu, 1999). Studies have shown that Caucasian people report higher levels of residential satisfaction as they often reside in higher socio-economic areas, and as a result are afforded more opportunities and experiences (Hur & Morrow-Jones, 2008; Long & Perkins, 2007; Lu, 1999; Mohan & Twigg, 2007). Therefore, it is no surprise that studies examining residential satisfaction among different ethnic groups in higher socio-economic areas have not found any differences in level of residential satisfaction experienced, because higher income leads to closer economic expectations and commonalities among the groups (Chapman & Lombard, 2006). As a result, income level is possibly a stronger influence on residential satisfaction than ethnicity (Chapman & Lombard, 2006).

High socio-economic residents experience higher levels of residential satisfaction as they often have greater access to services and facilities that lead to good health and well-being, aspects that help develop residential satisfaction (Billig, 2005; Braubach, 2007; Filkins et al., 2000; James, 2008; Jorgensen, Jamieson, & Martin, 2010; Kingston, Mitchell, Florin, & Stevenson, 1999; Mohan & Twigg, 2007; Perez et al., 2001; Schwirian & Schwirian, 1993; Shamai & Ilatov, 2005). However, one study found that higher income level is related to less residential satisfaction possibly because of higher expectations about the community, and when these expectation are not met results in less satisfaction (Hur & Morrow-Jones, 2008). Another study though, found income level does not determine residential satisfaction (Mohan & Twigg, 2007).

Another personal characteristic influencing residential satisfaction is marital status. Single persons and single parent households express less satisfaction than married couples with children (Hourihan, 1984; Lu, 1999; Marans & Rodgers, 1975). This is due to couples with children tending to have more ties to the community, in that children bind their family to the community through schooling, friendships and activities, and it is this attachment that increases residential satisfaction (Hourihan, 1984; Lu, 1999; Marans & Rodgers, 1975).

Age has been shown to be significantly related to residential satisfaction with older people tending to be more satisfied with their community than younger people (Allen, 1991; Bonaiuto et al., 1999; Brown et al., 2005; Chapman & Lombard, 2006; Filkins et al., 2000; James, 2008; Lu, 1999; Wasserman, 1982). This has been attributed to older people being more accepting of their residential situation over time than younger people and as a result, is seen to have the greatest commitment to the

community (Amerigo & Aragones, 1990; Brown et al., 2005; Chapman & Lombard, 2006; Lu, 1999; Perez et al., 2001). Other evidence is that older people maintain satisfaction by adjusting their criteria for success and failure and it is this subjective criterion which influences their level of satisfaction with the objective circumstance (Buunk, Oldersma, & de Dreu, 2001; Frieswijk, Buunk, Steverink, & Slaets, 2004). The main subjective criteria people employ when evaluating their objective life circumstance is social comparison (Buunk et al., 2001; Frieswijk et al., 2004). When an individual compares themselves to another who is worse off, this creates a lower reference point to evaluate one's own situation. This downward comparison results in the person redefining their own situation more positively. It is this act that has been found in the research to be more predictive of satisfaction than other factors such as a person's aspiration level (Buunk et al., 2001; Frieswijk et al., 2004).

Education has been found to have a significant relationship on residential satisfaction in that the more education a person has, the higher their level of residential satisfaction (Chapman & Lombard, 2006). For example, studies have shown that residents with a higher education such as university or college degree, report more satisfaction than residents with a high school education (Chapman & Lombard, 2006; Lu, 1999; Perez et al., 2001). This is believed to be mainly due to lower levels of education being correlated with poorer socio-economic status and as a result, these people are more focused on their economic survival than participating in the community (Grillo et al., 2010). In addition, the more educational opportunities a person has, the stronger their attachment to and participation in the community (Grillo et al., 2010). Other studies, however, have shown that the more education a person has the less satisfied they are (Filkins et al., 2000; Hur & Morrow-Jones, 2008). This is due to the expectations of those with higher education levels being high, resulting in them being more critical of, and less satisfied with, various dimensions of their community (Filkins et al., 2000; Hur & Morrow-Jones, 2008).

Finally, it has been found that females report higher levels of residential satisfaction than men (Aiello et al., 2010; Filkins et al., 2000; Fowler, 1991; Perez et al., 2001). This is attributed to emotional attachment to a community being a strong predictor of residential satisfaction and women having stronger emotional bonding processes than men (Aiello et al., 2010; Fowler, 1991; Perez et al., 2001). As a result, women form stronger ties to the community and therefore, experience more residential satisfaction (Aiello et al., 2010; Perez et al., 2001).

Summary of Residential Satisfaction

Residential satisfaction is a complex phenomenon that is dependent on a range of factors. A residents' perceptions of their community is based on physical, social and personal factors that are intertwined to influence residential satisfaction (Bardo, 1976; Young et al., 2004). For example, the physical characteristics of the community such as safe public open spaces may result in the establishment of social ties, leading to the development of residential satisfaction (James et al., 2009; Young et al., 2004). Therefore, to adequately assess residential satisfaction these factors must be simultaneously measured (Bardo & Bardo, 1983). One area that has not been investigated is the interrelation of sense of community, sense of belonging and sense of place and their impact on residential satisfaction. Models of residential satisfaction have alluded to the links between these concepts; however, they have not been researched together particularly in an Australian context (Bardo & Hughey, 1984; Filkins et al., 2000; Garcia et al., 1999; Vreugdenhil & Rigby, 1987). Examining the relationship between these concepts will assist in providing a comprehensive picture of the community phenomena. The next section will discuss the concepts of sense of community, sense of belonging and sense of place.

Sense of Community

Sense of community has been examined in areas such as workplaces (Chipuer & Pretty, 1999; White, Vanc, & Stafford, 2010); community development (Hillier, 2002; Wood et al., 2010); urban localities (Long & Perkins, 2007; Prezza, Pacilli, Barbaranelli, & Zampatti, 2009); online communities such as MySpace and Facebook (Miceli, Murray, & Kennedy, 2010; Reich, 2010); armed forces (Wombacher, Tagg, Bürgi, & MacBryde, 2010) and educational institutions (Osterman, 2000; Pooley, Pike, Drew, & Breen, 2002). In addition, sense of community has been examined with specific groups such as immigrants (Fisher & Sonn, 2007; Hombrados-Mendieta, Gomez-Jacinto, & Dominguez-Fuentes, 2009; Sagy, Stern, & Krakover, 1996), adolescents (Albanesi, Cicognani, & Zani, 2007; Chiessi, Cicognani, & Sonn, 2010; Pretty, Andrewes, & Collett, 1994), the elderly (Sum, Mathews, Purghasem, & Hughes, 2009; Yamasaki & Sharf, 2011), those with physical and mental health issues (BeLue, Taylor-Richardson, Lin, McClellan, & Hargreaves, 2006; Obst & Stafurik, 2010; Townley & Kloos, 2009) and Indigenous groups (Bishop, Colquhoun, & Johnson, 2006; Kenyon & Carter, 2011).

Sense of community is a construct from the field of community psychology (BeLue et al., 2006; Mak, Cheung, & Law, 2009; Mannarini & Fedi, 2009; Nowell & Boyd, 2010) and was first introduced by Sarason (1974) who defined it as:

the perception of similarity to others, an acknowledged interdependence with others, a willingness to maintain this interdependence by giving to or doing for others what one expects from them, the feeling that one is part of a larger dependable and stable structure (p.157).

Another definition has been proposed by McMillan (1976) (as cited in McMillan & Chavis, 1986) who defined sense of community as:

... a feeling that the members of a community have in relation to their belonging to a community, a feeling that the members worry about each other and that the group is concerned about them, and a shared faith that the needs of the members will be satisfied through their commitment for being together (p. 9).

These definitions provide support for the contention that sense of community refers to the relationship a person feels with their community (Heller et al., 1984; Mannarini & Fedi, 2009). A person that belongs to a group knows the group can be relied on for support; the group members can influence what occurs in the community, and that group members share community values (Heller et al., 1984; Lev-Wiesel, 1998; Mannarini & Fedi, 2009; Newbrough & Chavis, 1986). A low sense of community can result in feelings of alienation and loneliness; whereas a strong sense of community is associated with increased well-being, satisfaction and a sense of efficacy (Sum et al., 2009). The following section will discuss the theoretical models of sense of community.

Theoretical model of sense of community.

Sense of community was initially operationalised by McMillan and Chavis (1986) who developed a theoretical model of sense of community, which consisted of four components: membership; influence; integration and fulfilment of needs; and shared emotional connections. Membership refers to the feeling of belonging to a group and consists of four elements (McMillan & Chavis, 1986). First, emotional security means that group membership criteria provides security to protect the group. Second, belonging and identification involves the feelings, expectations and beliefs that a person has about fitting in with the group and that they have a place there. Third, personal investment is the contribution that people make to the community. Fourth, a common

symbol system, involves aspects such as a special language or object which has relevance to only group members (McMillan & Chavis, 1986).

Influence is a reciprocal relationship whereby group members influence the community and the community influences members (McMillan & Chavis, 1986). Reciprocally, each influences and pressures the other to perform tasks and/or conform to rules (Unger & Wandersman, 1985). Integration and need satisfaction are concerned with the notion that group association is rewarding for its members (McMillan & Chavis, 1986). Group members believe that community resources will meet their needs (Duffy & Wong, 1996). Shared emotional connections are based on members' identification of a shared history (McMillan & Chavis, 1986). People only have to identify with that history, rather than physically share it (Unger & Wandersman, 1985).

Sense of community instruments.

To validate sense of community, Chavis, Hogge, McMillan, and Wandersman (1986) developed the Sense of Community Profile using Brunswik's (1947) (as cited in Chavis et al., 1986) lens model as the methodological framework. This model asserts that it is not possible to directly observe the true level of any event; rather it is inferred by people when they are given access to a set of variables. Forty three items were grouped across the four elements of sense of community to create a personal profile for 100 participants. Twenty one 'judges' (i.e., social scientists, members of the general public and community service professionals) from three urban cities rated each participant on a Likert type 1 to 5 scale (5 representing the highest level of sense of community) on the basis of their perception of sense of community. Although the judges were a diverse group, there was a high degree of agreement ($\alpha = .97$) among them with regard to their perceptions of sense of community. It was found the predictors that represented the four elements of sense of community contributed significantly (i.e., were related to the judges' perceptions of a sense of community). As a result, Chavis et al. (1986) determined that their findings confirmed McMillan and Chavis' (1986) four component definition of sense of community. Not only did this demonstrate that sense of community can be operationalised but also that agreement can be reached on what comprises a sense of community and the appropriate factors in a residential context.

Despite this, however, there are some limitations to this research. First, Chavis et al. (1986) confound the experience of feeling as though one belongs collectively to a

community, with the psychological and behavioural correlates of sense of community (Nowell & Boyd, 2010; Peterson, Speer, & Hughey, 2006). Second, although the multidimensional definition by McMillan and Chavis' (1986) explains the development of each individual element, it does not explain how the four elements jointly define sense of community (Nowell & Boyd, 2010; Peterson et al., 2006). Additionally, the work of Chavis et al. (1986) and McMillan and Chavis (1986) has been criticised for not adequately defining community and their lack of recognition of community as a process (i.e., shared values, similar ways of doing something), rather than as a place or social group only (Dunham, 1986; Nowell & Boyd, 2010).

Another instrument, the Sense of Community Index (SCI) was developed in 1984-1985; however, it was not presented and published until 1990 in a study by Perkins, Florin, Rich, Wandersman, and Chavis. While this instrument was based on McMillan and Chavis' (1986) theory, Perkins et al. (1990) were unable to empirically confirm the four dimensions of the SCI using factor analysis. In fact, most support for McMillan and Chavis' (1986) hypothesised dimensions emerged from qualitative studies (Brodsky, 1996; Plas & Lewis, 1996; Sonn & Fisher, 1996). As a result of the above, McMillan (1996) revised the sense of community construct by renaming and redefining the original four elements: Membership, Influence, Integration and Fulfilment of Needs and Shared Emotional Connection as Spirit, Trust, Trade and Art. Spirit refers to the emotional safety that is present which encourages self disclosure, the boundaries that identify who can be trusted and a sense that one feels a belonging to the community and is accepted by community members (McMillan, 1996). Trust develops through the community's use of its power, which then evolves into justice. For trust to develop, order, authority and reciprocal influence between members and authority are needed (McMillan, 1996). Trade refers to a social economy which is based on shared intimacy where self disclosure is the medium of exchange (McMillan, 1996). Art represents the values of the community (McMillan, 1996). Together these four elements encompass sense of community.

A further attempt to examine the SCI, via principal components analysis, was the work by Chipuer and Pretty (1999). They examined the SCI in a range of contexts such as in neighbourhoods and in workplaces. Additionally, they examined different age groups and used different response formats (i.e., three point scales, true/false) to examine the internal reliability and factor structure of the SCI. Unlike Perkins et al. (1990), they found support for the four dimensions of the SCI; however, their findings

were inconsistent across all data sets, suggesting further development of the SCI is needed to adequately represent McMillan and Chavis' (1986) sense of community theory in all contexts and with all data sets. They suggested that individual items on the scale need reassessment and items from other scales be integrated with the SCI.

The assessment by Chipuer and Pretty (1999), however, has been criticised for the method chosen to empirically evaluate the dimensional structure of the SCI (Long & Perkins, 2003). It is argued that when empirical and theoretical evidence exists for a multidimensional construct, the most appropriate method to examine the fit of the theoretical structure is confirmatory factor analysis (CFA) (Long & Perkins, 2003), not principal components analysis, as used by Chipuer and Pretty (1999). Therefore, Long and Perkins (2003) examined the SCI using CFA. Their study showed poor model fit for McMillan and Chavis' (1986) original theoretical formulation and did not support the SCI being a single factor index. As a result, Long and Perkins (2003) modified the SCI into a three dimensional scale: the Brief Sense of Community Index (BSCI) comprising eight items, five of which were original SCI items. The BSCI showed good model fit using CFA. A fourth dimension relating to place attachment was identified but excluded as Long and Perkins did not consider this construct relevant to sense of community. Despite their recommendation, however, there was little theoretical justification provided by Long and Perkins (2003) for this new dimensional structure (Obst & White, 2004).

As a result, Obst and White (2004) tested Long and Perkins (2003) recommendation for dimensional structure. Also using CFA to test the SCI, they too found that the factor structure of the SCI did not adequately fit their data. In an attempt to preserve the four-factor model, however, they retained many SCI items but shifted them to different subscales based on CFA indicators. However, there is concern about whether Obst and White (2004) also failed to provide theoretical justification for moving the SCI items, in that CFA indicators should only be used if the modifications can be interpreted substantively (Peterson, Speer, & McMillan, 2008). The incongruity between the meaning of McMillan and Chavis' (1986) dimensions and the shifted items raises the question of the usefulness of this approach to improve the SCI. Additionally, it does not provide empirical support for the underlying multidimensional theory of sense of community (Mannarini & Fedi, 2009; Peterson et al., 2008).

Despite debate about: a.) the dimensions of McMillan and Chavis's (1986) model (Chiessi et al., 2010; Nowell & Boyd, 2010; Townley & Kloos, 2009; Wombacher et al., 2010); b.) McMillan (1996) redefining and renaming the constructs; and c.) re-examination of the SCI (i.e., Chipuer & Pretty, 1999; Chipuer & Pretty, 2000; Long & Perkins, 2003; Obst & White, 2004; Obst, Zinkiewicz, & Smith, 2002a, 2002b, 2002c; Perkins et al., 1990; Tartaglia, 2006; Young et al., 2004), McMillan and Chavis' (1986) sense of community model remains the primary theoretical reference for research on sense of community. However, this has not deterred attempts to develop new models and instruments (e.g., Bishop, Chertok, & Jason, 1997; Buckner, 1988; Hughey, Speer, & Peterson, 1999; Long & Perkins, 2003; Peterson et al., 2006; Peterson et al., 2008; Tartaglia, 2006).

Alternative sense of community models/instruments.

While sense of community is considered a multidimensional construct, the SCI has been validated as a unidimensional instrument (Chiessi et al., 2010; Mannarini & Fedi, 2009); therefore, an attempt to develop and test a new multidimensional measure of sense of community was undertaken by Proescholdbell, Roosa, and Nemeroff (2006). Using items from several sense of community measures: SCI (Perkins et al., 1990), Perceived Sense of Community Scale (Bishop et al., 1997), Psychological Sense of Community Instrument (Glynn, 1981) and the Neighborhood Cohesion Instrument (Buckner, 1988), exploratory and confirmatory factor analysis yielded a three factor model. Comparing the factors to McMillan and Chavis' (1986) model, it was determined that one factor was comparable with the emotional connection dimension, another with the influence dimension and the third was a combination of fulfilment of needs and membership dimensions. They argued that as research has not empirically distinguished membership and fulfilment of needs dimensions, McMillan and Chavis' (1986) model should be revised and the dimensions incorporated into one component of sense of community (Proescholdbell et al., 2006).

Another attempt to align sense of community theory with empirical research was by Tartaglia (2006), who suggested that examining the structure of the multidimensional scales was a way to advance sense of community research. Using exploratory and confirmatory factor analysis, the structure of the Italian Sense of Community Scale (ISCS) (Prezza et al., as cited in Tartaglia, 2006) was examined. Despite validation of this instrument as having four factors, Tartaglia (2006) proposed that only three of these

can be related to the dimensions of sense of community, as only these represent the relationship between people and community. The first factor related to attachment to the community, the second related to fulfilment of needs and influence and the third referred to quality of interpersonal relationships, social bonding and shared emotional connection. The model proposed by Tartaglia (2006), considers the practical relation between the community and the individual regarding satisfaction and the use of resources, as well as the affective relation with other community members. It also incorporates place attachment which was rarely considered in community psychology until the late 1990s. This model defines sense of community as consisting of relational, territorial and action dimensions (Tartaglia, 2006). Tartaglia, however, suggests possibly a fourth dimension which relates to identification of self with place, as research has shown that where people live can contribute to defining their identity (Mankowski & Rappaport, 1995; Obst et al., 2002a; Puddifoot, 1994). A limitation, however, is there was no evidence of a second order CFA being performed to show that these three factors could represent one underlying sense of community construct (Peterson et al., 2008).

Therefore using CFA, Peterson et al. (2008) tested the Brief Sense of Community Scale (BSCS) in an attempt to develop an instrument that better represented McMillan and Chavis' model (1986). They acknowledged the known measurement flaws of the SCI and involved McMillan (the theory's primary author) in the development of this instrument. The results provided empirical support for McMillan and Chavis' (1986) sense of community model in that the four dimensions of sense of community could be considered as representing one underlying sense of community construct. As a result, they suggest that the questionability around McMillan and Chavis' (1986) theory may be based on measurement weakness rather than theoretical shortcomings (Peterson et al., 2008). Additionally, they found sense of community to be a multidimensional construct and therefore, the unidimensional SCI may not be the most appropriate measure for sense of community. Additionally, moving existing SCI items into new subscales, supplementing subscales with new items, or creating an alternative number of dimensions, as was done by Long and Perkins (2003) and Obst and White (2004), may not be the best option for describing sense of community (Albanesi et al., 2007; Peterson et al., 2008). Despite their findings, they suggest more research is needed to test the underlying constructs with different referent groups and in different contexts to assure generalisability.

Despite development of new models and instruments, there is little agreement on a definitive, standardised and consistent psychometric measure of sense of community (Chiessi et al., 2010; Mannarini & Fedi, 2009; Nowell & Boyd, 2010; Peterson et al., 2008; Young et al., 2004). Additionally, few studies have empirically confirmed the four factor model conceptualised by McMillan and Chavis (1986). Possible reasons for the four sense of community dimensions not being supported (i.e., Brodsky & Marx, 2001; Brodsky, O'Campo, & Aronson, 1999; Chipuer & Pretty, 1999; Long & Perkins, 2003; Obst et al., 2002a, 2002b; Obst et al., 2002c; Tartaglia, 2006) include: the SCI, the main index used in most studies, may not accurately reflect McMillan and Chavis' model. In fact, McMillan was not involved in the development of the SCI a possible reason why the index does not reflect the model (Long & Perkins, 2003). Second, dimensions change over time and/or vary from place to place (Chavis & Pretty, 1999; Hill, 1996; Long & Perkins, 2003). Third, items measuring other constructs considered separate but related to sense of community, such as place attachment are included in the SCI (Albanesi et al., 2007; Long & Perkins, 2003). Finally, the dichotomous response options constrain the sensitivity of the scale; a 5 point Likert option may increase sensitivity (Albanesi et al., 2007; Long & Perkins, 2003).

Despite debate as to the underlying dimensions of sense of community and the most appropriate instrument to measure this construct, research has determined a number of factors that contribute to sense of community (Brodsky et al., 1999; Butterworth, 2000; Farrell, Aubry, & Coulombe, 2004; Mannarini & Fedi, 2009; Nasar & Julian, 1995; Obst et al., 2002a; Plas & Lewis, 1996; Prezza & Costantini, 1998; Tartaglia, 2006; Unger & Wandersman, 1985; Wood et al., 2010). Research has shown the concept of sense of community does not only examine the individual level factors but also group or community factors to determine why some groups experience a higher sense of community than others (BeLue et al., 2006; Mannarini & Fedi, 2009).

Factors impacting on sense of community.

As with residential satisfaction, sense of community predictors are categorised into social, physical and personal factors. Social factors include aspects such as belongingness and community participation (Brodsky et al., 1999; Farrell et al., 2004; Nasar & Julian, 1995; Obst et al., 2002a; Prezza & Costantini, 1998; Tartaglia, 2006). Physical factors include aspects such as community layout and design, crime rate and housing density (Brodsky et al., 1999; Butterworth, 2000; Plas & Lewis, 1996;

Tartaglia, 2006; Wood et al., 2010); while personal characteristics refer to a person's age, tenure type (e.g., renting or home owner), length of residence and household income (Prezza & Costantini, 1998; Tartaglia, 2006; Unger & Wandersman, 1985). These factors play a reciprocal role in the development of sense of community. Discussion of these factors and the research findings associated with their impact on sense of community are now discussed.

Social Factors.

It has been found that individuals involved in the community experience intimate emotional support, a sense of belongingness, increased well-being and reduced feelings of social isolation, all of which result in higher levels of sense of community (Albanesi et al., 2007; Brodsky & Marx, 2001; Davidson & Cotter, 1991; Davidson, Cotter, & Stovall, 1991; Evans, 2009; Farrell et al., 2004; Long & Perkins, 2007; Mak et al., 2009; Ohmer, 2007; Perkins et al., 1990; Perkins & Long, 2002; Prezza & Costantini, 1998; Unger & Wandersman, 1985; Wood et al., 2010). Community involvement is comprised of the following aspects: neighbouring, citizen participation, collective efficacy, informal social control and communitarianism (Long & Perkins, 2007; Ohmer, 2007). Neighbouring is the mutual informal assistance and sharing of information among community members (Long & Perkins, 2007; Perkins & Long, 2002; Unger & Wandersman, 1985). Citizen participation refers to formal civic action through a community organisation (e.g., resident and ratepayers association). Similar to neighbouring, it involves participation; however, it is classed as formally organised participation. Collective efficacy is one's trust in the effectiveness of civic action (Long & Perkins, 2007; Ohmer, 2007); informal social control refers to the daily regulation of community norms of behaviour by residents (Long & Perkins, 2007); and regulation occurs through directly dealing with the problem or via contact with government officials or community leaders. Finally, communitarianism refers to the worth given to the community as well as a collective commitment to improving the community (Long & Perkins, 2007). There is a positive correlation between these aspects of community involvement and sense of community (Brodsky et al., 1999; Chavis & Wandersman, 1990; Hughey et al., 1999; Long & Perkins, 2007; Perkins et al., 1990; Perkins & Long, 2002; Prezza, Amici, Roberti, & Tedeschi, 2001).

Physical Factors.

The reciprocal relationship between social and physical factors can be seen in the correlation between the built environment and social networks in developing a sense of community (Brodsky et al., 1999; Brown, Burton, & Sweaney, 1998; Butterworth, 2000; Chavis & Wandersman, 1990; McManus, 1994; Pendola & Gen, 2008; Talen, 1999; Tartaglia, 2006; Wood et al., 2010). For example, communities designed to encourage resident interaction provide easy pedestrian access throughout the neighbourhood, access to amenities within walking distance, such as public open spaces and a variety of educational, commercial and recreational facilities. As a result, residents of these communities experience higher levels of sense of community as these environmental features provide more opportunities for people to interact and develop social ties (Brown & Cropper, 2001; Cochrun, 1994; Evans, 2009; Nasar & Julian, 1995; Pendola & Gen, 2008; Plas & Lewis, 1996; Talen, 1999; Wood et al., 2010).

Communities with residential instability, due to aspects such as a high crime rate and a high proportion of people frequently moving out of the area, experience a low sense of community as residents are afforded less opportunity to form relationships with one another (Lev-Wiesel, 1998; Long & Perkins, 2007; Wilson-Doenges, 2000; Wood et al., 2010). For example, communities with physical (e.g., graffiti) and social (e.g., loitering) problems experience lower levels of sense of community as residents feel less safe and secure, withdraw from each other and interact less resulting in less chance of a sense of community forming (Brodsky, 1996; Unger & Wandersman, 1985; Wilson-Doenges, 2000; Wood et al., 2010). However, in communities with residential stability and low crime rates, a high level of sense of community often develops, even if the community is only recently formed, as residents are given the opportunity to develop relationships and social ties (Long & Perkins, 2007; Sagy et al., 1996). Therefore, it can be concluded that low crime rate and residential stability are important for the development of sense of community.

It has also been found that low and medium density housing results in higher levels of sense of community as people feel less crowded and that they have more privacy and personal space, as well as there being less strain on available community resources (Brodsky et al., 1999; Kasarda & Janowitz, 1974; Pendola & Gen, 2008; Sagy et al., 1996; Wood et al., 2010). Lower density housing areas have been found to have a higher presence of children younger than 18 years at home (Nasar, 2003; Pendola &

Gen, 2008). Research has revealed that children in a household bind the occupants of that residence to the community through schooling, friendship networks and sporting and recreation activities, more than those without children, possibly explaining why lower density housing results in higher levels of sense of community (Lu, 1999; Marans & Rodgers, 1975; Nasar, 2003; Pendola & Gen, 2008; Perkins & Long, 2002; Prezza & Costantini, 1998; Robinson & Wilkinson, 1995; Wilson-Doenges, 2000).

Personal Factors.

Being a member of a community group or organisation is associated with higher levels of sense of community (BeLue et al., 2006; Brodsky, Loomis, & Marx, 2002; Chavis & Wandersman, 1990; Evans, 2009; Farrell et al., 2004; O'Grady & Fisher, 2008; Obst & White, 2007; Obst et al., 2002c; Prezza et al., 2001; Prezza & Costantini, 1998). Group members are drawn together through sharing a common interest, resulting in the development of social ties and identification with other members of that group. Being a member of a community group or organisation, results in a person developing a sense of belonging, an emotional connection to other people and a feeling that their needs are being met (Farrell et al., 2004; Obst & White, 2007). This reflects McMillan and Chavis' (1986) theorised components of sense of community.

The number of people known in the community increases sense of community (Albanesi et al., 2007; Brodsky & Marx, 2001; Davidson & Cotter, 1991; Glynn, 1981; Long & Perkins, 2007; Nasar & Julian, 1995; O'Grady & Fisher, 2008; Ohmer, 2007; Prezza & Costantini, 1998; Unger & Wandersman, 1985). Residents who know other community members by name and/or considered other community members as friends experience more sense of community than those who do not know others or do not consider they have friends in the community (Evans, 2009; Nasar & Julian, 1995). The personal connections they make provide a form of social ties, which increases their sense of community (Albanesi et al., 2007; Brodsky & Marx, 2001; Davidson & Cotter, 1991; Long & Perkins, 2007; Ohmer, 2007; Prezza & Costantini, 1998; Unger & Wandersman, 1985).

Some studies have found age does not have an influence on sense of community (Mak et al., 2009; Nasar & Julian, 1995; Prezza & Costantini, 1998) while others conclude that older residents have an increased sense of community as compared to younger residents (Brodsky et al., 2002; Davidson & Cotter, 1986, 1991; Davidson et

al., 1991; Prezza et al., 2001; Prezza & Costantini, 1998; Ross, 2002). Those finding age differences to be relevant provide explanations more in terms of length of residence between older and younger or newer residents rather than age (Buckner, 1988; Chavis et al., 1986; Farrell et al., 2004; Long & Perkins, 2007; Perkins & Long, 2002; Unger & Wandersman, 1985). The longer a person lives in an area, their sense of community increases as they are more likely to participate in the community, resulting in face-to-face interactions and contact with their neighbours (Ross, 2002). Time pressures experienced by parents with young children may also affect the level of sense of community they experience (Ross, 2002). Although the parents' sense of community may be facilitated by their children's involvement in school activities, as well as informal play and organised activities, the demands of child rearing may interfere with active community involvement (Ross, 2002).

Other research has reported that people with a higher income level experience more sense of community (BeLue et al., 2006; Brodsky et al., 2002; Davidson & Cotter, 1986, 1991; Davidson et al., 1991; Evans, 2009). This is explained in that low-income residents are over represented by those unemployed and are therefore, often stigmatised and excluded from the mainstream group as they are not seen to belong (Evans, 2009). As a result, their sense of community is diminished as elements such as fulfilments of one's needs to belong are not being met (Davidson & Cotter, 1986).

Research has shown that ethnicity influences the level of sense of community experienced, in that Caucasian residents have more sense of community than non-Caucasian residents in a predominately White society (BeLue et al., 2006; Davidson & Cotter, 1986, 1991; Davidson et al., 1991). This difference can be explained through social comparison in that if someone is perceived to be different then social comparison is used to determine who is a member of the community by defining necessary characteristics of membership (Fisher & Sonn, 2007). If an Anglo-European population controls a community it places them in a dominant position to maintain the key elements of their sense of community, and through elements such as membership, these boundaries can be reinforced against those not fitting perceived group norms (Fisher & Sonn, 2007).

Home ownership is significantly related to sense of community in that owning one's home leads to more commitment and investment in the community (Brodsky et al., 2002; Brodsky et al., 1999; Evans, 2009; Robinson & Wilkinson, 1995). As home

owners are more likely to have a vested interest in the safety, quality and upkeep of the community, they are more likely to be involved in the community and interact with their neighbours, which in turn increase sense of community (Brodsky et al., 2002; Brodsky et al., 1999; Evans, 2009; Robinson & Wilkinson, 1995).

Education level is reported to relate to sense of community in that the higher education level a person has, the lower their sense of community (Bishop et al., 1997; Buckner, 1988; Prezza & Costantini, 1998; Robinson & Wilkinson, 1995). Having a higher education level can result in less sense of community as a person may be more mobile in terms of employment and therefore, less dependent on the community to meet their needs (Bishop et al., 1997; Buckner, 1988; Prezza & Costantini, 1998; Robinson & Wilkinson, 1995). A higher education level may also make a person less likely to fit into their community and as a result have weaker community ties resulting in less sense of community (Buckner, 1988; Prezza & Costantini, 1998; Robinson & Wilkinson, 1995). Other research, however, has not found education level to influence sense of community (Mak et al., 2009; Peterson et al., 2008).

Most studies have found that gender is not related to the development of sense of community (Mak et al., 2009; Nasar & Julian, 1995; Peterson et al., 2008). For the few that have demonstrated a significant difference, the context was a key feature. For example, women in a busy city setting have higher levels of sense of community than men; however, in a smaller urban or rural setting no differences were found (Prezza & Costantini, 1998). No explanation was provided to explain these findings. Women have also been found to have more sense of community than men in gated communities (Wilson-Doenges, 2000). Differences may be due to feelings of safety which have greater importance for females (Carro et al., 2010; Shenassa, Liebhaber, & Ezeamama, 2006), which in turn contribute to the development of sense of community (Brodsky, 1996; Unger & Wandersman, 1985; Wilson-Doenges, 2000).

Married couples experience more sense of community (BeLue et al., 2006; Buckner, 1988; Farrell et al., 2004; Loomis, Dockett, & Brodsky, 2004; Nasar & Julian, 1995; Prezza et al., 2001; Prezza et al., 2009; Robinson & Wilkinson, 1995). This may be due to married couples being more attached and settled in their community leading to less mobility out of the neighbourhood (Farrell et al., 2004). Being 'anchored' to their community encourages interaction with others and fosters neighbouring behaviour thereby, increasing sense of community (Farrell et al., 2004).

Links to residential satisfaction.

Sense of community and residential satisfaction have been found to be significantly related (Chavis & Wandersman, 1990; Glynn, 1981, 1986; Hur & Morrow-Jones, 2008; Jorgensen et al., 2010; Mesch & Manor, 1998; Perkins et al., 1990; Pretty, Conroy, Dugay, Fowler, & Williams, 1996; Prezza et al., 2001; Prezza & Costantini, 1998). Sense of community leads to residential satisfaction in that it encourages neighbouring relations and enhances one's perception of personal and group empowerment (Chavis & Wandersman, 1990; Jorgensen et al., 2010). Sense of community can also mediate the perception of community problems, resulting in more positive impressions which can lead to neighbourhood stability and growth and greater satisfaction with the community (Chavis & Wandersman, 1990).

Summary of sense of community.

People with a high sense of community believe they can exert some control over the community and also be influenced by it; deem their needs can be and are being met; and experience a strong emotional bonding and belongingness to their community (McMillan & Chavis, 1986). Physical, social and personal factors play a reciprocal role in the development of sense of community. Research has revealed there is disagreement as to whether sense of community is a single, strongly delineated concept or has distinct multiple dimensions. Due to the debate surrounding the underlying dimensions of sense of community, one of these dimensions, sense of belonging, was explored as a separate construct in an attempt to understand its contribution to sense of community.

Sense of Belonging

Sense of belonging has been examined in a range of fields and areas such as psychiatric nursing (Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992); mental health (Dekel & Nuttman-Shwartz, 2009); community health (Warin, Baum, Kalucy, Murray, & Veale, 2000); education systems (Hagerty & Williams, 1999; Kember, Lee, & Li, 2001; Nunez, 2009); places of employment (Lim, 2007; Winter-Collins & McDaniel, 2000); armed forces (Dasberg, 1976; Sargent, Williams, Hagerty, Lynch-Sauer, & Hoyle, 2002; Williams, Hagerty, Yousha, Hoyle, & Oe, 2002), parks, recreation and leisure (Jones, Patterson, & Hammitt, 2000); spousal abuse (Rankin, Saunders, & Williams, 2000); sexual orientation (McLaren, 2006; McLaren, Jude, & McLachlan, 2007, 2008); and information technology (Lim, 2007).

In addition, sense of belonging has been examined in various groups such as young adults (Goodenow, 1993a; Newman, Lohman, & Newman, 2007; Sanchez, Colon, & Esparza, 2005), older adults (Kissane & McLaren, 2006; McLaren, Gomez, Bailey, & Van Der Horst, 2007; Rowles, 1983), migrants and refugees (den Besten, 2010; Nesdale et al., 1997), ethnic groups (Ahnallen, Suyemoto, & Carter, 2006; La Grange & Ming, 2001; Rankin et al., 2000), Indigenous groups (Hill, 2009); and survivors of war (Dekel & Nuttman-Shwartz, 2009; Dekel & Tuval-Mashiach, 2010; Kestenbergs & Kestenbergs, 1988; Nuttman-Shwartz & Dekel, 2009).

Sense of belonging is described as an extension of Maslow's (1954) concept of belongingness, presented in his hierarchical needs theory of motivation (see Figure 6). Maslow theorised that belonging is a basic human universal need necessary for psychological well-being and self-actualisation. Belonging is third in the hierarchy, following physiological (the first need in the hierarchy) and safety (the second need in the hierarchy). If the physiological and safety needs are gratified then the belongingness need will emerge resulting in a person striving to achieve this by seeking a place in a group (Anant, 1967, 1969). Therefore, Maslow believes belonging to be a subjective feeling of being a part of a social system; the more a person considers their needs are being met in a particular group or system, the more they feel they belong (Anant, 1966).

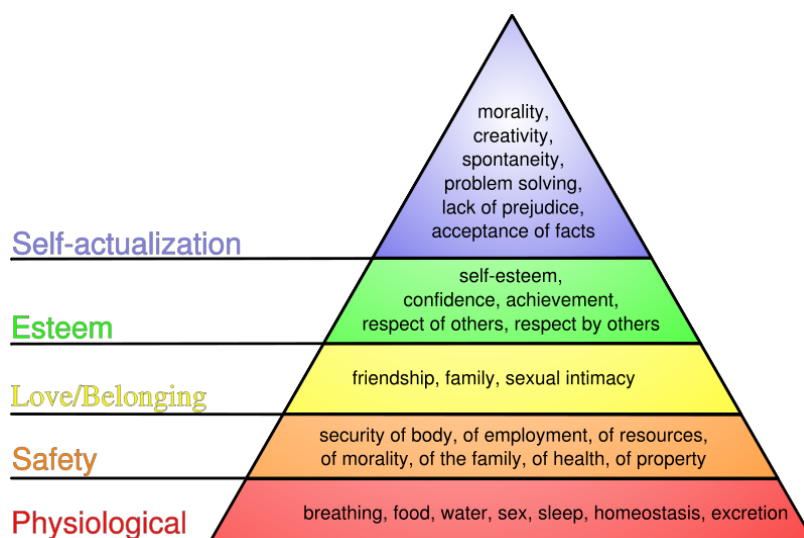


Figure 6. Maslow's hierarchy of needs.

From "Maslow's hierarchy of needs", by W. Huitt, 2007. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved 20 November 2010 from <http://www.edpsycinteractive.org/topics/regsys/maslow.html> Reprinted with permission.

Early research described sense of belonging as the recognition and acceptance of a person by other members in a group (Anant, 1966, 1967, 1969) cementing one's sense of 'feeling at home', and the close relationship and affinity one has for a place (Seamon, 1979). More recently, research has described sense of belonging from different perspectives. From the physical perspective, belonging refers to the possession of objects, persons or places, while from the spiritual perspective, belonging refers to a metaphysical relationship with a place or being that exists at a universal level (Hagerty et al., 1992). From the sociological perspective, belonging refers to one's membership of a system or group (Hagerty et al., 1992). From the psychological perspective, belonging is an internal affective or evaluative feeling, or perception (Hagerty et al., 1992). In summary, sense of belonging is the experience of involvement in a natural or cultural environment, so that a person feels they are an integral part of that environment (Hagerty et al., 1992). People can be a part of many different communities and feel they belong (McLaren, 2006).

Sense of belonging is an important element in developing and maintaining a person's relationship with others and contributes to a person's well-being (Hagerty, Williams, Coyne, & Early, 1996; McLaren & Challis, 2009; Steger & Kashdan, 2009). A lack of, or low sense of belonging can lead to many physical and psychological problems such as eating disorders, loneliness, anxiety, depression, hopelessness, low self esteem, suicide and even violence (Bailey & McLaren, 2005; Baumeister & Leary, 1995; Hagerty & Williams, 1999; Hagerty et al., 1996; Kissane & McLaren, 2006; McLaren, Gomez, et al., 2007; McLaren, Jude, Hopes, & Sherritt, 2001; Newman et al., 2007; Rankin et al., 2000; Steger & Kashdan, 2009; Williams et al., 2002). For example, low sense of belonging contributed to mental health issues of Israeli soldiers during war, as they felt abandoned and rejected (Dasberg, 1976); and Holocaust survivors considered that they did not belong in any social group or country after World War II, with many feeling isolated and abandoned (Kestenberg & Kestenberg, 1988). If a person does not consider they are a member of a group, or do not play an integral part of a social system, they are insecure and uneasy and their anxiety increases when experiencing a new foreign situation (Anant, 1967).

By experiencing a higher level of sense of belonging, people have better social and psychological functioning and fewer mental health issues (Anant, 1966; McLaren & Challis, 2009; Mellor et al., 2008; Steger & Kashdan, 2009). For example, they experience fewer somatic concerns, less suicide ideation and stress and lower levels of

depression, anxiety and insomnia (McLaren & Challis, 2009). This is because a high sense of belonging enhances a person's coping skills in that they are better able to respond and be more adaptive to major life events or stressors (Anant, 1966; Kissane & McLaren, 2006; McLaren & Challis, 2009; Williams et al., 2002). Belonging to a group gives people a sense of purpose, meaning and worth (Anant, 1966; Baumeister & Leary, 1995; Hagerty & Williams, 1999; McLaren et al., 2001; Newman et al., 2007).

Studies on sense of belonging and coping with a physical disability or illness show that those who experience higher levels of sense of belonging have less emotional stress, higher self esteem and higher morale due to support from friends and family (Sargent et al., 2002). It has even been shown that women with breast cancer live longer if they feel a sense of belonging to other women with breast cancer in group therapy compared to women with breast cancer who do not feel a sense of belonging (Sadava, 1997). Belonging provides them a sense of worth, social support, strength and encouragement to cope with times of difficulty (Gall & Cornblat, 2002; Sadava, 1997). Young people who have a sense of belonging within their family also have better coping skills as they feel they can turn to family for social support (Chubb & Fertman, 1992). Studies on depression and suicidal ideation in older adults has found that sense of belonging is a protective factor in that having a high level of feeling valued by others and being integrated within a community reduces the effects of depression on suicidal ideation among older adults (Kissane & McLaren, 2006; McLaren & Challis, 2009; McLaren, Gomez, et al., 2007). A higher level of sense of belonging provides more survival and coping beliefs (Kissane & McLaren, 2006; McLaren & Challis, 2009). Those with a high sense of belonging, felt motivated to belong and believed they had coping skills to survive times of crisis (Kissane & McLaren, 2006).

Another benefit of experiencing high levels of sense of belonging is that individuals often feel motivated to perform (Goodenow, 1993a, 1993b). For example, when students feel they belong in the school community this promotes positive school behaviour such as academic success and effort in studies. Motivated students put more effort into school, which leads to more positive school performance (Sanchez et al., 2005). Those who do not feel accepted, important or cared for are less motivated to attend school and achieve academically (Sanchez et al., 2005).

Theoretical model of sense of belonging.

Early research on sense of belonging had limitations that included a lack of reliable and valid research instruments, sampling issues and procedural concerns (Hagerty et al., 1996; Tovar & Simon, 2010). As a result, attempts to describe sense of belonging have been anecdotal and narrative rather than empirical or theoretical (Hagerty et al., 1992; Hagerty et al., 1996; Tovar & Simon, 2010). Due to this lack of empirical investigation, Hagerty et al. (1996) developed a theoretical model (see Figure 7) comprising antecedents and consequences. Antecedents are essential for the development of a sense of belonging, while consequences occur as a result of sense of belonging (Hagerty et al., 1992; Hagerty & Patusky, 1995; Newman et al., 2007).

For a person to experience a sense of belonging, they need energy for involvement, need to have an interest and desire (motivation) for meaningful involvement and have the potential to develop a sense of belonging by having shared or complementary characteristics with their environment (Hagerty et al., 1992; Hagerty & Patusky, 1995). Once these antecedents are achieved, the person feels valued, needed and significant within their environment (Newman et al., 2007). These are the attributes of sense of belonging, or more formally, valued involvement and fit (Hagerty et al., 1992). Valued involvement refers to the experience of feeling accepted, valued and needed within their given environment, while fit refers to an individual's perception that they connect with or complement others within their environment (Hagerty et al., 1992; Hagerty & Patusky, 1995; Kestenberg & Kestenberg, 1988; McLaren, Gomez, et al., 2007; Newman et al., 2007). The consequences of sense of belonging include: physical, psychological, spiritual, or social involvement and growth; attribution of meaningfulness to that involvement; and foundation for behavioural and emotional responses (Hagerty et al., 1992).

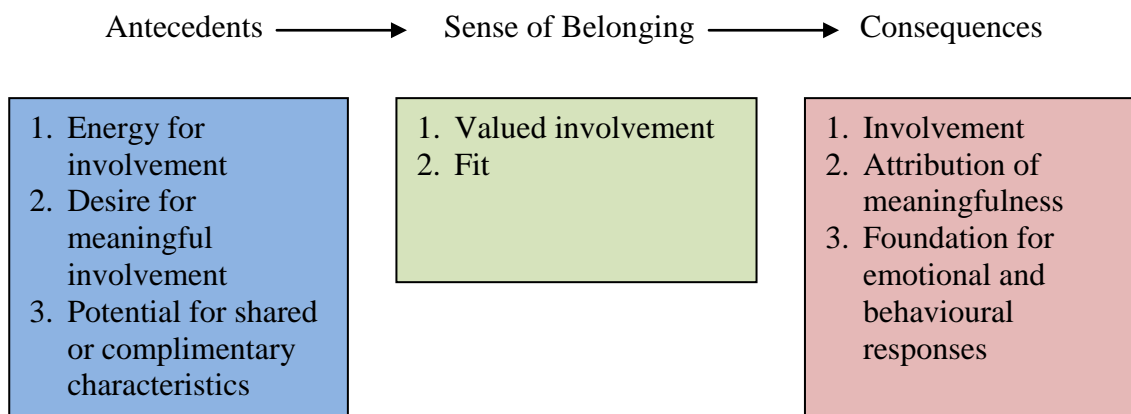


Figure 7. Sense of belonging model.

From “Sense of belonging and indicators of social and psychological functioning”, by B. Hagerty, R. Williams, J. Coyne and M. Early, 1996, *Archives of Psychiatric Nursing*, 10(4), p. 236. Copyright 1996 by W.B. Saunders Company. Reprinted with permission.

Sense of belonging instruments.

The antecedents of the above theoretical framework were the conceptual basis for the development of the Sense of Belonging Instrument (SOBI) (Hagerty & Patusky, 1995). Prior to the development of this self report instrument, sense of belonging was often confounded with other related concepts such as hopelessness, alienation and loneliness, or was typically measured by anecdotal and narrative accounts through interviews (i.e., Dasberg, 1976; Hagerty et al., 1992; Kestenberg & Kestenberg, 1988; Sargent et al., 2002). Interviewing still continues to be utilised in research examining sense of belonging after the development of the SOBI (i.e., Ahnallen et al., 2006; Kember et al., 2001; Khan, 2002; La Grange & Ming, 2001) as it is a valid method of measurement. This study is merely highlighting the limited use of quantitative methods to measure sense of belonging prior to the development of this instrument.

Items were generated from a number of sources on sense of belonging, such as literature reviews, focus groups and interview statements (Hagerty & Patusky, 1995). A factor analysis of the items resulted in the emergence of two scales that contained distinct dimensions of sense of belonging as theoretically proposed by Hagerty and Patusky (1995). The first scale represented the antecedents of sense of belonging such as desire and the ability for developing a sense of belonging (Hagerty & Patusky, 1995). The second scale represented the psychological state of sense of belonging such as the dimensions of valued involvement and fit.

Until Hagerty and Patusky's (1995) study, research rarely involved a community sample, most research examined sense of belonging in students. As a result, prior to the development of the SOBI, the Psychological Sense of School Membership (Goodenow, 1993b) was the most widely quantitative instrument to measure sense of belonging. This instrument measures the extent to which students feel they are respected, accepted and a valued part of their academic context (Goodenow, 1993b). However, the use of this instrument is restricted to measuring sense of belonging in a school environment and cannot be used to measure sense of belonging in the general community. For this reason, the SOBI (Hagerty & Patusky, 1995) is the most widely utilised quantitative measure as it has been found to be valid and reliable in a variety of settings and with various target groups (i.e., Bailey & McLaren, 2005; McLaren et al., 2008; Winter-Collins & McDaniel, 2000).

Despite the few quantitative instruments to measure this construct, there is little debate as to the underlying dimensions of sense of belonging. Research with the various qualitative and quantitative methods has determined a number of factors that contribute to sense of belonging.

Factors impacting on sense of belonging

In a similar vein to residential satisfaction and sense of community, sense of belonging predictors are categorised into social, personal and personal dimensions. Social factors include aspects of participation in the community and social support (Kissane & McLaren, 2006; La Grange & Ming, 2001; Warin et al., 2000). Physical characteristics include fear of crime, housing quality, housing density and community layout and design. Personal characteristics refer to length of residence, marital status, gender household income (Brown, Brown, & Perkins, 2004; Gustafson, 2009; Hagerty et al., 1996; La Grange & Ming, 2001; Lewicka, 2005; Newman et al., 2007; Puddifoot, 1994). Discussion of these factors and the research findings on their impact on sense of belonging follow.

Social factors.

Sense of belonging is strongest in communities where the residents are involved in their community, consider it is easy to make new friends and frequently visit friends living in the community (Anant, 1966; Bailey & McLaren, 2005; Burby et al., 1975; Culhane & Dobson, 1991; Davidson, Hoge, Merrill, Rakfeldt, & Griffith, 1995; Hagerty

et al., 1996; Kissane & McLaren, 2006; Warin et al., 2000). Community participation increases one's sense of belonging and commitment to the community (Chubb & Fertman, 1992; Hagerty et al., 1996; La Grange & Ming, 2001). If people consider themselves as part of the community, feel they are safe, have access to facilities and resources and are able to interact socially, a sense of belonging is enhanced (Warin et al., 2000). This is due to these characteristics and perceptions fostering and supporting the formation of local social ties, which in turn leads to a greater sense of belonging to the community (Burby et al., 1975; Kissane & McLaren, 2006). Being involved in the community helps a person define themselves in terms of their interpersonal relationships, and substantiates their feelings of self and of being valued and important (Hagerty et al., 1996).

Participation in activities has also been found to contribute to sense of belonging in long term institutionalised mental health patients (Davidson et al., 1995). Patients were found to participate in activities more while institutionalised than when they returned to the general community. Those who returned to the community rarely participated in any community activities because they felt lonely, empty and isolated as they felt a lack of a sense of belonging to the general community (Davidson et al., 1995). Even though they did not enjoy their experience in the institution, did not want to return to the institution once released, or developed any strong relationships, the 'forced togetherness' created an environment in which they identified with other patients and felt they belonged (Davidson et al., 1995). By experiencing this sense of belonging, they participated in regular social activities (Davidson et al., 1995).

However, it is not merely participating in an activity that enhances a sense of belonging, it also involves the motivation to belong. Individuals who want to belong are more likely to have higher levels of sense of belonging (Bailey & McLaren, 2005; Lim, 2007). For example, a study on physical activity as a predictor of sense of belonging found that it was not performing physical exercise with others that was associated with sense of belonging, but rather the actual motivation to belong that predicted sense of belonging (Bailey & McLaren, 2005). Participating in physical activities with others does not automatically provide a feeling of being valued by the group (Bailey & McLaren, 2005). Those who wanted to belong more actively found others to undertake physical activity with than those who were not motivated to belong.

Sense of belonging has been associated with social support (Anant, 1967; Culhane & Dobson, 1991; Hagerty & Patusky, 1995; Hagerty et al., 1996; Rankin et al., 2000). Perceived high levels of social support are associated with higher levels of sense of belonging while perceived low levels of social support is associated with low sense of belonging (Anant, 1967; Hagerty & Williams, 1999; Hagerty et al., 1996; McLaren et al., 2001; Rankin et al., 2000). Social support enables a person to self disclose resulting in psychological benefits which include increased affection, reduced feelings of isolation and increased sense of belonging (Warin et al., 2000). The more people talk with friends, the less time they spend fixated on an issue and they experience a decrease in illness rates. Socialising with others also provides a source of distraction to help individuals overcome mundane problems and concerns. Experiencing social support also reduces a person's level of anxiety in time of crises or frustrations as they can turn to members of the group for support and assistance (Anant, 1967). Depressed individuals in group therapy feel supported and less alienated. They are able to discuss their issues and learn new coping strategies to deal with difficulties. As a result, they have been found to have higher levels of sense of belonging than individuals with depression not in group therapy (Culhane & Dobson, 1991; Sargent et al., 2002). Thus, the sense of belonging promoted by socialisation with others enables people to transcend their everyday concerns.

People who experience positive social interaction are more likely to experience a sense of belonging (Steger & Kashdan, 2009). For example, long term institutionalised patients who returned to the community confronted a lack of acceptance by community members, often due to the stigma of mental health issues (Davidson et al., 1995). Further, they experienced negative social interaction in that people often ridiculed or ostracised them, making them generally feel unwelcome (Davidson et al., 1995). This negative social interaction contributed to them experiencing low levels of sense of belonging. Additionally, depressed individual are less likely to perceive cues of acceptance and belonging in social interactions; are more likely to view ambiguous social interaction as a negative social interaction and attribute these negative outcomes to themselves (Steger & Kashdan, 2009). As a result, those depressed are more likely to focus on negative social interactions and therefore, are less likely to experience a sense of belonging (Steger & Kashdan, 2009).

Physical factors.

A community that incorporates places suited to the needs of all community members such as the disabled, children, elderly and young people, encourages a sense of belonging, as each group believes they are considered as part of the community. To increase sense of belonging, these services are centrally located in a mixed use area, have adequate signage and are easily accessible (City of Wodonga, 2008; Ling, 2008; Motloch, 2001; Ng, 2010; Queensland University of Technology, 2008).

Communities designed to incorporate public spaces that are pleasant to use, uncluttered and easily maintained streets and accessible and safe walking routes with adequate street lighting, gives a feeling of safety and security (Li, 2008; Ling, 2008; Motloch, 2001). As a result, this encourages social interaction, which reduces isolation, enhances community connectedness and increases sense of belonging (Li, 2008; Ling, 2008; Motloch, 2001; Ng, 2010; Queensland University of Technology, 2008).

Specialised housing designs such as large front porches and living rooms in the front of the house have resulted in 'eyes on the street', which in turn, reduces crime and promotes neighbour interactivity. As a result, homeowners take pride of their front yard, which increases the housing quality (Ng, 2010). This encourages people out of their homes to interact and participate in their community where residents forge relationships with other community members, fostering a sense of belonging (Jorgensen et al., 2007; Lewicka, 2010; Ng, 2010; Post, 2008; Semenza & March, 2009).

Low and medium housing density areas experience an increased sense of belonging to a community as individuals do not feel 'lost' in the crowd; while increased density leads to increased loneliness and reduced sense of belonging (Fincher & Gooder, 2007; Ng, 2010). Increased density reduces social trust and neighbourly behaviour as there is less chance to develop meaningful social interactions (Fincher & Gooder, 2007; Mee, 2009; Ng, 2010).

Areas with a high sense of belonging have lower levels of crime regardless of socio-economic status and neighbourhood characteristics (Harrison, Gemmell, & Heller, 2007; Wedlock, 2006). This is due to community cohesion in which residents strive for the same goal of neighbourhood safety (Wedlock, 2006). If individuals feel physically at risk on the streets, they retreat indoors, reducing social interaction and the

development of social ties and hence, reducing a sense of belonging to the community (Harrison et al., 2007).

Participating in the community such as being a member of a community group (i.e., sporting association, church group) or using recreational facilities (i.e., public skate park, community centre) leads to the development of a sense of belonging, which results in the reduction of crime within a community (Cameron & MacDougall, 2000; Harrison et al., 2007). The availability of sport and physical activity reduces crime as these provide accessible and appropriate activities in a supportive context (Cameron & MacDougall, 2000; Harrison et al., 2007). Additionally, the social ties formed due to participating in the community assist individuals to feel connected to the community and that they belong (Harrison et al., 2007).

Personal factors.

Feelings of belonging increase with the length of time a person lives in a place (Hay, 1998a, 1998b). Puddifoot (1994) suggested that 98% of participants, who felt they belonged to their current community, mentioned long-term residence as a reason for feelings of belonging. Length of residence enhanced social ties and community connection, and provides a temporal context in which one can put personal meaning to the place and connect significant life events to it (Rowles, 1983; Sampson, 1988).

The history of the place is directly related to length of residence, and has been found to be important in the development of a sense of belonging in a community (Garcia et al., 1999; McMillan & Chavis, 1986). History enables a person to understand the origins and transformations of a community as well as provide an awareness that the members of the community have of its development. History is like a 'collective memory' that strengthens the feeling of identity and belonging in the community (Garcia et al., 1999). The average time for a person to settle in a new place and establish roots is from 6-18 months; however, some people adapt and adjust easier than others to new situations (Bolan, 1997).

Connected to persons' understanding of history are the common symbols they can identify. Research has shown that people wearing clothing that identifies their membership in a group can strengthen their identification with that group (Hausmann, Ye, Schofield, & Woods, 2009). For example, in the armed forces the training, uniform and traditions of this environment encourage a sense of belonging among its members

(Sargent et al., 2002). Additionally, university paraphernalia such as shirts, baseball caps and pens bearing the university name, logo and colours strengthens sense of belonging amongst students (Hausmann et al., 2009). These studies have shown that when the members have something in common, easily identifying themselves as being part of that group, their sense of belonging to that community is increased.

In regards to marital status, some research has determined that it does not contribute to the development of sense of belonging (Hagerty et al., 1992; Kissane & McLaren, 2006; McLaren et al., 2001). Other research, however, has found those in a marriage or partner situation experience more well-being as these forms of partnership offer a source of social support and act as a protective barrier against stress, increasing sense of belonging (Hagerty & Williams, 1999; Hagerty et al., 1996; Rankin et al., 2000). However, this is only the case if there is no conflict in the relationship as conflict provides little opportunity for the provision of support from one's partner, lowering sense of belonging (Hagerty & Williams, 1999; Rankin et al., 2000). Additionally, bereaved persons and divorcees experience a decline in mental health, social functioning and morale mainly due to social isolation, lowering their sense of belonging, further implying that the psychological well-being that a person achieves through marriage or partnered relationships enhances sense of belonging (Kissane & McLaren, 2006; McLaren et al., 2001).

Gender differences have been observed in that typically adolescent females report stronger sense of belonging than males (Brown et al., 2004; Goodenow, 1993a, 1993b; Gustafson, 2009; Hagerty et al., 1996; Newman et al., 2007; Osterman, 2000). Research has found that adolescent females value belonging to a group more than adolescent males and as a result identify more with their peer groups than males (Brown et al., 2004; Goodenow, 1993a, 1993b; Gustafson, 2009; Newman et al., 2007). From their peer group, females receive more nurturing and empathy, receive and undertake more self-disclosure and utilise ruminative coping more than males (Newman et al., 2007; Osterman, 2000). However, as females co-ruminate more than males, this makes them vulnerable to the distress of their peers. Therefore, while males may experience less benefit than females from the feeling of belonging, males are actually less vulnerable to the emotional distress that comes with high levels of disclosure and co-rumination from belonging to a group (McLaren et al., 2001; Newman et al., 2007; Osterman, 2000). However, adolescent males are vulnerable in a different way, in that if they do not feel accepted in the mainstream, they seek their own sense of belonging in a

more antisocial context such as ‘gangs’ (Beck & Malley, 1998; Chubb & Fertman, 1992). These antisocial groups have enormous appeal for an adolescent male, particularly as they often feel insecure about their masculinity (Beck & Malley, 1998; Chubb & Fertman, 1992). Therefore, the power from joining one of these groups, coupled with the provision of a sense of belonging, is a significant attraction (Beck & Malley, 1998; Chubb & Fertman, 1992).

Gender differences, however, are not so marked in adulthood (Freeman, Anderman, & Jensen, 2007; Hagerty et al., 1996; Ross, 2002). Very few studies examining sense of belonging in adults have found gender differences. For those that have, this is attributed to women in the sample being more involved in community activities and placing higher value on participation than men (Brown et al., 2004; Cameron & Butcher-Powell, 2006; Gustafson, 2009; Hagerty et al., 1996). This indicates that these women desire becoming involved in their environment (antecedent) and want to integrate within their environment (psychological) more than men (Brown et al., 2004; Gustafson, 2009; McLaren et al., 2001). This supports the previous discussion that community participation is an indicator of sense of belonging.

Some studies have found that older residents have higher levels of sense of belonging than younger residents (Gustafson, 2009; La Grange & Ming, 2001; Lewicka, 2005). This difference is quite marked when comparing adolescents with adults. A reason for the difference between adolescents and adults is that during adolescence young people are beginning to explore and discover who they are and wish to be (Goodenow, 1993b; Gustafson, 2009; Lewicka, 2005). By exploring their personal identity, young people, particularly females, rely more heavily on friendships and other non-kin relationship for support and direction (Goodenow, 1993b; Gustafson, 2009; Lewicka, 2005). Adults, however, move onto different life priorities such as marriage that brings with it its own sense of belonging as discussed earlier (Gustafson, 2009; Lewicka, 2005; Ross, 2002). Additionally, adults are more focussed on gaining employment and aspiring to own their homes (Gustafson, 2009; La Grange & Ming, 2001; Lewicka, 2005). Other research, however, has not found a significant relationship between age and sense of belonging (Hagerty et al., 1996).

Income level contributes to sense of belonging in that high-income level results in increased sense of belonging (Gustafson, 2009; Hagerty et al., 1996; La Grange & Ming, 2001), while low-income level results in a decreased sense of belonging, as

having a low income prevents the possession of desired material goods that the majority of the population are perceived to possess. As a result, low income earners consider they do not belong to this group, lowering their sense of belonging (Hagerty, Williams, & Oe, 2002). Low income also limits or prevents people from participating in activities promoting social integration, as they cannot afford the extra expense associated with these activities. This results in a perception of not fitting in, being different and not feeling important and valued, antecedents critical to the development of a sense of belonging (Hagerty et al., 2002).

Not surprisingly, home ownership is linked to higher levels of sense of belonging as it allows people to settle and facilitate a sense of security (Fox, 2002; La Grange & Ming, 2001). Renters may experience a lower status in the community and therefore, less sense of belonging (Harkness & Newman, 2003; Mallett, 2004). A tenant, unlike a homeowner, is often unable to adapt the rental dwelling to suit their needs and express their personal style, and coupled with a lack of security, reduces their sense of belonging (Harkness & Newman, 2003; Mallett, 2004). Therefore, tenure type has been closely associated with a sense of belonging with homeowners experiencing more positive outcomes than renters.

Some research has found no group differences in terms of ethnicity and sense of belonging (Hagerty et al., 1996), while other research that has found significant group differences, predominately when Whites are compared with African Americans (Hausmann et al., 2009). White individuals have been found to have higher levels of sense of belonging than African Americans. Based on a history of negative stereotyping African Americans often report heightened feelings of alienation particularly in a predominantly White environment (Hausmann et al., 2009). This perception of being different and not fitting in leads to lower levels of sense of belonging.

Another factor that has been examined in terms of its relationship to sense of belonging is education level. However, most research on education has examined adolescents and their sense of belonging in the school environment (Goodenow, 1993a, 1993b) or university/college students and their sense of belonging on campus (Freeman et al., 2007; Hausmann et al., 2009; Nunez, 2009). A search of the literature shows few studies have examined education level and its contribution to sense of belonging with a community sample (Hagerty et al., 1996; Kissane & McLaren, 2006; McLaren et al., 2001). These studies have only briefly mentioned that the phenomenon was examined

but the findings were not reported (Kissane & McLaren, 2006; McLaren et al., 2001). One study though did report that education level is not associated with sense of belonging but did not discuss further (Hagerty et al., 1996). Due to the lack of research on education level and sense of belonging in a community sample, this factor warrants further examination in this paper.

The number of people known in the community can also affect one's level of sense of belonging. It has been found that those who know few people in the community have a lower sense of belonging than those who know several people in the community (Itzhaky, 1997; Lev-Wiesel, 2003). The reason is that low levels of communication and interaction with others, results in them not feeling as though they belong to the community, nor do these individuals benefit from the social support that network friendships provide (Itzhaky, 1997; Lev-Wiesel, 2003).

Links to residential satisfaction.

One of the factors of residential satisfaction discovered in research is belongingness (Bardo & Dokmeci, 1990a; Hughey & Bardo, 1987; White, 1985). A person's sense of belonging to a community increases their residential satisfaction (Bardo & Dokmeci, 1990a; Hughey & Bardo, 1987; White, 1985). Individuals with a high sense of belonging form close associations with other community members; as a result, they are happier with their social relationships and are more positive toward their physical surroundings, increasing their level of residential satisfaction (Bardo, 1976; Bardo & Dokmeci, 1990a; Fried & Gleicher, 1961; Hughey & Bardo, 1987; White, 1985). It is this strong psychological involvement in the community, expressed through a strong sense of belonging, which provides a perception of the neighbourhood as a place of memories as well a place for future plans. This leads to a favourable evaluation of the community as well as the people encountered there, which increases the level of residential satisfaction experienced (Fluery-Bahi et al., 2008).

Summary of sense of belonging.

People with a high sense of belonging have better social and psychological functioning as belonging to a group gives them a sense of purpose, meaning and worth (Hagerty & Williams, 1999; Newman et al., 2007). Social, physical and personal factors such as community participation, fear of crime, community layout and design, length of residence and marital status have been shown to develop sense of belonging (Grillo et

al., 2010). By feeling that one belongs to a community they participate more in the community and form close associations with others (Grillo et al., 2010). By feeling a part of a group, they experience less isolation and loneliness resulting in higher levels of residential satisfaction.

A conceptually similar construct to sense of belonging is sense of place. Sense of place refers to the affective bonds a person has to a landscape, while sense of belonging refers more to the bonds that are constructed through significant experiences that occur in the landscape (Jones et al., 2000). For example, while one may feel attachment to a specific place in which they were raised, one may feel a sense of belonging to any place that looks and feels like home wherever it is located (Jones et al., 2000). The final construct, sense of place will now be discussed.

Sense of Place

Sense of place has been examined in a range of fields and areas such as rural and urban communities (Nelson & Preston, 2005; Post, 2008; Tonts & Atherley, 2010); communal settings (i.e., Kibbutz) (Casakin & Billig, 2009); parks, recreation and leisure (Jorgensen & Stedman, 2001, 2006; Kyle, Graefe, Manning, & Bacon, 2004); disaster areas (Orlando & Diaz, 2008); homelessness (Hodgetts et al., 2010); and places of employment (Inalhan & Finch, 2004; Rooney et al., 2010). In addition, sense of place has been examined in various groups such as older adults (Cuba & Hummon, 1993; Wiles et al., 2009); migrants and refugees (Shamai & Ilatov, 2005; Wen Li, Hodgetts, & Ho, 2010); ethnic groups (Shamai, 1991); and tourists (Kianicka, Buchecker, Hunziker, & Muller-Boker, 2006).

The construct sense of place, represents the affective (i.e., feelings and emotions), conative (i.e., commitments and behavioural intentions) and cognitive (i.e., beliefs and perceptions) domains towards a place (Butterworth, 2000; Cameron, 2003; Hodgetts et al., 2010; Jones et al., 2000; Jorgensen & Stedman, 2006; Pacione, 2005; Tonts & Atherley, 2010). Sense of place is based on the symbolic meanings attributed to the setting by an individual (Casakin & Billig, 2009; Hodgetts et al., 2010; Rooney et al., 2010; Stedman, 2003; Tonts & Atherley, 2010). Therefore, sense of place is not inherent to the physical setting, but rather in the interpretations of the setting by a person, which are developed from their experience within the community (Casakin & Billig, 2009; Hodgetts et al., 2010; Stedman, 2003; Tonts & Atherley, 2010).

Research has shown that a sense of place is created through the physical structure and the sociological makeup of the community (Billig, 2005; Kianicka et al., 2006; Tonts & Atherley, 2010; Warrick & Alexander, 1998). Sense of place is not created from the location itself but from the involvement between people and between people and place (Hodgetts et al., 2010; Jorgensen & Stedman, 2001; Pretty, Chipuer, & Bramston, 2003; Shamai & Ilatov, 2005; Tonts & Atherley, 2010). When a sense of place has developed it provides feelings of security, belonging and stability (Hay, 1998b; Hodgetts et al., 2010; Tonts & Atherley, 2010).

Sense of place is often referred to as the atmosphere of the place, the quality of the environment and the attraction of the place that causes a sense of well-being that helps bind community members together and also makes people want to return to the place (Billig, 2005; Tonts & Atherley, 2010; Williams, Patterson, Roggenbuck, & Watson, 1992). As a result, sense of place is not limited to the residents of the place, regular visitors and tourists can also develop a strong attachment to a place in that it symbolises an important experience (Kianicka et al., 2006; Williams & Stewart, 1998).

Theoretical model of sense of place.

Identity (Proshansky, Fabian, & Kaminoff, 1983), Attachment (Altman & Low, 1992) and Dependence (Stokols & Shumaker, 1981) are concepts which are subsumed under Sense of Place (Billig, 2005; Jorgensen & Stedman, 2001; Kianicka et al., 2006; Kyle et al., 2004; Shamai & Ilatov, 2005). While there is considerable overlap among these concepts, each one reflects different components of Sense of Place: the affective (Attachment), cognitive (Identity) and conative (Dependence) elements (Jorgensen & Stedman, 2001). Work in these areas has come from environmental psychology, social psychology, urban sociology, social ecology, human ecology, human geography and urban planning (Jiven & Larkham, 2003; Jorgensen & Stedman, 2006; Lalli, 1992; Shamai, 1991). Each of these concepts is addressed below.

Place identity.

Place identity is conceptualised in terms of the *cognitive* connection between a person and their physical environment (Inalhan & Finch, 2004; Kyle et al., 2004; Rooney et al., 2010; Wen Li et al., 2010; Wulfhorst, Rimbey, & Darden, 2006). It involves the dimensions that characterises a person's identity in relation to their physical environment (Rooney et al., 2010; Wen Li et al., 2010). This occurs as a result

of complex patterns of unconscious and conscious beliefs, goals, ideas and behavioural tendencies and skills (Pretty et al., 2003; Proshansky et al., 1983). The environment regulates social interaction as well as allows a person to create and maintain one's self (Williams et al., 1992). Place identity refers to the relationship of the person with a place, not the identity of the location itself (Lalli, 1992; Wen Li et al., 2010).

Four theoretical traditions influenced the psychological work on place identity (Bonnes, Lee, & Bonaiuto, 2003; Hauge, 2007). These are the cognitive perspective, self and self-concept theories, sociological influence and the phenomenological perspective (Bonnes et al., 2003; Hauge, 2007; Lalli, 1992). Within the cognitive perspective, there are two representations: *orientation-related* representation, which refers to peoples cognitive encoding of the spatial environment and; *meaning-related* representation, which refers to peoples evaluations of the environment (Bonnes et al., 2003; Hauge, 2007; Lalli, 1992). The difference between these representations are that one is focused on the 'whereness' (orientation) while the other focuses on the 'whatness' (meaning) in environmental cognition. While both are important in their contribution to place identity, the symbolic and evaluative components of the meaning related representation are considered to have more influence (Bonnes et al., 2003; Hauge, 2007; Lalli, 1992).

The self-concept and self theories explain that the self is the outcome of social differentiation processes mediated by social experiences. As a result, individuals are able to distinguish between themselves, others and the physical environment, which results in the development of their self-concept (Bonnes et al., 2003; Hauge, 2007; Lalli, 1992). Self-concept is the subjective representation of self and is a complex cognitive structure that organises self-referent cognitions, convictions and evaluations (Bonnes et al., 2003; Hauge, 2007). These theories focus on the cognitive aspects of self-concept resulting in the cognitive conceptualisation of place identity. Any emotional components are rarely taken into consideration (Bonnes et al., 2003; Hauge, 2007).

The sociological perspective focuses on the place and particularly the effects of migration, urbanisation and industrialisation, with these being seen as detrimental to society (Bonnes et al., 2003; Hauge, 2007; Lalli, 1992). Rural society is emphasised as the idyllic way to keep social relations intact while urbanisation, industrialisation and migration overburden the cognitive processing capacities of residents, resulting in relationships becoming distant (Bonnes et al., 2003; Hauge, 2007; Lalli, 1992).

Recently, these negative images are changing to more positive connotations (Bonnes et al., 2003; Hauge, 2007; Lalli, 1992). Sociological research also demonstrates that a place can be important for sharing meaning or group/cultural identity (Williams et al., 1992). Thus, place identity may be based on personal emotional ties such a favourite park when a child, or be based on more abstract and symbolic meanings, such as the way a national park symbolises the community's heritage (Williams et al., 1992).

The phenomenological perspective has contributed significantly to place identity research (Bonnes et al., 2003; Hauge, 2007; Lalli, 1992). This approach refers to the intentional interaction between the environment and a person's cognitive, behavioural and emotional activities (Bonnes et al., 2003; Hauge, 2007; Lalli, 1992). The two are not to be viewed as separate units but one binding unit (Bonnes et al., 2003; Hauge, 2007; Lalli, 1992). This approach emphasises the emotional attachment to the environment and focuses on the subjective experience of the environment (Bonnes et al., 2003; Hauge, 2007; Lalli, 1992).

Place attachment.

Place attachment refers to the bond between people and the environment, and as it contains the emotional context, it is described as the *affective* (emotional) structure (Inalhan & Finch, 2004; Jorgensen & Stedman, 2001; Lewicka, 2010; Stedman, 2003). While these central concepts of place attachment, emotions and bonding are also concepts of sense of community, the difference is that in sense of community, the cognitions are related to the social environment of the place only (Pretty et al., 2003). Sociological and psychological studies examining place attachment, link the subjective feelings toward the place with the behaviour of the person, in terms of social involvement and commitment of personal resources (Brown & Perkins, 1992; Jorgensen & Stedman, 2001; Stedman, 2003). Place attachment also involves the feelings of security associated with a specific geographical location or attribute (Jones et al., 2000).

It has been stated that attachment to a community is based on rootedness and bondedness (Eisikovits & Bornman, 2005; Hay, 1998a, 1998b; Mannarini & Fedi, 2009; Riger & Lavrakas, 1981; Shumaker & Taylor, 1983). Rootedness refers to the long habitation in one's locality, usually one's birthplace (Eisikovits & Bornman, 2005; Tuan, 1980). Rootedness also refers to living and working near one's family, a person's ownership of property in the area and their expectation to stay in the same residence

(Eisikovits & Bornman, 2005; Jones et al., 2000; Riger & Lavrakas, 1981; Shumaker & Taylor, 1983; Tuan, 1980). Bondedness is a person's feeling of being a part of the community, their ability to distinguish strangers from community members and the number of people they know in the community (Riger & Lavrakas, 1981; Shumaker & Taylor, 1983). These aspects of the physical and social environment influence the development of residential satisfaction.

Symbolic meanings strengthen and bind a person's attachment to place (Jiven & Larkham, 2003; Stedman, 2003; Wulfhorst et al., 2006). These provide a sense of meaning and quality that people (consciously and unconsciously) associate with a particular place (Jiven & Larkham, 2003; Stedman, 2003; Wulfhorst et al., 2006). These meanings can vary from person to person as well as across contexts (Wulfhorst et al., 2006).

Place dependence.

Place dependence is the strength of association between a person and a specific place (Jorgensen & Stedman, 2001; Pretty et al., 2003; Stokols & Shumaker, 1981). Dependence differs from attachment in that the strength of association can be negative, and the strength of the connection can be based on behavioural goals rather than general affect; therefore, it is described as the *conative* (behavioural) structure (Jorgensen & Stedman, 2001; Stokols & Shumaker, 1981). The two components of place dependence include the quality of the place in terms of the available physical and social resources to satisfying a person's goal directed behaviour; and how the place compares to alternative places (Kyle et al., 2004; Stokols & Shumaker, 1981). Therefore, the functional value of the place determines the importance of the place to the individual (Kyle et al., 2004).

Summary of the sense of place dimensions.

Some research indicates that the sense of place dimensions are associated with each other; however, they are distinct in their importance in predicting a person's identity with place (Lewicka, 2010; Pretty et al., 2003). Attempts to distinguish between these dimensions have indicated that each one reflects a different level of intensity of behaviour and feeling, ranging from alienation to complete identity such as attachment (special affinity), belonging (affiliation) and commitment (willingness to do something for the place) (Jorgensen & Stedman, 2001; Pretty et al., 2003). Another attempt to distinguish between the dimensions suggests that they have different theoretical

positions (Bonnes & Secchiaroli, 1995). That is, place dependence describes a person's internal representation of place in relation to their personal goal oriented behaviours. The social and physical resources in the place and the individual's personal comparison of the quality of life in their community compared to other communities support their goal oriented behaviour (Bonnes & Secchiaroli, 1995). Similarly, place attachment also implies an individualistic perspective, which is concerned with a person's behavioural and emotional commitment, or bonding to a place (Bonnes & Secchiaroli, 1995).

Methodology.

Sense of place is a complex construct that has been examined from non-positivist perspectives (e.g., phenomenological; ethnographic) (Billig, 2005; Kianicka et al., 2006; Ortiz, Garcia-Ramon, & Prats, 2004), as well as positivist (i.e., behavioural) approaches (Lalli, 1992; Shamai, 1991; Shamai & Ilatov, 2005). Phenomenological approaches to measure sense of place examine the interaction between person and environment and do not use empirical methods to 'test hypotheses' in a formal sense (Gustafson, 2001; Inalhan & Finch, 2004; Jorgensen & Stedman, 2001). As a result, phenomenological research asserts that concepts should be treated holistically, enabling a more intuitive, reflective assessment of the concept being studied, and believe dissecting a multi-dimensional concept may cause the essence of the overall concept to be lost (Hummon, 1992; Jorgensen & Stedman, 2001; Lewicka, 2010). Positivist research on the other hand, utilises quantitative methods, researcher defined variables and traditional hypothesis testing (Brown, Perkins, & Brown, 2003; Inalhan & Finch, 2004; Jorgensen & Stedman, 2001; Lewicka, 2010; Stedman, 2002). Common positivist scales that measure sense of place (i.e., Urban Identity Scale) (Lalli, 1992) have either component or dimension attributes, comprising uni-dimensional or multi-dimensional scales (Jorgensen & Stedman, 2001; Shamai & Ilatov, 2005; Williams et al., 1992).

The dominant belief among quantitative researchers is that sense of place is multi-dimensional (Casakin & Billig, 2009; Jorgensen & Stedman, 2001, 2006; Lewicka, 2010). However, some research, particularly from a phenomenological perspective, has found that sense of place is uni-dimensional (Hay, 1998a, 1998b; Shamai, 1991; Shamai & Ilatov, 2005). It is argued this is because these studies used measures that do not distinguish between the three dimensions of place, they ignored the multidimensionality of the concept, or did not address it adequately (Jorgensen & Stedman, 2001, 2006).

The earliest study to examine the intensity of sense of place was research by Hay (1998b). Previous studies (Goudy, 1982; Hummon, 1992; Kasarda & Janowitz, 1974; Riger & Lavrakas, 1981) focused only on those who lived in the region; however, Hay (1998b) included those with a superficial or partial sense of place such as tourists, holiday home owners and children of local residents. Employing qualitative research methods, Hay (1998b) examined a person's attachment for the place, the importance of localised ancestry, the role of being an insider and their motivation to remain in that place. By including and measuring ancestry and insider status, Hay's (1998b) measure was more representative of sense of place than previous measures (Jorgensen & Stedman, 2001).

One of the first comprehensive studies to examine the dimensionality of sense of place was conducted by Jorgensen and Stedman (2001). They examined whether sense of place encompasses the concepts of Attachment, Identity and Dependence making it a multi-dimensional construct. An attitude framework was utilised as they considered sense of place an attitude, as Attachment, Identity and Dependence share strong similarities to the components of attitude (affective, cognitive and conative). That is, the affective component of attitude and place attachment are related; the cognitive domain is linked to place identity in that a place is part of an individual's sense of self; and the conative domain signifies place dependence in that a person's setting is relative to the behaviours they perform (Jorgensen & Stedman, 2001).

A 12-item sense of place scale was administered by Jorgensen and Stedman (2001) to 282 community members. The findings indicated that the scale measured sense of place in terms of thoughts, emotions and behavioural beliefs. Also found was three univariate dimensions consistent with Attachment, Identity and Dependence. To assess the construct validity of this scale, one uni-dimensional model and four multi-dimensional models were measured. Results indicated that the uni-dimensional model had the poorest fit. As a result, the single factor model was rejected. This study demonstrated that affective, cognitive and conative elements were not interchangeable variables, supporting the dominant belief that sense of place is multi-dimensional.

Factors impacting on sense of place.

Similar to the other constructs examined in this paper, predictors of sense of place are categorised into social, physical and personal factors. Social factors include

aspects such as feelings of belonging to the community, attachment to the community and community participation. Physical factors include aspects such as community layout and design, crime rate and housing density. Personal characteristics refer to a person's age, ethnicity, tenure (i.e., renting or home owner), length of residence, number of people known in the community, marital status, education level, gender and household income. The impacts of these factors on sense of place are discussed below.

Social factors.

Community involvement provides opportunities for people to socialise and form bonds, which in turn increases a sense of place (Hay, 1998b; Jorgensen et al., 2007; Kianicka et al., 2006; Post, 2008; Sampson, 1988; Semenza & March, 2009; Shamai & Ilatov, 2005). Sense of place is enhanced because residents perceive the community as having a social environment, which results in them being more likely to engage in community activities (Post, 2008; Semenza & March, 2009; Stedman, 2003). It has also been found that residents with children are more likely to participate in the community and form social ties, as they have stronger connections to their community through their children (Mesch & Manor, 1998; Riger & Lavrakas, 1981; Semenza & March, 2009). As a result, residents with children experience more sense of place than residents without children (Riger & Lavrakas, 1981; Semenza & March, 2009).

Within communities, developing friendship networks through community involvement increases a person's level of social support (Lewicka, 2010; Mesch & Manor, 1998; Semenza & March, 2009). This external social support can include emotional support such as advice about problems and companionship, as well as instrumental support such as lending and borrowing household items (Mesch & Manor, 1998; Semenza & March, 2009). The existence of social support enables a person to feel supported socially and emotionally by other community members and that they belong in the community, resulting in higher levels of sense of place (Hay, 1998a, 1998b; Lewicka, 2010; Mesch & Manor, 1998; Semenza & March, 2009).

Therefore, belongingness also enhances a sense of place (Hay, 1998a, 1998b; Mellor et al., 2008; Semenza & March, 2009; Vanclay, 2008; Wen Li et al., 2010). Longer-term residents develop feelings of belonging through the familiarity of the community, the result of residing within it for many years. As a result, they experience higher levels of sense of place (Wiles et al., 2009). Conversely, newer community

members may feel excluded by longer-term community members as a result, that they do not belong, leading to a lower sense of place (Kianicka et al., 2006; Ortiz et al., 2004; Wen Li et al., 2010).

As well as belonging to a community, strong attachment to the surrounding physical landscape or local community can enhance one's sense of place (Clark & Stein, 2003; Cuba & Hummon, 1993; Lewicka, 2010; Sampson, 1988; Wasserman, 1982; Wulfhorst et al., 2006). Attachment to a community increases the longer a person resides in the community (Brown et al., 2003; Clark & Stein, 2003; Lewicka, 2010; Sampson, 1988; Wulfhorst et al., 2006); the more satisfied a person is with their community (Wasserman, 1982); and when residents have minimal or no fear of crime in the community (Lewicka, 2010; Sampson, 1988). Residents attached to their community invest more time into the neighbourhood and interact more with neighbours increasing social cohesion and sense of place (Lewicka, 2010; Manzo & Perkins, 2006; Wen Li et al., 2010).

Physical factors.

The physical attributes of a place (i.e., landmarks) such as historical sites, shopping centres, gardens, parks and lakes enhance a sense of place (Green, Barclay, & McCarthy, 1985; Jiven & Larkham, 2003; Jorgensen et al., 2007; Jorgensen & Stedman, 2006; Lewicka, 2010; Post, 2008; Semenza & March, 2009). The characteristics of the physical environment effect sense of place through symbolic place meaning (Jorgensen & Stedman, 2001; Semenza & March, 2009; Stedman, 2003; Wen Li et al., 2010). Therefore, only landmarks that residents identify with contribute to sense of place, as these are meaningful to the residents and help shape their perceptions of their community (Green et al., 1985; Jorgensen et al., 2007; Lewicka, 2010; Semenza & March, 2009; Wen Li et al., 2010). Visual diversity is also associated with sense of place (Green et al., 1985; Semenza & March, 2009). By emphasising cultural, physical and biological attributes unique to the place, the identity and character of the place is enhanced (Green et al., 1985; Semenza & March, 2009; Wen Li et al., 2010). Therefore, communities that are designed to be visually distinct and diverse provide a more pleasing visual experience, which increases a sense of place (Green et al., 1985; Semenza & March, 2009).

Community layout and design can influence the level of sense of place experienced in a community (Jorgensen et al., 2007; Lewicka, 2010; Post, 2008; Semenza & March, 2009). For example, the provision of community services such as schools, churches, sporting facilities and open spaces; roads that are curvilinear rather than a grid design; and specialised roads such as cul-de-sacs and lanes make roads safer, encouraging residents out of their homes (Jorgensen et al., 2007; Lewicka, 2010; Post, 2008; Semenza & March, 2009). As a result, residents interact and participate in their community, forging relationships with other community members, fostering a sense of place (Lewicka, 2010; Post, 2008; Semenza & March, 2009).

Generally, the aesthetic appeal of the street landscape and high quality housing in an area contributes to the visual as well as social appeal of the community (Brown et al., 2003; Jorgensen et al., 2007; Lewicka, 2010; Semenza & March, 2009). However, studies have shown that even in communities with poor housing quality, if residents are attached to their community, an increased sense of place can be experienced (Brown et al., 2003; Fried & Gleicher, 1972; Lewicka, 2010; Semenza & March, 2009). For example, results suggested that when people in areas with poor housing quality are forced out of their homes for urban renewal, those attached to the community often grieve for years about losing their home and the neighbourhood (Fried & Gleicher, 1972). Additionally, in places where housing quality is high, if there are no opportunities for residents to develop a place attachment then low levels of sense of place are experienced (Brown et al., 2003). Therefore, the importance of attachment, despite the quality of housing in an area, appears to contribute to the development of sense of place rather than housing quality alone (Brown et al., 2003; Lewicka, 2010).

Residents fear of crime in their community can affect the level of sense of place experienced (Brown et al., 2003; Lewicka, 2010; Manzo & Perkins, 2006; Mesch & Manor, 1998; Sampson, 1988; Taylor, Gottfredson, & Brower, 1984). Fear of crime restricts residents to their homes, reducing their involvement in community events and activities and their use of public facilities (Brown et al., 2003). As a result, residents become less attached to their community and may experience a lower sense of place (Lewicka, 2010).

Personal factors.

Research has identified that length of residence enhances the development of a sense of place (Bonaiuto et al., 1999; Brown et al., 2003; Brown et al., 2004; Hay, 1998a, 1998b; Hummon, 1992; Lewicka, 2010; Oswald, Hiever, Wahl, & Mollenkopf, 2005; Shamai & Ilatov, 2005). Longer-term residents experience more sense of place than newer residents as they have resided longer in the community and as a result, have developed significant relationships with other residents (Hay, 1998a, 1998b; Jorgensen & Stedman, 2006; Lewicka, 2005; Ortiz et al., 2004; Shamai & Ilatov, 2005; Wen Li et al., 2010). Additionally, they are more familiar and intimate with the community; and feel more 'at home', secure and that they belong (Hay, 1998a, 1998b; Hummon, 1992; Lewicka, 2005; Ortiz et al., 2004; Wen Li et al., 2010; Wiles et al., 2009). Longer-term residents also have higher rates of attachment and identity, components of sense of place (Fluery-Bahi et al., 2008; Goudy, 1990; Lewicka, 2005; Ortiz et al., 2004; Pretty et al., 2003; Wen Li et al., 2010; Wiles et al., 2009). Newer residents, however, may still have a connection to their previous place of residence, reducing their sense of place to the newer community (Hay, 1998a, 1998b; Ortiz et al., 2004; Wen Li et al., 2010).

The number of people known in the community is significant for the development of sense of place in that the more friends a person has in the community, the more attached they are (Cuba & Hummon, 1993; Goudy, 1982; Hay, 1998b; Kianicka et al., 2006; Mesch & Manor, 1998; Sampson, 1988; Semenza & March, 2009; Wen Li et al., 2010). Social networks are important as they provide external social support (Hay, 1998a, 1998b; Mesch & Manor, 1998; Semenza & March, 2009; Wen Li et al., 2010). The presence of children in the home also increases the number of people known in the community as their schooling and extra-curricular activities often provide a means in which to engage in local friendships (Mesch & Manor, 1998; Sampson, 1988; Semenza & March, 2009). Length of residence also influences the local friendships bonds in that the longer a person resides in the area the more likely they are to have a number of friends in the community (Sampson, 1988; Wen Li et al., 2010).

Interestingly, studies have shown that age is a predictor of a sense of place (Cuba & Hummon, 1993; Goudy, 1982; Lewicka, 2010; Mesch & Manor, 1998; Nanzer, 2004; Schwirian & Schwirian, 1993; Shamai & Ilatov, 2005; Wiles et al., 2009). As people age, their attachment to a place strengthens as they tend to consider place in terms of geographical places or the immediate home setting, increasing their

sense of place (Cuba & Hummon, 1993; Hay, 1998b; Jorgensen & Stedman, 2006; Lewicka, 2010; Sampson, 1988; Schwirian & Schwirian, 1993; Shamai & Ilatov, 2005; Wiles et al., 2009). Age, however, has not been found to contribute to the development of sense of place in a study by Oswald et al. (2005); however, they did not provide any critical analysis of this finding.

Homeownership has been found to be positively correlated with sense of place in that homeowners experience more attachment to a community than renters and hence have higher levels of sense of place (Bolan, 1997; Brown et al., 2003; Hay, 1998b; Lewicka, 2010; Mesch & Manor, 1998). Homeowners often reside in a community longer, know more community members and participate in the community thus, promoting stronger levels of sense of place (Bolan, 1997; Brown et al., 2003; Hay, 1998b; Lewicka, 2010; Mesch & Manor, 1998). However, one study by Oswald et al. (2005) found that tenure type is not significantly related to sense of place but did not provide further discussion.

Few studies have examined the impact of income level on sense of place. Some have reported that income level does not contribute to the development of a sense of place (Brown et al., 2003; Fried, 2000; Lewicka, 2005); while others have reported that income does contribute to the development of sense of place (Goudy, 1982; Nanzer, 2004; Williams et al., 1992). Goudy (1982) found that people with low and high income levels are more attached to their community than people with middle income levels; however, did not provide further discussion. Williams et al. (1992) also reported that people with lower levels of income were more attached to their community but not people with higher levels of income. Again, no further discussion was provided. Nanzer (2004), however, found that the higher the income level, the lower the level of sense of place but with no further discussion being provided. Due to the limited studies in this area, further investigation of this factor and its impact on sense of place is warranted.

Additionally, the education level of a community sample and its impact on sense of place has rarely been examined. Studies that considered education level briefly mention it was examined but did not report any findings (Fried, 2000; Green, 1995; Mesch & Manor, 1998; Shamai & Ilatov, 2005; Wasserman, 1982). Studies in which findings were reported suggested that education level is not associated with sense of place but no further discussion was provided (Fried, 2000; Goudy, 1982; Lewicka, 2005, 2010). Williams et al. (1992), however, reported that people with lower education

levels had stronger attachment to the community, leading to higher levels of sense of place but did not critically analyse this finding. Due to the lack of research on education level and sense of place in a community sample, this factor also warrants further examination.

Ethnicity has been found to influence the level of sense of place experienced (Nanzer, 2004; Wasserman, 1982). Most studies have compared the experiences of Black people with White people. Generally, it has been found that Black people are less attached to their community and as a result, experience less sense of place than White people. Explanations suggest that Black people are afforded less economic opportunity; are seen as racially inferior; and usually live in lower socio-economic areas (Brown et al., 2003; Wasserman, 1982). One study, however, compared White and Hispanic people and found that non-Hispanics experienced less sense of place (Brown et al., 2003). The researchers indicated that this result was unexpected because traditionally research has found that White people experience higher levels of sense of place (Nanzer, 2004; Wasserman, 1982). While they could not explain this finding, they did suggest that perhaps the White residents developed lower levels of sense of place as more Hispanics moved into the area. Past research has shown that attachments are higher in neighbourhoods where racial groups are similar. With a new racial group moving into the area, the original racial group develops less attachment to the community as they see their community changing, with some even viewing it as their cultural history and identity being eroded (Brown et al., 2003; Manzo & Perkins, 2006).

While marital status has been found to be a significant factor towards the development of residential satisfaction (Hourihan, 1984; Lu, 1999), sense of community (BeLue et al., 2006; Prezza et al., 2009) and sense of belonging (Kissane & McLaren, 2006; McLaren et al., 2001), few studies have examined marital status and sense of place in a community sample. Some studies briefly mention marital status as being examined but do not report the findings (Mesch & Manor, 1998; Wasserman, 1982). As a result, further investigation on the impact of marital status on sense of place warrants further examination to determine if it is a contributing factor towards the development of sense of place.

Another area in which few studies have been conducted is the role of gender and a sense of place. Some studies reported that gender is not related to sense of place; however, no further critical analysis of this result was presented (Brown et al., 2003;

Lewicka, 2010; Nanzer, 2004; Oswald et al., 2005). One study, however, did report that they could not present any definite findings as 75% of the sample were women and suggested that further investigation on the impact of gender on sense of place is needed (Pretty et al., 2003). Based on this study and the limited research available in this area, the impact of gender on sense of place will be further examined in this paper.

Links to residential satisfaction.

The components of sense of place: Identity, Attachment and Dependence result in the development of residential satisfaction (Aiello et al., 2010; Bonaiuto et al., 1999; Brown et al., 2005; Fluery-Bahi et al., 2008; Grillo et al., 2010; Lalli, 1992; Mesch & Manor, 1998; Proshansky et al., 1983; Semenza & March, 2009). Place identity influences residential satisfaction through a person's ability to define their personal identity in relation to their physical environment (Kyle et al., 2004; Mellor et al., 2008; Pretty et al., 2003; Rooney et al., 2010; Semenza & March, 2009; Wen Li et al., 2010; Wulfhorst et al., 2006). If the environment of the community promotes social interaction and allows a person to create and maintain one's self, they identify with the community (Cuba & Hummon, 1993; Inalhan & Finch, 2004; Mellor et al., 2008; Proshansky et al., 1983; Puddifoot, 1994; Rooney et al., 2010; Wen Li et al., 2010; Williams et al., 1992; Wulfhorst et al., 2006; Young et al., 2004). As a result, they are generally more satisfied with their social relationships and physical surroundings, leading to the development of residential satisfaction (Inalhan & Finch, 2004; Kyle et al., 2004; Lalli, 1992; Mellor et al., 2008; Puddifoot, 1994; Rooney et al., 2010; Semenza & March, 2009; Wen Li et al., 2010; Wulfhorst et al., 2006; Young et al., 2004).

Additionally, place attachment influences residential satisfaction (Grillo et al., 2010; Hughey & Bardo, 1987; Semenza & March, 2009; Wasserman, 1982). An individual develops an attachment to their community through their social (i.e., relationships), economic (i.e., homeownership) and temporal (i.e. length of residence) investments within the community (Amerigo & Aragonés, 1997; Bonaiuto et al., 1999; Brown et al., 2005; Bruin & Cook, 1997; James et al., 2009; McCrea et al., 2005; Potter & Cantarero, 2006). Depending on the strength of attachment to the community, this influences the amount of residential satisfaction experienced (Bonaiuto et al., 1999; Grillo et al., 2010; Hughey & Bardo, 1987; Mellor et al., 2008; Mesch & Manor, 1998; Potter & Cantarero, 2006; Puddifoot, 1994; Semenza & March, 2009).

Place dependence influences residential satisfaction via the functional value of the place, as deemed by the resident, and determines the importance of the place to the individual (Bonnes & Secchiaroli, 1995; Jorgensen & Stedman, 2001; Kyle et al., 2004; Pretty et al., 2003; Stokols & Shumaker, 1981). A person compares their community to alternative places and if deemed able to meet and satisfy their goals and needs through the provision of quality physical and social resources, residential satisfaction is developed (Bonnes & Secchiaroli, 1995; Jorgensen & Stedman, 2001; Kyle et al., 2004; Pretty et al., 2003; Stokols & Shumaker, 1981).

Summary of sense of place.

Sense of place is important as it results in a sense of well-being that binds community members together and makes people want to return to the place (Billig, 2005; Seddon, 1994; Tonts & Atherley, 2010; Williams et al., 1992). Sense of place is a multi-dimensional construct comprising of the components of Dependence, Identity and Attachment, which increase residential satisfaction (Altman & Low, 1992; Casakin & Billig, 2009; Fullilove, 1996; Jorgensen & Stedman, 2001, 2006; Lewicka, 2010; Proshansky et al., 1983; Semenza & March, 2009; Stokols & Shumaker, 1981). Social, physical and personal factors such as community involvement, community layout and design, low crime rate and length of residence have been associated with the development of sense of place.

Chapter Summary

The interrelation of sense of community, sense of belonging and sense of place and their impact on residential satisfaction has not previously been investigated despite models of residential satisfaction alluding to the links between these concepts (Bardo & Hughey, 1984; Filkins et al., 2000; Garcia et al., 1999; Vreugdenhil & Rigby, 1987). These links can be seen in that sense of community encourages neighbouring relations and enhances one's perception of group and personal empowerment (Chavis & Wandersman, 1990; Jorgensen et al., 2010). Sense of community can also mediate the perception of community problems, resulting in more positive impressions which may lead to neighbourhood growth and stability and greater satisfaction with the community (Chavis & Wandersman, 1990; Glynn, 1981, 1986; Hur & Morrow-Jones, 2008; Jorgensen et al., 2010; Mesch & Manor, 1998; Perkins et al., 1990; Pretty et al., 1996; Prezza et al., 2001; Prezza & Costantini, 1998).

Regarding sense of belonging, individuals with a high sense of belonging form close associations with other community members, and as a result are happier with their social relationships and are more positive toward their physical surroundings (Bardo, 1976; Bardo & Dokmeci, 1990a; Fluery-Bahi et al., 2008; Fried & Gleicher, 1961; Hughey & Bardo, 1987; White, 1985). The links can also be seen in sense of place, in that the more attached a person feels to the community and identifies with it, the more satisfied with their social relationships and physical surroundings (Aiello et al., 2010; Brown et al., 2005; Fluery-Bahi et al., 2008; Grillo et al., 2010; James et al., 2009; McCrea et al., 2005; Mellor et al., 2008; Potter & Cantarero, 2006; Semenza & March, 2009; Young et al., 2004). Examination of the relationship between these concepts will assist in providing a comprehensive picture of the community phenomena.

Additionally, residential satisfaction, sense of community, sense of belonging and sense of place are complex concepts that are dependent on a range of physical, social and personal factors. These factors are intertwined to influence the level of residential satisfaction, sense of community, sense of belonging and sense of place experienced. For example, the physical characteristics of the community, such as the provision of adequate and safe public open spaces, may influence the establishment of social interaction, resulting in residential satisfaction (James et al., 2009; Young et al., 2004); or a sense of belonging to a community increases community participation and development of social ties, thereby reducing isolation and loneliness, and resulting in residential satisfaction (Grillo et al., 2010; Hagerty & Williams, 1999; Newman et al., 2007). Therefore, to assess residential satisfaction, sense of community, sense of belonging and sense of place adequately these physical, social and personal factors need to be simultaneously measured (Bardo & Bardo, 1983; Grillo et al., 2010; Hagerty & Williams, 1999; James et al., 2009; Newman et al., 2007; Young et al., 2004).

Research Questions

The present study aims to examine residential satisfaction, sense of community, sense of belonging and sense of place within the planned community of Ellenbrook in Western Australia. It also aims to investigate the factors that comprise residential satisfaction, sense of community, sense of belonging and sense of place; and to investigate the relationship between residential satisfaction, sense of community, sense of belonging and sense of place in Ellenbrook.

The research questions for this study were:

1. What is the sense of community within Ellenbrook?
2. What is the sense of belonging within Ellenbrook?
3. What is the sense of place within Ellenbrook?
4. What is the level of residential satisfaction within Ellenbrook?
5. What builds residential satisfaction, sense of community, sense of belonging and sense of place in a planned community?
6. What factors comprise residential satisfaction, sense of community, sense of belonging and sense of place?
7. What is the relationship between residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook?

Chapter 3

Method

Plan of the Chapter

This chapter initially outlines the methodological issues of the study, such as a need for a theoretical and inductive approach to examine the relationship between residential satisfaction, sense of community, sense of belonging and sense of place. This is followed by the community profile of the setting for the current study in which information on the State of Western Australia; Perth the capital city of Western Australia; and Ellenbrook a suburb situated in the Perth Metropolitan area is presented. Additionally, a description of each village within Ellenbrook is also presented. The demographic information of the participants in this study then follows outlining aspects such as marital status, age, ethnicity and income level. The instruments utilised in this study: the *General Community Satisfaction Scale (GCSS)* (Vreugdenhil & Rigby, 1987); *Neighborhood Cohesion Instrument (NCI)* (Buckner, 1988); *Sense of Place Scale (SOPS)* (Obst et al., 2002b); and *Sense of Belonging Instrument (SOBI)* (Hagerty & Patusky, 1995) are discussed. The chapter concludes with the ethical considerations and an outline of the procedure undertaken in this study.

Methodological Issues

As there is little research investigating the relationship between residential satisfaction and sense of community, sense of belonging and sense of place it was determined that a theoretical and inductive approach was needed. It was decided to examine these concepts within Ellenbrook, a planned community, as the developers promoted it as a suburb with a sense of community, sense of belonging and sense of place. Additionally, no research has investigated if these concepts were actually developed within Ellenbrook hence warranting further investigation into whether these concepts developed as the planners had intended.

Another issue is that diverse approaches have been utilised to understand sense of place (Jorgensen & Stedman, 2001). Sense of place research and theory is divided into positivistic and phenomenological approaches (Billig, 2005; Kianicka et al., 2006; Lalli, 1992; Ortiz et al., 2004; Shamai & Ilatov, 2005). Positivistic research, examines

researcher defined variables, utilises quantitative methods to test hypotheses and examines a concept, such as sense of place, through precisely defined and measurable dimensions (Inalhan & Finch, 2004; Lalli, 1992; Pretty et al., 2003). The phenomenological approach addresses the intentional interaction between person and environment without using any formal empirical methods to examine hypotheses (Aiello et al., 2010; Lalli, 1992). Theorists utilising the phenomenological approach to examine sense of place make strong claims about the nature of this concept, in that attachment develops over time and is strongly based on relationships with people in the setting, rather than the physical environment (Jorgensen & Stedman, 2001). Places where people have had vast experiences are where they are the most attached (Jorgensen & Stedman, 2001). While these statements suggest testable hypotheses, the phenomenological approach treats concepts holistically rather than examining a multidimensional concept for fear the essence of the overall concept will be lost (Aiello et al., 2010; Lalli, 1992). As a result, there is very little research on sense of place that has utilised quantitative methods and those that have, have not adequately reflected theoretical imperatives, specifically with regard to the multi-dimensionality of the sense of place concept (Jorgensen & Stedman, 2001; Lalli, 1992). Therefore, a quantitative analysis will be undertaken to examine the multi-dimensionality of sense of place.

Additionally, despite research on sense of place, it has been noted (Brown et al., 2003; Lewicka, 2010; McAndrew, 1998) that there are few systematic and psychometrically sound studies that have examined predictors of sense of place. As a result, this warrants investigation. Therefore, in this study the predictors of sense of place will be examined to provide a contribution to this area.

Further, it is claimed that at times, sense of place literature is unclear and unstructured (Jorgensen & Stedman, 2006; Stedman, 2003). This has resulted in barriers to integrate sense of place with areas such as policy development, to deal with ongoing concerns (Jorgensen & Stedman, 2006; Stedman, 2003). The lack of clarity and structure is also seen in the place dimensions typically subsumed under sense of place: Identity (Proshansky et al., 1983), Attachment (Altman & Low, 1992) and Dependence (Stokols & Shumaker, 1981). Confusion among these dimensions occurs in that there is considerable overlap between them in the literature (Goudy, 1990; Stinner & van Loon, 1992). For example, aspects of Identity are described as being emotional ties and affiliation with a place (Cuba & Hummon, 1993), which is similar to definitions of Attachment (Altman & Low, 1992; Jorgensen & Stedman, 2006; Pretty et al., 2003).

Clarity in understanding how the dimensions of sense of place are produced and organised will enhance the effective use of this concept and assist in providing solutions to ecological and social issues (Jorgensen & Stedman, 2006; Stedman, 2003).

Research does not distinguish adequately among the concepts of sense of place, sense of belonging and sense of community. For example, Attachment is described in terms of emotional bonding and behavioural commitment (Brown & Perkins, 1992) which is similar to the fulfilment of needs and emotional connection components of sense of community (McMillan & Chavis, 1986). Confusion also pertains as to whether belonging is subsumed under sense of community or whether it is a unique concept, sense of belonging (Bramston et al., 2002; Hagerty & Patusky, 1995; Hagerty et al., 1996; Hagerty, 1999). Due to these methodological issues, further investigation is warranted to provide clarity.

This overlap of conceptual boundaries may result from a lack of precise operational definitions used to study these concepts formerly (Jorgensen & Stedman, 2006; Pretty et al., 2003). The common loadings of items on different subscales show a high degree of commonality among these concepts. There have been attempts to address this problem and develop better measures and models (e.g., Cuba & Hummon, 1993; Jorgensen & Stedman, 2001; Lalli, 1992; Obst et al., 2002a, 2002b, 2002c; Puddifoot, 1994, 2003) and while this has resulted in further complexity and expansion, little progress has been made in empirically and conceptually clarifying the concepts.

As a result of these methodological issues, a quantitative approach will be utilised to assess residential satisfaction, sense of community, sense of belonging and sense of place as separate concepts to determine if they are theoretically different phenomena, and the extent of their relationship. An inductive approach may provide data and insights to enhance the existing theories on the concepts under study that can guide future research in this area.

In summary, the purpose of this study is to investigate the relationship between residential satisfaction, sense of community, sense of belonging and sense of place within the planned community of Ellenbrook in Western Australia. Additionally, while much theoretical and empirical development of these constructs has occurred over the years, there is still debate over the dimension, meaning and nature of these concepts. Therefore, this study will also investigate the structure of these constructs and the extent to which they measure residential satisfaction.

Community Profile

Western Australia is the largest state within Australia (see Figure 8) comprising 2,529, 875 km² of Australia's total land area of 7,686,850 km², and covers the western third of the mainland (Government of Western Australia, n.d). Bordering Western Australia are South Australia and the Northern Territory. The capital of Western Australia is Perth (founded in 1829 by British settlement) which is situated on the south western coastline along the Swan River, having an area of 5,386 km² (Government of Western Australia, n.d). The metropolitan area of Perth extends from Mandurah in the south to Yanchep in the north, a distance of approximately 125km by road, and from Mundaring in the east to the coast in the west, a distance of approximately 50 km by road (Government of Western Australia, n.d). Perth is generally flat with some rolling land due to the large amount of deep bedrock and sandy soils.

Perth is the most isolated capital city in the world with approximately three quarters (1.433 million) of the state's population (2.29 million) being located within the Perth metropolitan area (Australian Bureau of Statistics, 2010; Government of Western Australia, n.d). The Central Business District (CBD) is the commercial centre of Perth, with businesses, hotels, cafes, restaurants, shops, banks, churches, accommodation, historic building, theatres, concert hall and skyscrapers. All are located within a 3 kilometre radius from the centre of the CBD (City of Perth, n.d.).

Ellenbrook (see Figure 9 and Figure 10) is situated 20km from the Perth CBD in the north-east corridor of the Perth metropolitan area in the municipal locality of the City of Swan. Ellenbrook is on the Metropolitan fringe and is surrounded by parkland and lakeside landscaping as well as a National Forest. Ellenbrook is a joint venture between a private property developer (Morella Pty Ltd) and a State government organisation (The Department of Housing and Works) and was developed specifically to promote a sense of community, a sense of belonging and a sense of place for all residents in the suburb. These concepts are promoted to potential future residents via the use of terms such as sense of security, sense of belonging, community spirit and sense of community.



Figure 8. Map of Western Australia.

From 'State Map,' by Landgate, 2009, <http://www.landgate.wa.gov.au>. Copyright 2009 by Western Australian Land Information Authority. Reprinted with permission.

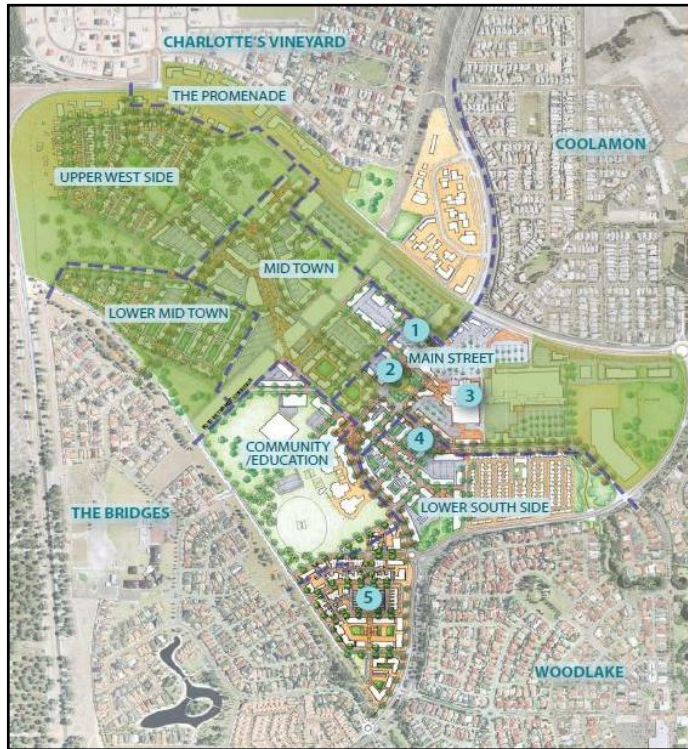


Figure 9. Map of Ellenbrook.

From 'Ellenbrook Map,' by LWP (Land Developers), 2009,

<http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.



Figure 10. Aerial map of Woodlake and The Bridges – Ellenbrook.

From 'Ellenbrook Map,' by LWP (Land Developers), 2009,

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The developers' vision for Ellenbrook is a return to an 'old fashioned sense of community' where all community members feel they belong, are cared for and are safe and secure. The atmosphere of the community is friendly, relaxed and appealing (see Figure 11) (Urban Development Institute of Australia, n.d.). The developers promote Ellenbrook as providing all these positive aspects which they believe have diminished in many other urban areas and are aspects synonymous with rural communities (Urban Development Institute of Australia, n.d.). It is this return to 'traditional community living' that has attracted many people to Ellenbrook (Parkerville Children's Home, n.d.). Additionally, the provision of a Community Development Officer by the City of Swan during the early stages of Ellenbrook's development, attracted residents (Parkerville Children's Home, n.d.). The Community Development Officer worked with residents to establish playgroups, toy libraries and sporting and community clubs, which have provided opportunities for residents to meet and feel a part of the community, and currently still continues. The design of Ellenbrook brings the community together through cultural integration, caters to the vast range of community members and their requirements, and encourages opportunities to engage in activities such as walking, bike riding and shopping by having amenities within walking distance and annual events such as the family bike and hike day (City of Swan, 2004).



Figure 11. Entrance to Ellenbrook.

From 'Ellenbrook Entrance,' by LWP (Land Developers), 2009,

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Ellenbrook consists of seven villages, Woodlake (released 1995), The Bridges (released 1997), Coolamon (released 2000), Morgan Fields (released 2001), Charlotte's Vineyard (released 2002), Malvern Springs (released 2007) and Lexia (released 2010). Each village varies in size, can accommodate between 3,000 and 7,000 people, and offers a variety of home sites from cottage to traditional and large country homes. Each village is unique and distinguished by a different architectural style. For example, Woodlake has an Australian colonial/heritage appearance; The Bridges has a Mediterranean style, while Coolamon consists of a contemporary Australian style.

Woodlake was designed to capture community spirit traditionally found in rural areas. It surrounds a picturesque lake (see Figure 12) whose shore boasts an amphitheatre (see Figure 13). These hold much significance for the residents and are easily identifiable, thus promoting a sense of place. The architectural style is reminiscent of Australia's heritage and the village design ensures residents live a short walk from the village centre, which consists of shops and cafes. This design promotes a sense of place, sense of belonging and sense of community, as residents are more likely to interact and engage with other community members.



Figure 12. Lake situated within Woodlake Village.

From 'Woodlake Village Photograph,' by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.



Figure 13. Amphitheatre within Woodlake Village.

From ‘Woodlake Village Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.

The Bridges consists of a Mediterranean theme that is complemented by bridges and parks. The central focus of the village is a 10-metre tower overlooking the village and lake (see Figure 14). As with Woodlake, this monument holds much significance for the residents and is easily identifiable, thus promoting a sense of place. To complement the village’s Mediterranean style, all dwellings adhere to guidelines ensuring these homes have a Mediterranean appearance thereby creating a peaceful village lifestyle.



Figure 14. Tower, lake and island parkland within The Bridges.

From ‘The Bridges Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.

Coolamon is designed with an Australian contemporary theme in response to the Australian climate. As a result, the housing design is inspired by the classic Australian homestead: steeply pitched roof, sun-smart eave and verandah. The colours of the Australian natural landscape and Australian architectural heritage inspire the street layout and design. Coolamon lookout, to view the Darling Ranges east of Ellenbrook is a feature that is identifiable and holds significance to residents (see Figure 15).



Figure 15. Coolamon lookout.

From ‘Coolamon Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.

Morgan Fields is situated on the edge of Ellenbrook alongside the rural community of Henley Brook (see Figure 16). This village was designed as a link between the smaller urban blocks within the other villages of Ellenbrook and the larger acreage blocks of Henley Brook. It was designed with a distinct tranquil country feel consisting of larger country sized home-sites. The street design and landscaping has a strong country feel to promote a sense of community (see Figure 17).



Figure 16. Entrance to Morgan Fields.

From ‘Morgan Fields Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.



Figure 17. Morgan Fields parkland.

From ‘Morgan Fields Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.

Charlotte’s Vineyard, like Morgan Fields, was created to blend with the look and feel of the Swan Valley and surrounding area and consists of larger country sized home-sites. Set amongst natural bush land, the village is inspired by nature with formal planting, public art and streetscapes set among natural bushland (see Figure 18). The focal point of the village is a seven-hectare parkland and conservation area which instils a sense of place (see Figure 19).



Figure 18. Open space within Charlotte’s Vineyard.

From ‘Charlotte’s Vineyard Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.



Figure 19. Oval within Charlotte’s Vineyard.

From ‘Charlotte’s Vineyard Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.

Malvern Springs also has a country feel and provides residents with views of the Darling Ranges (see Figure 20). Due to fast paced modern life, this village was designed to provide its residents with a calmer home environment, cleaner air and a healthier lifestyle (see Figure 21). The design encourages residents to walk, stroll, run or cycle for recreation, which increases the chance to connect with their neighbours promoting a sense of community, sense of belonging and sense of place.



Figure 20. Malvern Springs lookout to the Darling Ranges.

From ‘Malvern Springs Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.



Figure 21. Malvern Springs streetscape.

From ‘Malvern Springs Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.

Lexia is nestled between the village of Malvern Springs in Ellenbrook and the adjoining suburb The Vines, and has a direct link to the surrounding wetlands and wilderness trails. Home-sites range from small cottage blocks to large country sized sites. With just 400 households, it is a small intimate village with a strong community focus. Public open space blends nature with traditional neighbourhood design (see Figure 22). Nearby facilities are connected via an extensive network of footpaths and cycleways; and the Ellenbrook town centre is within walking distance (see Figure 23).



Figure 22. Public open space within Lexia.

From ‘Lexia Brochure,’ by LWP (Land Developers), 2011, http://www.lwppropertygroup.com.au/Documents/Developments/ellenbrook/Lexia_Brochure_SinglePage.pdf. Copyright 2011 by LWP. Reprinted with permission.



Figure 23. Public walkways within Lexia.

From ‘Lexia Brochure,’ by LWP (Land Developers), 2011,

http://www.lwppropertygroup.com.au/Documents/Developments/ellenbrook/Lexia_Brochure_SinglePage.pdf. Copyright 2011 by LWP. Reprinted with permission.

The Town Centre in the heart of Ellenbrook provides amenities and attractions throughout the day and evening, as well as events that encourage civic and cultural building such as family fun days, summer outdoor cinema, seasonal markets and a yearly Ellenbrook Festival (see Figure 24). Ellenbrook consists of mixed facilities such as shopping (see Figure 25), offices, housing and community services (see Figure 26). The Town Centre enables safe movement of vehicles, cyclists and pedestrians as the roads are designed to create regular street blocks (City of Swan, 2004). There is some high density housing in the town centre (see Figure 27), while there is medium density housing within the villages, with home site frontages ranging from 8m to 25m and blocks sized from 250m² to 2000m².



Figure 24. Ellenbrook town centre.

From ‘Ellenbrook Town Centre Photograph,’ by LWP (Land Developers), 2009,

<http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.



Figure 25. ‘The Shops’ situated within Ellenbrook town centre.

From ‘Ellenbrook Town Centre Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.



Figure 26. Main Street of Ellenbrook town centre.

From ‘Ellenbrook Town Centre Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.



Figure 27. Apartments within Ellenbrook town centre.

From ‘Ellenbrook Town Centre Photograph,’ by LWP (Land Developers), 2009, <http://www.lwppropertygroup.com.au>. Copyright 2009 by LWP. Reprinted with permission.

The Australian Bureau of Statistics (2006) indicated there to be 3,438 dwellings in Ellenbrook, 94% of these being separate houses. In 2001, Ellenbrook had the highest rate of growth within Australia (847.5%), which was attributed to the suburb being a rapidly developing housing estate (Australian Bureau of Statistics, 2001). This is reflected in Census data which shows that the population of Ellenbrook was 575 people in 1996 (Australian Bureau of Statistics, 1996), and by 2001 the population had risen to 5,506 (Australian Bureau of Statistics, 2001). At the last census in 2006, the Ellenbrook population was 11,824 (Australian Bureau of Statistics, 2006). The projected population for Ellenbrook is 30,000 by the year 2012.

Fifty three percent of the total Ellenbrook population consists of residents in the 0-9 and 25-39 age groups indicating that Ellenbrook largely consists of young couples with or without young children, typically first homebuyers. In 2006, 14% of houses were fully owned, 64% were purchased (i.e., mortgaged), and 22% were rental properties reflecting both private (18%) and government (4%) rental properties (Australian Bureau of Statistics, 2006). The distribution of public housing throughout Ellenbrook is a ratio of 1 to 12 private dwellings. The policy of the Department of Housing and Works (2005) is for the number of Department owned properties, particularly in new suburbs, to be 1 for every 9 private owned properties. This combination of homeowners and private and public housing renters occurs in many countries and is designed to provide neighbourhoods with higher levels of services and higher average levels of income, reducing the development of 'ghettos' and low quality housing areas (Brown et al., 2003). This creates higher standards for community social and physical conditions resulting in more attachment by residents (Brown et al., 2003). In conclusion, this section has provided a profile of the Ellenbrook community focusing on the location of the suburb, the composition of the community and key statistics. The next section provides information related to the participants who took part in the current study.

Participants

The demographic information for the participants is summarised in Table 1 with detailed information found in Appendices A to T. Three hundred residents participated in the study, of which 220 (73%) were female. All participants were English speaking and the majority were from a White Anglo European background with 184 (61%) born in Australia. With regard to marital status, 200 (67%) participants were married. Of the participants, 176 (59%) were employed. Concerning education, 149 (49%) participants stated that they had completed further study after high school, whether college (TAFE), undergraduate or postgraduate university studies. Only 97 (32%) participants indicated that they were involved in any community activities, groups or committees. Of these 97 participants, 45 (44%) indicated that they were involved in one community group.

Table 1

Demographic Information of Participants in Percentage

Variable	No. of participants	% of participants
<i>Gender</i>		
Male	80	27
Female	220	73
Country of Birth - Australia	184	61
Married Marital Status	200	67
Employed	176	59
Involved in a community group	97	32

The participant ages ranged from 18-66 years, ($M = 36-40$ years). There were 247 (82%) participants who owned their home and 157 (53%) had children living at home. The average number of children per participant was 1.33. The average length of time residents have lived in Ellenbrook was 2.65 years. Residents expected to live in Ellenbrook for approximately 4.5 years. The average current household income ranged from \$50,000-\$65,000 with either one (120, 40%) or two (166, 55%) people responsible for contributing to the current household income. The average number of people that a person knew in Ellenbrook was 3.31. The data are summarised in Table 2.

Table 2

Demographic Information of Participants

Variable	Mean	Std. dev
Age	36-40 years	2.61
Length of residence	2.65 years	1.27
Expected length of residence	4.5 years	1.25
Income per annum	\$50,000-65,000	1.78
No. of children	1.33	1.21
No. of known people in Ellenbrook	3.31	1.11

Instruments

The survey questionnaire (see Appendices U-Y) was constructed by combining the four measures developed specifically for examining sense of community, sense of belonging, sense of place and residential satisfaction. Additionally, the survey consisted of a set of demographic questions based on identified variables presented in the literature as contributing to the measured concepts. Each scale is discussed below.

General Community Satisfaction Scale.

The General Community Satisfaction Scale (GCSS) (Vreugdenhil & Rigby, 1987) was used to measure community satisfaction (Appendix U). The GCSS consists of 27 items using an answer format of a 5 point Likert Scale, ranging from “strongly disagree” to “strongly agree”. Questions include: “This suburb is a wonderful place in which to live” and “The quality of life in this suburb is low”. Scores range from 27 to 135 with a high score indicating satisfaction. The GCSS has a Cronbach’s Alpha of .97 and concurrent validity of .78 and .85 (Vreugdenhil & Rigby, 1987).

The GCSS was the result of refinement of the work by Wasserman (1982) whose study was considered a solution to assessing general community satisfaction. Prior to Wasserman’s (1982) study, community satisfaction instruments failed to examine both objective and subjective characteristics, were often single item global measures and therefore, were inadequate in assessing community satisfaction. Additionally, they failed to account for the complexity of community satisfaction and

that community services, facilities and opportunities play a role. However, the original scale by Wasserman (1982) needed further development as it was too brief, the item-content was restricted, no internal consistency was reported, and it was not known whether a ‘general’ factor would emerge if studies were performed in different communities (Vreugdenhil & Rigby, 1987). In order to address these inadequacies, Vreugdenhil and Rigby (1987) included items that were relevant to a global or general evaluation of the physical and social environment of communities and thus, was deemed a more appropriate instrument (Bardo & Dokmeci, 1990b). Therefore, as the GCSS is recognised as a measure that is replicable across different communities and cultural contexts (Bardo & Dokmeci, 1990b) and was developed and tested in South Australia (Vreugdenhil & Rigby, 1987) and therefore, regarded as a valid and reliable instrument in an Australian community, the GCSS was deemed suitable for use in Ellenbrook.

Neighborhood Cohesion Instrument.

The Neighborhood Cohesion Instrument (NCI) (Buckner, 1988) measured sense of community (Appendix V). The NCI consists of 18 items and 3 subscales: attraction to neighborhood (3 questions), degree of neighboring (5 questions) and psychological sense of community (10 questions). Each item uses an answer format of a 5 point Likert scale ranging from “strongly disagree” to “strongly agree”. Questions include: “I borrow things and exchange favours with my neighbours” and “I regularly stop and talk with people in my suburb”. Scores range from 18 to 90 with higher scores indicating greater levels of sense of community. The NCI has an internal consistency and stability coefficients of .95 (Buckner, 1988).

As discussed in the literature review, despite the SCI being the most widely used measure of sense of community, there is a lack of confirmation within the literature on the SCI’s intended dimensions or subscales (Long & Perkins, 2003; Nowell & Boyd, 2010; Wombacher et al., 2010). Additionally, when the SCI is analysed using factor analysis, it yields poor model fit with McMillan and Chavis’ (1986) original theoretical formulation, as well as for a single factor index (Long & Perkins, 2003; Tartaglia, 2006). Due to the SCI’s poor fit and the psychometric data from the NCI, the NCI was deemed a more appropriate scale to use in this study. In addition, the NCI operates at both an individual and collective level (Perkins et al., 1990). Therefore, the NCI is a suitable instrument as it examines a person’s sense of community and the overall social cohesion of their community (Buckner, 1988).

Sense of Place Scale.

The Sense of Place Scale (SOPS) (Jorgensen & Stedman, 2001) measures a person's thoughts, beliefs and emotions towards a particular place context (Appendix W). The SOPS consists of 12 items, divided into 3 subscales: place identity (4 questions), place attachment (4 questions) and place dependence (4 questions). Participants rate their responses to the items on a 5 point Likert scale ranging from "strongly disagree" to "strongly agree". Questions include: "Ellenbrook is my favourite place to be" and "Ellenbrook is the best place for doing the things that I enjoy most". Scores range from 12 to 60 with higher scores indicating increased sense of place. The SOPS has a reliability coefficient of .89. Reliability coefficients for the Identity subscale are .76; Attachment .84; and Dependence .74 (Jorgensen & Stedman, 2001).

Sense of place involves a person's cognitions, emotions and behaviours which is consistent with the concepts of attitudes (Jorgensen & Stedman, 2001). Therefore, attitude theory provides a theoretical framework for organising the relationships between place components. As a result, the SOPS was used due to its multi-dimensional foundation of sense of place in which each dimension represents a different component of attitude. Additionally, Jorgensen and Stedman (2001) proposed several models based on attitude structure research, as explanations of the scale's construct validity. While there was support for three univariate dimensions consisting of place attachment, place identity and place dependence, the multi-dimensional construct was the better fit for measuring sense of place.

Sense of Belonging Instrument.

The Sense of Belonging Instrument (SOBI) (Hagerty & Patusky, 1995) is a self-report instrument consisting of 2 scales (Appendix X). The first is sense of belonging - psychological (SOBI - P) which measures a person's sense of fit and sense of being valued in an interpersonal relationship. The SOBI - P scale consists of 18 items and questions include: "In general, I don't feel a part of the mainstream of society" and "I generally feel that people accept me". The second scale represents sense of belonging - antecedents (SOBI - A) which measures factors assumed to be present for the occurrence of a sense of belonging, including energy for involvement and the desire for meaningful relationships (Hagerty & Patusky, 1995). The SOBI - A scale consists of 15

items which includes questions such as: “It is important to me that I am valued or accepted by others” and “I want to be a part of things going on around me”.

Responses to each item in the SOBI are provided on a 4 point Likert scale ranging from “strongly disagree” to “strongly agree”. Each scale is scored separately with a range from 33 to 132. Lower scores on the SOBI-A indicate less perceived social support, negative social support and conflict (Hagerty & Patusky, 1995). Lower scores on the SOBI-P are related to depression, anxiety, loneliness, suicidal thoughts and history of psychiatric treatment (Hagerty et al., 1996). Coefficient alphas for SOBI-P range from .91 to .93, and for SOBI-A from .63 to .76 (Hagerty et al., 1996).

This instrument was selected to measure sense of belonging as it identifies attributes of sense of belonging as being (a) valued involvement, or the experience of feeling valued, needed, or accepted; and (b) fit, the perception that the individual’s characteristics articulate with the system or environment. This instrument reflects the theoretical formulation of belonging as comprising of object relationship (valued involvement) and identity (fit) (Hagerty & Patusky, 1995).

Demographic questionnaire.

The demographic questionnaire consisted of a set of demographic questions based on identified variables presented in the literature as contributing to the measured concepts. These variables were: gender, age, education level, racial or ethnic identification, marital status, employment status, residential status, length of residence, income, number of children living at home, living arrangements (number of people living at home), involvement in community activities and number of community members known (see Appendix Y).

Ethical Considerations

Approval was obtained prior to commencement of this research from the Edith Cowan University Human Research and Ethics Committee. Prior to data collection, participants were provided with an information letter (Appendix Z) which outlined the nature of the study and provided contact details for further clarification of the study if needed. It was stressed to participants that their participation was voluntary and they could withdraw from the research at any time with no repercussions. Responses were confidential and no identifying information was collected.

Procedure

Prior to the main data collection, a pilot study was conducted to determine adequate completion rates, and ease and comprehensiveness of the questions. Residents were approached by the researcher via door knocking in which questionnaires and information letters were administered to 10 residents willing to participate in the study who were aged over 18 years of age and spoke English. Research indicates that 10 participants are considered sufficient to conduct a pilot study (Salant & Dillman, 1994). As only 10 participants were needed for the pilot study, homes were approached until the completion rate was 100%. Based on participant feedback in the pilot study, the questionnaire completion time was deemed appropriate and questions easy to understand. Therefore, no alteration to the final questionnaire occurred.

Subsequent to the pilot study, residences within Ellenbrook were approached by the researcher and an assistant, in which 300 questionnaires and information letters were delivered to English speaking residents over 18 years of age who were willing to participate in the study. As the choice of sampling timeframes influences who participates in the study (Kestenberg & Kestenberg, 1988), questionnaires were delivered at various times and days (9.00am to 6.00pm Monday to Saturday, Sunday excluded), in an attempt to reach as many community members as possible. For safety reasons the researcher and research assistant delivered the questionnaires together, and did not enter any participant's house. The questionnaire and an envelope were left with participants and the completed questionnaire was sealed for confidentiality purposes. Additionally, a suitable time was arranged with participants to collect the questionnaires. The questionnaires required 30 minutes to complete.

Leaving questionnaires with participants ensured valid and reliable responses, as the researcher's presence may increase the likelihood of socially desirable responses (Salant & Dillman, 1994). Additionally, the participant has more control on the completion pace of the survey, enabling cognitive processing to occur as there is less pressure on response times, resulting in more accurate responses (Rockwood, Sangster, & Dillman, 1997; Salant & Dillman, 1994). Finally, as there were 90 questions their order may have affected responses. To reduce measurement error, the order of the questions was systematically varied in which sense of community questions were asked first in one set of questionnaires, sense of belonging questions were asked first in

another set of questionnaires, and so on (Salant & Dillman, 1994). This varying questionnaire order was distributed randomly to participants.

To increase response rates a number of procedures were utilised. First, a pilot study was conducted with 10 residents to determine adequate completion rates, and ease and comprehensiveness of the questions. Second, the ‘drop off’ survey method was chosen as personal contact between the researcher and participant encouraged completion rates (Salant & Dillman, 1994). Third, the questionnaires were collected at a convenient time for the participant (Salant & Dillman, 1994). Fourth, if at this initial call back the participant was not home or had not completed the questionnaire, a stamped addressed envelope was left with a note asking for the questionnaire to be returned (Salant & Dillman, 1994). Based on these procedures, the response rate for this study was 88.8% with only 38 (11.2%) surveys not returned.

Summary

This chapter has provided an outline of the participants, instruments, ethical considerations and procedure of this study. In summary, a quantitative design was used to examine residential satisfaction, sense of community, sense of belonging and sense of place with 300 residents from the community of Ellenbrook. Participants completed the following questionnaires on residential satisfaction: General Community Satisfaction Scale (GCSS) (Vreugdenhil & Rigby, 1987); sense of community, Neighborhood Cohesion Instrument (NCI) (Buckner, 1988); sense of belonging, Sense of Belonging Instrument (SOBI) (Hagerty & Patusky, 1995); and sense of place, Sense of Place Scale (SOPS) (Obst et al., 2002b) to explore these concepts. Ethical approval was obtained prior to commencing the study. The following chapter presents the analysis and results of the quantitative study.

Chapter 4

Results

Statistical Data Analysis

The data was analysed using PASW (Predictive Analytics SoftWare) Statistic version 18 to answer the following research questions:

1. What is the sense of community within Ellenbrook?
2. What is the sense of belonging within Ellenbrook?
3. What is the sense of place within Ellenbrook?
4. What is the level of residential satisfaction within Ellenbrook?
5. What builds residential satisfaction, sense of community, sense of belonging and sense of place in a planned community?
6. What factors comprise residential satisfaction, sense of community, sense of belonging and sense of place?
7. What is the relationship between residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook?

Assumption testing was undertaken on the data to determine the appropriate analyses to be conducted. Based on this testing the following analyses were performed.

Research Questions 1-4

To examine the level of residential satisfaction, sense of community, sense of belonging and sense of place within each village of Ellenbrook, a Kruskal-Wallis test was performed on the data from 300 participants. The Kruskal-Wallis test compared the means of the villages to determine if there were any differences (Tabachnick & Fidell, 2007).

Research Question 5

Kruskal-Wallis was also performed to address the components of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook by examining the social, physical and personal predictors such as age, tenure type and number of people known in the community.

Research Questions 6

To explore the factors that comprise residential satisfaction, sense of community, sense of belonging and sense of place in Ellenbrook, factor analysis was conducted. Factor analysis enables the structure of the variables to be observed (Coakes, Steed, & Dzidic, 2006).

Research Question 7

Finally, to examine the relationship between residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook, regression analyses were performed. Regression assesses the relationship between several independent variables and one dependent variable (Tabachnick & Fidell, 2007). A significant level of 0.05, or p-value = 0.05, was used. Before the above analyses were performed, reliability of the General Community Satisfaction Scale (GCSS) (Vreugdenhil & Rigby, 1987), Neighborhood Cohesion Instrument (NCI) (Buckner, 1988), Sense of Place Scale (SOPS) (Jorgensen & Stedman, 2001) and Sense of Belonging Instrument (SOBI) (Hagerty & Patusky, 1995) scales were examined.

Reliability

Through SPSS reliability analysis scale, the coefficient alpha was analysed to determine if the scales used with this sample had a similar level of reliability to that of the scales when originally tested. An appropriate level of reliability for research is 0.70 (Groth-Marnat, 2009). Reliability of the General Community Satisfaction Scale (GCSS) was calculated and the Cronbach's alpha score was 0.93. This estimated alpha score was close to the published alpha score (0.97) by Vreugdenhil and Rigby (1987) in their development of this instrument. The Estimated Neighborhood Cohesion Instrument (NCI) scale reliability was 0.92 close to the 0.95 score obtained by Buckner (1988). For the Sense of Place Scale (SOPS) the estimated alpha score was 0.90 similar to the score of 0.89 computed by Jorgensen and Stedman (2001). For the Sense of Belonging Instrument – Antecedents (SOBI-A) estimated scale the reliability alpha was 0.82, higher than the alphas computed by the developers of the scales developers, Hagerty and Patusky (1995) who obtained scores ranging from 0.63 to 0.76. In this scale, removal of item 10 (“All of my life I have wanted to feel like I really belonged somewhere”) would have increased the alpha score to 0.83 but as this is only a marginal increase, the item was retained. For the Sense of Belonging Instrument- Psychological

(SOBI-P) estimated scale the reliability alpha was 0.96, higher than the alpha received by Hagerty and Patusky (1995) which ranged from 0.91 to 0.93. When the SOBI-A and SOBI-P subscales were combined, the reliability alpha was .94. See Table 3 for a summary comparing the original scale reliability to that obtained in this study.

Table 3

Comparison of the Scales' Cronbach Alpha Scores between the Original Developer's and this Study

Instrument	Original Reliability	Current Reliability
General Community Satisfaction Scale	.97	.93
Neighbourhood Cohesion Index	.95	.92
Sense of Place	.89	.90
Sense of Belonging - Antecedent	.76	.82
Sense of Belonging - Psychological	.93	.96

Data Screening

Prior to any analysis, screening of all data was undertaken. Screening involved checking the data to ensure there was sufficient information, variables and participants to perform the analyses, determine if there were any missing data or outliers and examine normality of the variables, as well as multi-collinearity, skewness and homogeneity of variance. Discussion of data screening for each analysis is presented in the next section.

Normality

Normality of the variables was assessed by applying the Kolmogorov-Smirnov Test. Results indicated that the variables were not normally distributed, $p\text{-value} = 0.000$, $p < 0.05$. For more details, see Appendix AA. Skewness which refers to the symmetry of

the distribution was also examined, and when a variable is skewed this shows that the variable mean is not in the centre of the distribution (Field, 2006; Tabachnick & Fidell, 2007). It was found that four variables: *“For doing the things that I enjoy the most, no other place can compare to this suburb”*, *“All of my life I have wanted to feel like I really belonged somewhere”*, *“Fitting in with people around me matters a great deal”* and *“I feel badly if others do not value or accept me”*, were positively skewed while the remaining variables were negatively skewed, also indicating that normality was not met (see Appendix AB). When a distribution is positively skewed the frequent scores cluster at the lower end and the tail points towards the more positive or higher scores; whereas when a distribution is negatively skewed the reverse is true - the frequent scores cluster at the higher end and the tail points towards the more negative or lower scores (Field, 2006).

Some of the variables also exhibited non-normal kurtosis. Kurtosis refers to the peakedness of the distribution and the degree to which the scores cluster in the tails of the distribution (Field, 2006). When distributions are not normal, the variance of a variable is underestimated (Tabachnick & Fidell, 2007). Twenty of the variables had a platykurtic distribution indicating that many scores are found in the tail of the distribution, giving the distribution of the scores a ‘flat’ looking appearance (Field, 2006). The remaining variables were of a leptokurtic distribution indicating that many scores are not in the tail of the distribution, giving a ‘pointy’ appearance to the distribution of scores (Field, 2006).

Research Questions 1-4: What is the level of Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place within Ellenbrook?

Non parametric test: Kruskal-Wallis test – no group differences.

Due to normality not being met and the scores on the DV (residential satisfaction) being an ordered categorical level of measurement, a nonparametric technique was performed to examine if there were any difference between the villages of Ellenbrook with regards to residential satisfaction, sense of community, sense of belonging and sense of place. Differences between the villages were examined as they each have a different design and previous research has found that variables such as sense of community differed as a result of community characteristics (e.g., Glynn, 1981, 1986; Kingston et al., 1999).

Assumptions for nonparametric techniques were met as the sample was selected randomly and the participants appeared in only one group. The Kruskal-Wallis test was performed as it examines differences between two or more groups (Tabachnick & Fidell, 2007). Results indicated that there were no significant differences between the villages with regard to residential satisfaction, the chi-square statistic $\chi^2 (3, N = 300) = 0.059, p > .05$; sense of community, $\chi^2 (3, N = 300) = 3.619, p > .05$; sense of place, $\chi^2 (3, N = 300) = 0.921, p > .05$; sense of belonging, $\chi^2 (3, N = 300) = 0.529, p > .05$, (see Table 4).

Table 4

Chi-Square Values for Kruskal-Wallis Test Comparing the Differences between the Villages of Ellenbrook Regarding SOC, SOP, SOB and Residential Satisfaction

Variable	<i>df</i>	Chi-Square	Sig
Residential Satisfaction	3	0.05	0.996
Sense of Community	3	3.61	0.306
Sense of Place	3	0.92	0.820
Sense of Belonging	3	0.52	0.912

It was determined that there were no differences between the villages of Ellenbrook so no further analysis for individual villages was undertaken; therefore, the mean scores for each variable examined are presented for Ellenbrook as a whole. It was found that the mean score for residential satisfaction was 114.71 (SD 12.78), scores ranged from 27 to 135, with higher scores indicating satisfaction. Sense of community mean scores within Ellenbrook was 66.21 (SD 10.92) with a range of 18 to 90 with the higher the score, the greater the sense of community. The mean score for sense of place was 40.66 (SD 7.94), scores ranged from 12 to 60 with the higher the score indicating an increased sense of place. Finally, the mean score for sense of belonging was 103.25 (SD 13.47), with scores ranging from 33 to 132, and the higher the score an increased sense of belonging. The resulting scores are tabulated in Table 5.

Table 5

Mean Scores for Sense of Community, Sense of Belonging, Sense of Place and Residential Satisfaction of Ellenbrook

Variable	Instrument Range	Min	Max	<u>M</u>	<u>SD</u>
Residential Satisfaction	27 – 135	74	135	114.71	12.78
Sense of Community	18 – 90	34	90	66.21	10.92
Sense of Place	12 – 60	16	60	40.66	7.94
Sense of Belonging	33 – 132	35	132	103.25	13.47

Research Question 5: What Builds Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place in a Planned Community?

Non parametric test: Kruskal-Wallis test – no group differences.

The Kruskal-Wallis test was performed to examine if there were any group differences between different age groups regarding sense of community, sense of belonging, sense of place and residential satisfaction. Results indicated that there were no significant differences between the different age groups regarding residential satisfaction, the chi-square statistic: $\chi^2 (9, \underline{N} = 300) = 3.87, p > .05$; sense of community, $\chi^2 (9, \underline{N} = 300) = 10.87, p > .05$; sense of place, $\chi^2 (9, \underline{N} = 300) = 15.32, p > .05$; sense of belonging, $\chi^2 (9, \underline{N} = 300) = 11.98, p > .05$. This is outlined in Table 6.

Table 6

Chi-Square Values for Kruskal-Wallis Test Comparing the Differences between Different Age Groups Regarding SOC, SOP, SOB and Residential Satisfaction

Variable	<i>df</i>	Chi-Square	Sig
Residential Satisfaction	9	3.87	0.920
Sense of Community	9	10.87	0.284
Sense of Place	9	15.32	0.082
Sense of Belonging	9	11.98	0.214

The Kruskal-Wallis test examined if there were any group differences between country of birth with regard to sense of community, sense of belonging, sense of place and residential satisfaction. Results indicated that there were no significant differences between the different places of birth with regard to residential satisfaction, the chi-square statistic: $\chi^2 (22, N = 300) = 21.37, p > .05$; sense of community, $\chi^2 (22, N = 300) = 31.53, p > .05$; sense of place, $\chi^2 (22, N = 300) = 17.16, p > .05$; sense of belonging, $\chi^2 (22, N = 300) = 24.52, p > .05$. Results are presented in Table 7.

Table 7

Chi-Square Values for Kruskal-Wallis Test Comparing the Differences between Country of Birth Regarding SOC, SOP, SOB and Residential Satisfaction

Variable	<i>df</i>	Chi-Square	Sig
Residential Satisfaction	22	21.37	0.498
Sense of Community	22	31.53	0.086
Sense of Place	22	17.16	0.754
Sense of Belonging	22	24.52	0.320

The Kruskal-Wallis test was also performed to examine if there were any group differences between education level regarding sense of community, sense of belonging, sense of place and residential satisfaction. Results (see Table 8) indicated that there were no significant differences between the different levels of education regarding residential satisfaction, the chi-square statistic: $\chi^2 (6, N = 300) = 7.49, p > .05$; sense of community, $\chi^2 (6, N = 300) = 5.07, p > .05$; sense of place, $\chi^2 (6, N = 300) = 10.70, p > .05$; and sense of belonging, $\chi^2 (6, N = 300) = 2.41, p > .05$.

Table 8

Chi-Square Values for Kruskal-Wallis Test Comparing the Differences between Education Level Regarding SOC, SOP, SOB and Residential Satisfaction

Variable	df	Chi-Square	Sig
Residential Satisfaction	6	7.49	0.277
Sense of Community	6	5.07	0.535
Sense of Place	6	10.70	0.098
Sense of Belonging	6	2.41	0.878

The Kruskal-Wallis test examined if there were any group differences between homeownership status with regards to sense of community, sense of belonging, sense of place and residential satisfaction. Results indicated there were no significant differences between people who owned their homes and those who did not with regards to residential satisfaction, the chi-square statistic: $\chi^2 (2, N = 300) = 1.05, p > .05$; sense of community, $\chi^2 (2, N = 300) = 5.13, p > .05$; sense of place, $\chi^2 (2, N = 300) = 0.50, p > .05$; and sense of belonging, $\chi^2 (2, N = 300) = 4.04, p > .05$ (see Table 9).

Table 9

Chi-Square Values for Kruskal-Wallis Test Comparing the Differences between Homeownership Status Regarding SOC, SOP, SOB and Residential Satisfaction

Variable	<i>df</i>	Chi-Square	Sig
Residential Satisfaction	2	1.05	0.591
Sense of Community	2	5.13	0.077
Sense of Place	2	0.50	0.776
Sense of Belonging	2	4.04	0.132

The Kruskal-Wallis test was also performed to examine if there were any group differences between length of time participants had lived in Ellenbrook with regard to sense of community, sense of belonging, sense of place and residential satisfaction. Results indicated that there were no significant differences between the length of time a person has lived in Ellenbrook with regard to residential satisfaction, the chi-square statistic: $\chi^2 (5, N = 300) = 3.63, p > .05$; sense of community, $\chi^2 (5, N = 300) = 1.65, p > .05$; sense of place, $\chi^2 (5, N = 300) = 1.90, p > .05$; and sense of belonging, $\chi^2 (5, N = 300) = 2.87, p > .05$ (see Table 10).

Table 10

Chi-Square Values for Kruskal-Wallis Test Comparing the Differences between Length of Time Lived in Ellenbrook Regarding SOC, SOP, SOB and Residential Satisfaction

Variable	<i>df</i>	Chi-Square	Sig
Residential Satisfaction	5	3.63	0.604
Sense of Community	5	1.65	0.894
Sense of Place	5	1.90	0.862
Sense of Belonging	5	2.87	0.719

Research Question 5: What Builds Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place in a Planned Community?

Non parametric test: Kruskal-Wallis test – group differences.

The Kruskal-Wallis test was performed to examine if there were any group differences between marital status for sense of community, sense of belonging, sense of place and residential satisfaction. Results indicated that there were no significant differences between marital status with regard to residential satisfaction, the chi-square statistic: $\chi^2(4, N = 300) = 4.91, p > .05$. However, there were group differences for sense of community, $\chi^2(4, N = 300) = 16.28, p < .05$; sense of place, $\chi^2(4, N = 300) = 10.63, p < .05$; and sense of belonging, $\chi^2(4, N = 300) = 18.49, p < .05$ (see Table 11).

Table 11

Chi-Square Values for Kruskal-Wallis Test Comparing the Differences between Marital Status Regarding SOC, SOP, SOB and Residential Satisfaction

Variable	df	Chi-Square	Sig
Residential Satisfaction	4	4.91	0.296
Sense of Community	4	16.28	0.003*
Sense of Place	4	10.63	0.031*
Sense of Belonging	4	18.49	0.001*

*p<0.05

The Kruskal-Wallis test also examined group differences between income level in regard to sense of community, sense of belonging, sense of place and residential satisfaction. Results indicated that there were no significant differences between income level in regard to residential satisfaction, the chi-square statistic: $\chi^2(5, N = 300) = 7.04, p > .05$ and sense of place, the chi-square statistic: $\chi^2(5, N = 300) = 3.95, p > .05$. However, there were group differences for sense of community, $\chi^2(5, N = 300) = 11.41, p < .05$; and sense of belonging, $\chi^2(5, N = 300) = 12.74, p < .05$ (see Table 12).

Table 12

Chi-Square Values for Kruskal-Wallis Test Comparing the Differences between Income Level with Regards to SOC, SOP, SOB and Residential Satisfaction

Variable	<i>df</i>	Chi-Square	Sig
Residential Satisfaction	5	7.04	0.217
Sense of Community	5	11.41	0.044*
Sense of Place	5	3.95	0.556
Sense of Belonging	5	12.74	0.026*

*p<0.05

Kruskal-Wallis test examined group differences between number of people known in the community in regard to sense of community, sense of belonging, sense of place and residential satisfaction. Results indicated there were no significant differences between the number of people known in a community in regard to residential satisfaction, the chi-square statistic: $\chi^2(3, N = 300) = 2.38, p > .05$ and sense of place, the chi-square statistic $\chi^2(3, N = 300) = 5.97, p > .05$. However, there were group differences for sense of community, $\chi^2(3, N = 300) = 16.53, p < .05$; and sense of belonging, $\chi^2(3, N = 300) = 9.66, p < .05$ as outlined in Table 13.

Table 13

Chi-Square Values for Kruskal-Wallis Test Comparing Differences between Number of People Known in Ellenbrook for SOC, SOP, SOB and Residential Satisfaction

Variable	<i>df</i>	Chi-Square	Sig
Residential Satisfaction	3	2.38	0.497
Sense of Community	3	16.53	0.001*
Sense of Place	3	5.97	0.113
Sense of Belonging	3	9.66	0.022*

*p<0.05

Research Question 5: What Builds Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place in a Planned Community?

Non parametric test: Mann-Whitney test.

In addition, a Mann-Whitney test examined if there were any gender differences between participants with regard to residential satisfaction, sense of community, sense of belonging and sense of place. The Mann-Whitney test compares two unpaired groups when the data is not normally distributed and indicates whether the population distribution for the two groups on the Dependent Variable are identical or not (Field, 2006). Assumptions of the Mann-Whitney test were met as participants were only in one group and the groups were not related (Field, 2006). Results indicated there were significant group differences for residential satisfaction, $z = -2.008$, $p < .05$; and sense of community, $z = -2.169$, $p < .05$. No significant differences were reported for sense of place, $z = -1.323$, $p > .05$; and sense of belonging, $z = -0.945$, $p > .05$ (see Table 14).

Table 14

Z Score Values for Mann-Whitney Comparing the Differences between Gender Regarding SOC, SOP, SOB and Residential Satisfaction

Variable	z-Score	Significance
Residential Satisfaction	-2.008	0.045*
Sense of Community	-2.169	0.030*
Sense of Place	-1.323	0.186
Sense of Belonging	-0.945	0.345

* $p < 0.05$

The Mann-Whitney test also enabled examination of differences regarding sense of community, sense of belonging, sense of place and residential satisfaction between residents involved or not involved in the community. Results indicated group differences for residential satisfaction, $z = -2.560$, $p < .05$; sense of community, $z = -5.284$, $p < .05$; sense of place, $z = -2.801$, $p > .05$; and sense of belonging, $z = -2.477$, $p > .05$ as outlined in Table 15.

Table 15

Z Score Values for Mann-Whitney Comparing the Differences between Community Involvement Regarding SOC, SOP, SOB and Residential Satisfaction

Variable	z-Score	Significance
Residential Satisfaction	-2.560	0.010*
Sense of Community	-5.284	0.000*
Sense of Place	-2.801	0.005*
Sense of Belonging	-2.477	0.013*

*p<0.05

Research Question 6: What Factors Comprise Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place within Ellenbrook?

Factor analysis.

To examine which factors contributed to building residential satisfaction, sense of community, sense of belonging and sense of place in a community, factor analysis was conducted. While factor analysis is designed for interval data, it can also be used for ordinal data such as scores on a Likert scale (Manly, 2005; Rencher, 2002). For factor analysis, some practical issues and assumptions need to be considered. An ideal sample size for factor analysis is at least 300 cases which was obtained in this study (Fabrigar, Wegener, MacCallum, & Strahan, 1999; Tabachnick & Fidell, 2007). As indicated earlier, the Kolmogorov-Smirnov test indicated that normality was not met. If variables are normally distributed the solution is improved. However, normality is not considered critical for factor analysis as it is robust to assumptions of normality (Tabachnick & Fidell, 2007). Also if normality is not met in a study which samples 100 or more cases, variables that skew significantly and present with non-normal kurtosis rarely deviate from normality enough to make a substantial difference in the analysis (Tabachnick & Fidell, 2007). Finally, the assumption of normality is only important if the results are to be generalised beyond the sample collected (Field, 2006). As the results of this study will not be generalised to other samples, it was decided to proceed with factor analysis.

Another assumption of factor analysis is linearity. As there were 96 variables, over 2000 histograms of standardised residuals as well as over 2000 scatterplots would be produced. Examination of all histograms and scatterplots would be impractical therefore, it was decided to examine linearity for the total score for residential satisfaction (DV) and the total scores for sense of community, sense of belonging and sense of place (IVs). Examination of the histogram of standardised residuals (see Figure 28) showed a histogram with a normal ‘bell shaped’ curve distribution, and examination of the scatterplot (see Figure 29) showed points that were randomly and somewhat evenly dispersed throughout. These distributions indicate that the assumption of linearity was met.

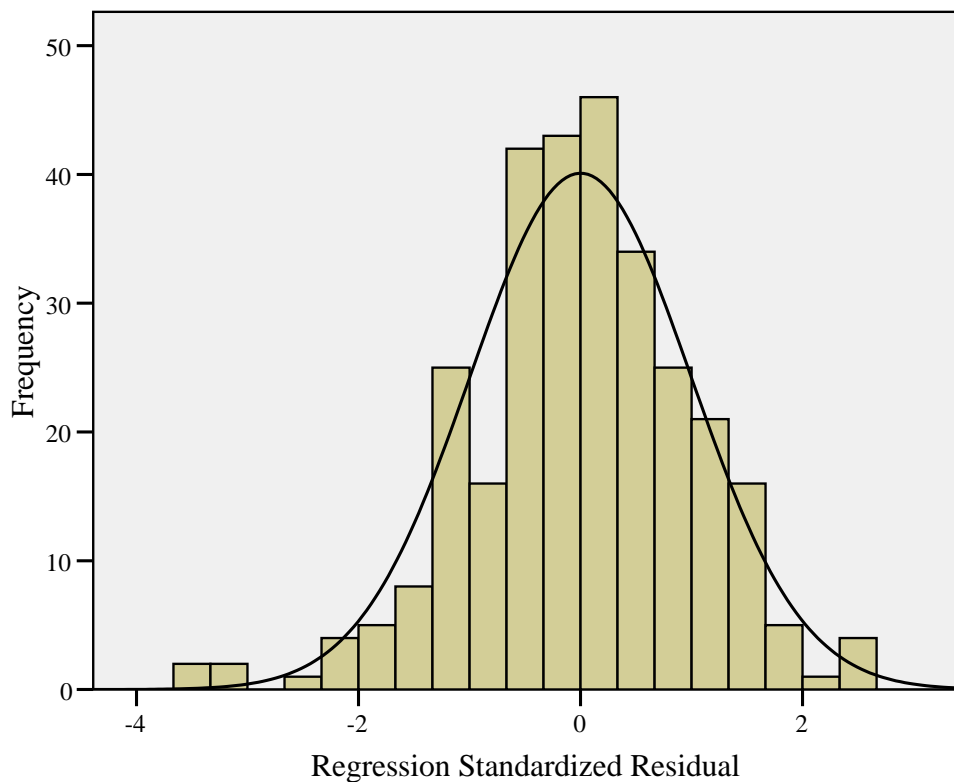


Figure 28. Histogram of standardised residual with Residential Satisfaction Scale total score as the DV

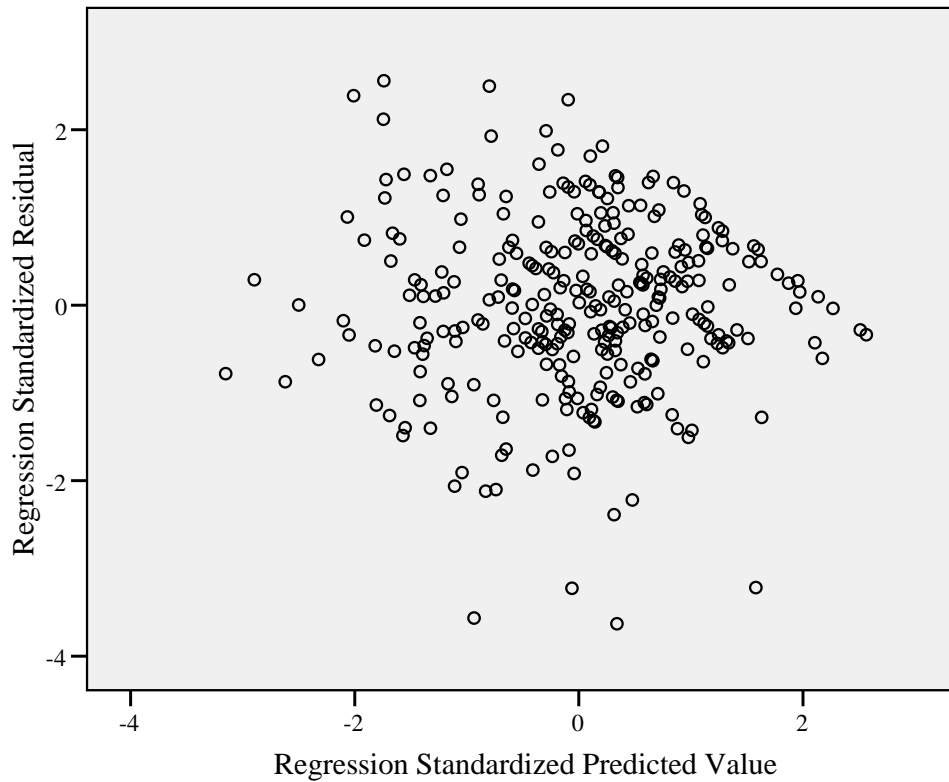


Figure 29. Scatterplot of standardised residuals with Residential Satisfaction Scale total score as the DV

Further examination of the correlation coefficients indicated that linearity was present for the Neighbourhood Cohesion Scale Total Score, Sense of Place Scale Total Score and Sense of Belonging Scale Total Score. See Table 16 for more detail.

Table 16

Linearity of Sense of Community, Sense of Belonging and Sense of Place on Residential Satisfaction

Variables	<u>B</u>	β	Sig
Neighborhood Cohesion Scale Total Score	0.338	0.289	.000*
Sense of Place Scale Total Score	0.684	0.429	.000*
Sense of Belonging	0.140	0.147	.001*

* $p < .001$

Outliers among cases.

Another assumption of factor analysis is to check for outliers among cases. All but eight items were found to have outliers. When dealing with outliers there are three options: retain outliers, delete outliers or transform outliers (Tabachnick & Fidell, 2007). Upon examination of the data, it was determined that the outliers were not due to incorrect data entry, missing value codes, or from a different population which was not intended to be sampled. Researchers indicate that if cases should not have been sampled they need to be deleted (Howell, 2007; Tabachnick & Fidell, 2007); therefore, as the outliers in this study were from the target population, they were retained. A possible reason for the outliers was that the distribution for the variable in the population had more extreme variables than a normal distribution (Howell, 2007; Tabachnick & Fidell, 2007). It was also decided not to transform the data as it distorts the experimental error (Cooksey, 1996; Tabachnick & Fidell, 2007).

Multicollinearity and singularity.

Another assumption of factor analysis that was examined was multi-collinearity and singularity. Multi-collinearity refers to Independent Variables (IVs) that are highly correlated while singularity refers to perfectly correlated variables (Field, 2006). Singularity is a problem because it is impossible to determine the unique contribution of the highly correlated variables to the factor (Field, 2006).

When examining multi-collinearity and singularity the determinant of the R matrix needs to be greater than 0.00001 (Field, 2006). Examination of the data showed that the determinant of R is 0.001 indicating that the variables did not correlate very highly. Additionally, examining the correlation matrix for very high correlations of above 0.80 or 0.90 indicates multi-collinearity (Field, 2006); however, this only provides a general examination and does not detect subtle forms of multi-collinearity (Field, 2006). Examination of the correlation matrix did not indicate any correlations above 0.80. Further examination to detect multi-collinearity was conducted by examining the Variance Inflation Factor (VIF), which indicates whether a predictor has a strong linear relationship with the other predictors (Tabachnick & Fidell, 2007). If the largest VIF value is greater than 10, this is a strong indicator of multi-collinearity (Field, 2006; Tabachnick & Fidell, 2007). The VIF scores in this study ranged from 1.106 to 2.003, indicating that multi-collinearity was not occurring (Field, 2006). In addition, if

the average VIF score is greater than 10 then there is a cause for concern (Field, 2006). The average VIF scores in this study was 1.66 showing no reason for concern in regards to multi-collinearity. Tolerance scores also determine multi-collinearity; with scores below 0.1 indicating a problem (Field, 2006; Tabachnick & Fidell, 2007). In this study, the Tolerance Statistic Scores ranged from 0.499 to 0.904. As these scores did not fall below 0.1, this provided further evidence that multi-collinearity was not occurring.

Squared multiple correlations (SMCs) were also examined to detect multi-collinearity. As SPSS converts these values to tolerance values, manual calculation was performed using the following equation ($1 - \text{tolerance value}$). SMC's for each variable were: sense of community ($1 - 0.499 = 0.501$); sense of place ($1 - 0.530 = 0.470$); and sense of belonging ($1 - 0.904 = 0.096$). When examining SMCs, the closer to 0.00 the better. If the SMC scores equal one (1) then singularity is present and if any SMC score is very large (0.90), then multi-collinearity is present (Field, 2006). Based on the SMC scores in this study, singularity and multi-collinearity were not present.

Factorability of the correlation matrix.

Factorability of the correlation matrix determines the reliability of the relationships between pairs of variables. If R is factorable, numerous pairs are significant. When there are no correlations above 0.30, factor analysis may not be appropriate as there is nothing to factor analyse (Field, 2006; Tabachnick & Fidell, 2007). Examination of the *Correlation Matrix* showed there were several correlations that exceeded 0.30. Further evidence of the factorability of the correlation matrix was that Bartlett's Test of Sphericity was significant. However, with samples of substantial size, as in this research, this test is likely to be significant even if correlations are low (Tabachnick & Fidell, 2007). As a result, examination of the Kaiser-Meyer-Olkin measure of sampling adequacy, and the anti-image correlation matrix were conducted. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.913. Values greater than 0.6 are required for a good factor analysis and those that are close to 1 indicate that partial correlations are small and therefore, factor analysis should yield distinct and reliable factors (Field, 2006; Tabachnick & Fidell, 2007). The anti-image correlation matrix revealed that the measures of sampling adequacy ranged from 0.724 to 0.950 - an acceptable level is 0.5 or above (Tabachnick & Fidell, 2007).

Outliers among variables.

The final assumption examined was whether there were any outliers among the variables. The data was screened for multivariate outliers using Mahalanobis distance (Tabachnick & Fidell, 2007). The critical value of chi-square for three dependent variables (DV's) at an alpha level of 0.001 is 16.2. Using this value there were three multivariate outliers. Based on the sample size of 300 participants, these outliers were retained in the data set, as inclusion of a relatively small number of outliers is not detrimental to the overall analysis (Coakes et al., 2006; Tabachnick & Fidell, 2007).

Principal Axis Factoring (PAF).

Principal Axis Factoring (PAF) was utilised as it builds a testable model to explain the inter-correlations among variables. When examining the *Communalities* chart, if factors are less than 0.20, the items are not loading properly on the factors (Field, 2006; Tabachnick & Fidell, 2007). The item “*People don't care about this suburb and it's no wonder*” had the lowest communality (0.328) indicating that items were loading adequately. The *Total Variance Explained* table showed 17 variables with eigenvalues greater than 1 (see Appendix AC). If the 17 factors were extracted, 60% of the variance would be explained. The screeplot indicated two predominant factors (see Figure 30). Rotation was performed to make the solution more interpretable.

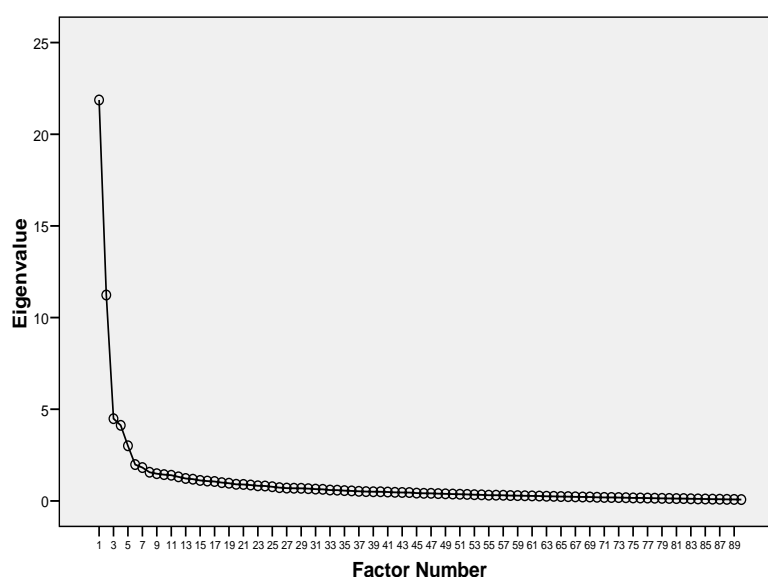


Figure 30. Scree plot of the eigenvalues for each factor

Rotation results.

An Orthogonal (Varimax) rotation was used as this is an accepted method for exploratory research (Coakes et al., 2006). Factor loadings, communalities (h^2), and percentages of variance explained after Varimax rotation are shown in Appendix AD. To aid interpretation, factor loadings less than .40 were suppressed (Field, 2006; Stevens, 1992). Within this analysis, 40 of the 90 items double loaded, removal of these items resulted in further double loadings in subsequent analyses. Therefore, the factor structure at this stage was retained, and each double loading item was assigned to the component on which it loaded more robustly (see Table 17).

The first factor included all 18 items pertaining to the Sense of Belonging – Psychological subscale of the Sense of Belonging Instrument and therefore, was labelled Belonging. One Sense of Belonging – Antecedent subscale item also loaded on this factor and on another factor with three other Sense of Belonging – Antecedent items. This item was assigned to the other factor as it loaded higher on that factor.

The second factor included 24 items; however, there were issues with this factor in that half the variables loaded on more than one factor and most variables appeared to have some relationship with this factor making it difficult to interpret. For example, of the 24 items to load on this factor, 16 pertained to residential satisfaction, 5 to sense of community, and 4 to sense of place. Further examination of the sense of community items indicated that all three Attraction to Neighborhood subscale questions loaded on this factor as well as two of the 10 Psychological Sense of Community subscale items. However, of the two PSOC items, one loaded more strongly on factor 2, which contained items only pertaining to sense of community, so was interpreted with that factor instead. With regard to sense of place, three of the four Place Attachment subscale questions and one of the four Place Identity subscale questions loaded on this factor. Two Place Attachment questions, *“This suburb is my favourite place to be”* and *“I feel happiest when I’m at this suburb”* also loaded on Factor 6 which contained one Place Attachment question. This one Place Attachment item also loaded on Factor 2 with the other three Place Attachment items. As a result of the double loadings of these Place Attachment items, interpretation proceeded with caution. Additionally, the one Place Identity item also loaded on Factor 7 with the remaining three Place Identity items. Again, interpretation proceeded with caution. Due to the generalised nature of this factor, weight was assigned to higher loading items and was labelled Satisfaction.

The third factor comprised of 14 of the 18 sense of community items. Further examination identified all six of the Degree of Neighbouring subscale items loaded as well as eight of the 10 PSOC subscale items. None of the Attraction to Neighbourhood subscale items loaded on this factor. This factor was labelled Community.

The fourth factor to emerge included 11 of the 27 items relating to residential satisfaction. Further examination of these items indicated that these items were referring to the negative aspects of a community such as “*This suburb is a terrible place for children*”, “*It is dangerous to live in this suburb*” and “*Living in this suburb is unpleasant*”. As a result, this factor was labelled Dissatisfaction.

The fifth factor to emerge had eight of the 15 Sense of Belonging – Antecedent subscale questions of the Sense of Belonging Instrument. For example, “*Fitting in with people around me matters a great deal*” and “*It is important to me that I am valued or accepted by others*”. As the questions related to aspects such as “fitting in” and “being accepted” this factor was labelled Acceptance.

The sixth factor included five sense of place instrument items. Of these, all four Place Dependence subscale questions loaded on this factor and one was referring to the Place Attachment subscale items. As a result, this factor was labelled Dependence.

The seventh factor to emerge loaded three sense of place instrument items. These items were three of the four Place Identity subscale questions. The three questions were: “*This suburb says very little about who I am*”, “*Everything about this suburb is a reflection of me*” and “*This suburb reflects the type of person I am*”. As a result, this factor was labelled Identity.

The eighth factor comprised three Sense of Belonging – Antecedent subscale questions. The three questions were: “*I just don’t feel like getting involved with people*”, “*I don’t have the energy to work on being a part of things*” and “*Relationships take too much energy for me*”. As a result, this factor was labelled Disinterested.

The ninth factor loaded four Sense of Belonging – Antecedent subscale questions. The four questions were: “*Generally, other people recognise my strengths and good points*”, “*In the past, I have felt valued and important to others*”, “*I have qualities that can be important to others*” and “*I can make myself fit in anywhere*”. This factor was labelled Valued. Table 17 below summarises these factor loadings.

Table 17

Varimax Rotated Factor Loadings

Factor	Label	Items
1	Belonging	<p>I don't feel that there is any place where I really fit in this world (SOBI – P)</p> <p>I feel like a square peg trying to fit into a round hole (SOBI – P)</p> <p>I feel left out of things (SOBI – P)</p> <p>I feel like an outsider in most situations (SOBI – P)</p> <p>In general, I don't feel a part of the mainstream of society (SOBI – P)</p> <p>I am troubled by feeling like I have no place in the world (SOBI – P)</p> <p>I am not valued by or important to my friends (SOBI – P)</p> <p>If I died tomorrow, very few people would come to my funeral (SOBI – P)</p> <p>I feel like a piece of a jigsaw puzzle that doesn't fit in the puzzle (SOBI – P)</p> <p>I am just not sure if I fit in with my friends (SOBI – P)</p> <p>I feel like I observe life rather than participate in it (SOBI – P)</p> <p>I am uncomfortable knowing that my background & experience differ (SOBI– P)</p> <p>I would describe myself as a misfit in most social situations (SOBI – P)</p> <p>I could not see or call my friends for days & it wouldn't matter to them (SOBI–P)</p> <p>I could disappear for days and it wouldn't matter to my family (SOBI – P)</p> <p>I often wonder if there is any place on earth where I really fit in (SOBI – P)</p> <p>I would like to make a difference to people or things around me (SOBI – P)</p> <p>I generally feel that people accept me (SOBI – P)</p>
2	Satisfaction	<p>In general, I am satisfied with living in this suburb (RS)</p> <p>This area has a good feeling about it (RS)</p> <p>This suburb is a wonderful place in which to live (RS)</p> <p>People should be proud to say they live in this suburb (RS)</p> <p>This suburb is a beautiful place to live (RS)</p> <p>This suburb is a good place for families (RS)</p> <p>This area is an interesting place to live (RS)</p> <p>I am satisfied with the quality of housing in this suburb (RS)</p> <p>There is a feeling of pride in this community (RS)</p> <p>This suburb is a good place for children to grow up in (RS)</p> <p>This suburb has a lot of good things going for it (RS)</p> <p>This suburb is a pleasant place to walk (RS)</p> <p>This suburb is one of Western Australia's most attractive places (RS)</p> <p>This suburb is a comfortable, relaxing place to live (RS)</p> <p>There just isn't enough privacy in this area (RS)</p> <p>This suburb is a very clean place (RS)</p> <p>Overall, I am attracted to living in this suburb (SOC–Attraction to Neighborhood)</p> <p>I plan to remain a resident in this suburb for years (SOC– Attraction)</p> <p>Given the opportunity, I would move out of this suburb (SOC– Attraction)</p> <p>Living in this suburb gives me a sense of community (SOC – PSOC)</p> <p>I feel like I belong in this suburb (SOC – PSOC)</p> <p>I feel relaxed when I'm at this suburb (SOP – Attachment)</p> <p>This suburb is my favourite place to be (SOP – Attachment)</p> <p>I feel happiest when I'm at this suburb (SOP –Attachment)</p> <p>I feel that I can really be myself in this suburb (SOP –Identity)</p>

Table 17 (cont.)

Varimax Rotated Factor Loadings (cont.).

Factor	Label	Items
3	Community	<p>I visit my neighbours in their homes (SOC – Neighbouring)</p> <p>I borrow things and exchange favours with my neighbours (SOC– Neighbouring)</p> <p>I rarely have neighbours over to my house to visit (SOC – Neighbouring)</p> <p>I regularly stop and talk with people in my suburb (SOC – Neighbouring)</p> <p>If I need advice I could go to someone in my suburb (SOC– Neighbouring)</p> <p>I believe my neighbours would help me in an emergency (SOC – Neighbouring)</p> <p>The friendships & associations I have with others mean a lot to me (SOC–PSOC)</p> <p>A feeling of fellowship is deep between me & others in the suburb (SOC–PSOC)</p> <p>I feel loyal to the people in my suburb (SOC – PSOC)</p> <p>I like to think of myself as similar to those who live in this suburb (SOC– PSOC)</p> <p>If people in my suburb were planning...something we were doing (SOC–PSOC)</p> <p>I would be willing to work with others to improve my suburb (SOC–PSOC)</p> <p>I think I agree with most people about what is important in life (SOC – PSOC)</p> <p>Living in this suburb gives me a sense of community (SOC – PSOC)</p>
4	Dissatisfaction	<p>This suburb is a disgrace to Western Australia (RS)</p> <p>This suburb is a terrible place for children (RS)</p> <p>Life is really dreary in this suburb (RS)</p> <p>Living in this suburb is unpleasant (RS)</p> <p>They should knock the whole place down and start again (RS)</p> <p>It's ridiculous to think people really like living in this area (RS)</p> <p>It is dangerous to live in this suburb (RS)</p> <p>The environment in this suburb is bleak and depressing (RS)</p> <p>This suburb is a boring place (RS)</p> <p>People don't care about this suburb and it's no wonder (RS)</p> <p>The quality of life in this suburb is low (RS)</p>
5	Acceptance	<p>Fitting in with people around me matters a great deal (SOBI - A)</p> <p>It is important to me that I fit somewhere in this world (SOBI - A)</p> <p>It is important to me that I am valued or accepted by others (SOBI - A)</p> <p>I feel badly if others do not value or accept me (SOBI - A)</p> <p>I am working on fitting in better with those around me (SOBI - A)</p> <p>It is important to me that my thoughts and opinions are valued (SOBI - A)</p> <p>I want to be a part of things going on around me (SOBI - A)</p> <p>All of my life I have wanted to ... belong somewhere (SOBI–A)</p>
6	Dependence	<p>For doing things I enjoy most, no other place can compare (SOP–Dependence)</p> <p>This suburb is the best place for doing the things I enjoy (SOP–Dependence)</p> <p>This suburb is not a good place to do the things I like to do (SOP–Dependence)</p> <p>As far as I am concerned, there are better places to be (SOP–Dependence)</p> <p>I really miss this suburb when away for too long (SOP–Attachment)</p>
7	Identity	<p>This suburb says very little about who I am (SOP –Identity)</p> <p>Everything about this suburb is a reflection of me (SOP –Identity)</p> <p>This suburb reflects the type of person I am (SOP –Identity)</p>
8	Disinterested	<p>I just don't feel like getting involved with people (SOBI - A)</p> <p>I don't have the energy to work on being a part of things (SOBI - A)</p> <p>Relationships take too much energy for me (SOBI - A)</p>
9	Valued	<p>I can make myself fit in anywhere (SOBI - A)</p> <p>Generally, other people recognise my strengths & good points (SOBI - A)</p> <p>In the past, I have felt valued and important to others (SOBI - A)</p> <p>I have qualities that can be important to others (SOBI - A)</p>

Research Question 7: What is the Relationship between Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place within Ellenbrook?

Spearman's correlation.

To examine the relationship between residential satisfaction, sense of community, sense of belonging and sense of place, a Spearman correlation was performed as data violated the assumptions of Pearson's r , in that the variables had a continuous ordinal measurement level. It was predicted that as the instruments measured related constructs, there would be a significant correlation with an effect size (i.e., strength of the relationship between the variables) of 0.50. Effect size determines the meaningfulness or importance of the significance that has been met (Field, 2006). The most recognised view about effect size is: $r = .10$ (small effect) that is, the effect explains 1% of the total variance; $r = .30$ (medium effect) – the effect accounts for 9% of the total variance; and $r = .50$ (large effect) – the effect accounts for 25% of the variance (Cohen, 1988; Field, 2006).

Data summarised in Table 18 show that Spearman's correlation was significant for all the variables indicating that constructs are related. The relationship between residential satisfaction and sense of community was $r(300) = 0.636$, $p < .05$ which indicated a large effect size; the relationship between residential satisfaction and sense of place was $r(300) = 0.620$, $p < .05$ which also indicated a large effect size; and the relationship between residential satisfaction and sense of belonging was $r(300) = 0.405$, $p < .05$ indicating a medium effect size. The relationship between sense of community and sense of place was $r(300) = .667$, $p < .05$ indicating a large effect size; and the relationship between sense of community and sense of Belonging was $r(300) = 0.327$, $p < .05$ indicating a medium effect size; and the relationship between sense of place and sense of belonging was $r(300) = 0.240$, $p < .05$ indicating a small effect size.

Table 18

Spearman's Correlation of Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place

Variables	SOC	SOP	SOB
Residential Satisfaction (RS)	0.636*	0.620*	0.405*
Sense of Community (SOC)		0.667*	0.327*
Sense of Place (SOP)			0.240*

*. Correlation is significant at the 0.01 level (2-tailed)

n = 300

Research Question 7: What is the Relationship between Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place within Ellenbrook?

Logistic regression.

To examine the strength of association between residential satisfaction, sense of community, sense of belonging and sense of place, multivariate logistic regression was performed. Logistic Regression describes the relationship between the dependent variable (residential satisfaction) and a set of independent variables (sense of community, sense of belonging and sense of place) and is useful for formulating models about the types of factors that might determine which variables are influential in predicting the outcome (Field, 2006). Logistic regression is related to and answers the same questions as Discriminant Function Analysis, Multiway Frequency Analysis (logit) and Multiple Regression Analysis. Logistic regression is more flexible as it does not require any assumptions about the distributions of the predictor variable. The predictors do not have to be linearly related, normally distributed or of equal variance within each group, and they can be any mix of dichotomous, discrete and continuous variables (Tabachnick & Fidell, 2007). However, it is recognised that for logistic regression, multivariate normality and linearity among the predictors may enhance power (Tabachnick & Fidell, 2007).

There are different methods of logistic regression: forced entry and forward or backward stepwise methods (Field, 2006). The forced entry method, however, is believed to be the only appropriate method for theory testing as stepwise methods are influenced by random variation, seldom provide replicable results, are not useful for theory building, and particularly with forward stepwise method there is a risk of a Type II error occurring (Field, 2006). As a result, the forced entry method was used in this research.

Plausible interactions among the independent variables (sense of community, sense of belonging and sense of place) included in the logistic regression models were tested and statistical significance for the unique contribution of each variable, while holding constant the other variables, was assessed by the Wald Chi-Square statistic. The strength of associations between variables statistically significantly associated with the outcome variable in the logistic regression analyses was quantified by 95% confidence intervals and estimated odds ratios, which is the ratio of the probability that an event will occur compared to the probability that an odd will not occur (Field, 2006).

Univariate analysis.

A Chi-Square was performed to test for relatedness or independence. The assumptions of Chi-Square were met in this study. These included: random sample, observation generated by a different participant contributes data to only one cell and adequate cell sizes. That is, when there are less than 10 cells, the lowest expected frequency required in all cells is five, particularly if the sample size is small. The observed frequencies, however, can be any value, including zero (Brace, Kemp, & Snelgar, 2000; Coakes et al., 2006; Field, 2006; Landridge, 2004). Additionally, the use of chi-square is recommended when the sample size is larger than 20 as the smaller the sample the worse the fit of the chi-square statistic, and there is also a strong risk of Type I error (Field, 2006; Landridge, 2004). With a sample size of 300 participants in this study and the output indicating that there were no cells with an expected count less than 5, these assumptions were met and the chi-square statistic deemed appropriate.

Examination of the Pearson's chi-square revealed a significant association between residential satisfaction (DV) and sense of community (IV) $\chi^2(1,300) = 40.127$, $p < .05$. The chi-square also revealed a significant association between residential satisfaction (DV) and sense of place (IV) $\chi^2(1,300) = 56.805$, $p < .05$, and a significant

association between residential satisfaction (DV) and sense of belonging (IV) $\chi^2 (1,300) = 25.848, p < .05$. This indicated that the variables were not independent but related. That is, the highly significant result indicated there was an association between the level of residential satisfaction experienced and the level of sense of community, sense of belonging and sense of place experienced. For example, the proportion of residents with high sense of community who experienced high levels of residential satisfaction was significantly more than the proportion of residents with low sense of community who experienced high levels of residential satisfaction.

Sense of community and residential satisfaction.

There were 127 (42%) residents with lower levels of sense of community (below $\underline{M} = 66.21$). Of these, 85 (67%) experienced lower levels of residential satisfaction (below $\underline{M} = 114.71$), while 42 (33%) experienced higher levels of residential satisfaction (above $\underline{M} = 114.71$). There were 173 (58%) residents with high sense of community (above $\underline{M} = 66.21$) and of these, 52 (30%) had low levels of residential satisfaction, with 121 (70%) having a higher level of residential satisfaction.

Sense of place and residential satisfaction.

Of the 135 (45%) residents with lower levels of sense of place (below $\underline{M} = 40.66$), 94 (70%) experienced lower levels of residential satisfaction (below $\underline{M} = 114.71$) while 41 (30%) experienced higher levels of residential satisfaction. There were 165 (55%) residents with higher levels of sense of place (above $\underline{M} = 40.66$). Of these, 43 (26%) experienced lower levels of residential satisfaction with 122 (74%) experiencing higher levels of residential satisfaction.

Sense of belonging and residential satisfaction.

Of the 134 (45%) residents with lower levels of sense of belonging (below $\underline{M} = 103.25$), 83 (62%) experienced lower levels of residential satisfaction (below $\underline{M} = 114.71$), while 51 (38%) experienced higher levels of residential satisfaction. There were 166 (55%) residents with higher levels of sense of belonging (above $\underline{M} = 103.25$) with 112 (68%) of these experiencing higher levels of residential satisfaction, and 54 (32%) experiencing lower levels of residential satisfaction. See Table 19 for more detail.

Table 19

Results of Univariate Analysis Examining the Relationship between Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place

Factor	High RS	Low RS	Total
High SOC	121 (70%)	52 (30%)	173 (58%)
Low SOC	42 (33%)	85 (67%)	127 (42%)
High SOP	122 (74%)	43 (26%)	165 (55%)
Low SOP	41 (30%)	94 (70%)	135 (45%)
High SOB	112 (68%)	54 (32%)	166 (55%)
Low SOB	51 (38%)	83 (62%)	134 (45%)

Multivariate analysis.

After performing the univariate analysis, the variables were examined to identify those to be included in the multivariate analysis. It is recommended that variables with a p-value of < 0.25 level be included in the analysis as studies have shown that using lower levels as the selection criterion, such as the traditional 0.05 level, fails to identify variables known to be important (Field, 2006). However, as all these variables had a p-value of < 0.05 the issue of important variables failing to be identified was not a concern and hence all were selected as variables for the multivariable model.

After the fit of the multivariate model was determined, the importance of each variable in the model was examined. Results for the following variables were: sense of community, Wald Statistic (1,300) = 8.86, $p < .05$; sense of place, Wald Statistic (1,300) = 23.9, $p < .05$; and sense of belonging, Wald Statistic (1,300) = 16.13, $p < .05$. The Wald statistic for each variable was significant thereby indicating that the parameters in the model are significant.

The odds ratio predicted by the model indicated that someone who had low levels of sense of community had 0.42 the odds of experiencing residential satisfaction compared to someone with high sense of community. Conversely, someone who had a high level of sense of community had 2.4 times the odds of experiencing residential satisfaction compared to someone who had low sense of community.

Someone who had low levels of sense of place had 0.24 the odds of having a high level of residential satisfaction compared to someone with high levels of sense of place. On the other hand, someone with a high level of sense of place had 4.1 times the odds of experiencing residential satisfaction compared to someone who had low sense of place.

Someone with a low level of sense of belonging had 0.33 the odds of experiencing residential satisfaction compared to someone with a high level of sense of belonging. Conversely, someone with a high level of sense of belonging had 3.0 times the odds of experiencing residential satisfaction compared to someone with low sense of belonging (see Table 20).

Table 20

Results of Multivariate Logistic Regression Analysis Examining the Relationship between Residential Satisfaction and Sense of Community, Sense of Belonging and Sense of Place

Factor	Odds Ratio	95% C.I. Lower - Upper	Wald Chi Square	df	Sig
SOC	0.416	0.23 – 0.74	8.86	1	0.003*
SOP	0.238	0.13 – 0.42	23.99	1	0.000*
SOB	0.336	0.19 – 0.57	16.13	1	0.000*

Note: $R^2 = .20$ (Homer & Lemeshow), $.25$ (Cox & Snell), $.33$ (Nagelkerke).

Model $\chi^2(1) = 85.37$, $*p < .005$
(n=300)

Chapter Summary

Prior to any analysis, assumption testing was undertaken on the data to determine the most appropriate analyses to be conducted. As a result, the Kruskal-Wallis test was utilised to compare the means of the villages to determine if there were any group differences in terms of the level of residential satisfaction, sense of community, sense of belonging and sense of place. Results showed there to be no group

differences: residential satisfaction, $\chi^2 (3, N = 300) = 0.059, p > .05$; sense of community, $\chi^2 (3, N = 300) = 3.619, p > .05$; sense of place, $\chi^2 (3, N = 300) = 0.921, p > .05$; and sense of belonging, $\chi^2 (3, N = 300) = 0.529, p > .05$.

The Kruskal-Wallis test also determined if group differences existed based on the participant's demographic information (see Table 21). Group differences were not evident for age, country of birth, education level, homeownership status and length of residence. For marital status, no group differences existed for residential satisfaction; however, group differences existed for sense of community, sense of place and sense of belonging. No group differences for income level existed for residential satisfaction and sense of place; however, there were group differences for sense of community and sense of belonging. The same was found for number of people known in the community in that no group differences existed for residential satisfaction and sense of place; however, group differences existed for sense of community and sense of belonging.

A Mann-Whitney analysis was performed on gender and number of people known in the community. In terms of gender, no group differences were found for sense of belonging ($z = -0.945, p > .05$); and sense of place ($z = -1.323, p > .05$). However, group differences were found for residential satisfaction ($z = -2.008, p < .05$); and sense of community ($z = -2.169, p < .05$). Group differences for community involvement were found for all four variables: residential satisfaction, $z = -2.560, p < .05$; sense of community, $z = -5.284, p < .05$; sense of place, $z = -2.801, p > .05$; and sense of belonging, $z = -2.477, p > .05$.

To explore factors contributing to building residential satisfaction, sense of community, sense of belonging and sense of place in Ellenbrook, factor analysis was performed; nine factors emerged. Of these, the sense of belonging items, the place identity items and the residential satisfaction items which referred to dissatisfaction, emerged separately on their own factor, respectively. However, several residential satisfaction items, along with the attraction to neighbourhood component of sense of community and the place attachment components of sense of place emerged together on another factor. Finally, to examine the relationship between sense of community, sense of belonging, sense of place and residential satisfaction within Ellenbrook, logistic regression analyses were performed. Results indicated a significant positive relationship between the variables. An integration of the results and conclusions are discussed in the following chapter.

Table 21

Summary of Chi-Square Values for Kruskal-Wallis Test examining Group Differences on Demographic Information with Regards to SOC, SOP, SOB and Residential Satisfaction

	Constant	Results	Sig
Age	RS	3.87	0.920
	SOC	10.87	0.287
	SOP	15.32	0.082
	SOB	11.98	0.214
COB	RS	21.37	0.498
	SOC	31.53	0.086
	SOP	17.16	0.754
	SOB	24.52	0.320
Education	RS	7.49	0.277
	SOC	5.07	0.535
	SOP	10.70	0.098
	SOB	2.41	0.878
Homeownership	RS	1.05	0.591
	SOC	5.13	0.077
	SOP	0.50	0.776
	SOB	4.04	0.132
Length of Residence	RS	3.63	0.604
	SOC	1.65	0.984
	SOP	1.90	0.862
	SOB	2.87	0.719
Marital Status	RS	4.91	0.296
	SOC	16.28	0.003*
	SOP	10.63	0.031*
	SOB	18.49	0.001*
Income Level	RS	7.04	0.217
	SOC	11.41	0.044*
	SOP	3.95	0.556
	SOB	12.74	0.026*
No. people known	RS	2.38	0.497
	SOC	16.53	0.001*
	SOP	5.97	0.113
	SOB	9.66	0.022*

*p<0.05

Chapter 5

Discussion

This study investigated the level of residential satisfaction, sense of community, sense of belonging and sense of place within the planned community of Ellenbrook in Western Australia. In order to do this the following research questions were proposed:

1. What is the sense of community within Ellenbrook?
2. What is the sense of belonging within Ellenbrook?
3. What is the sense of place within Ellenbrook?
4. What is the level of residential satisfaction within Ellenbrook?
5. What builds residential satisfaction, sense of community, sense of belonging and sense of place in a planned community?
6. What factors comprise residential satisfaction, sense of community, sense of belonging and sense of place?
7. What is the relationship between residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook?

Plan of the Chapter

This chapter will begin with a presentation of the community profile with regard to whether the different villages within Ellenbrook experienced different levels of residential satisfaction, sense of community, sense of belonging and sense of place. Following this section, research questions 1-4 will be presented as the basis for discussion on the level of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook. Then follows is a discussion of research question 5 which addresses the building of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook. This will be done by presenting information on the social, physical and personal predictors that build these constructs. Next is information pertaining to research question 6 which determines the factors that comprise residential satisfaction, sense of community, sense of belonging and sense of place. Finally, research question 7 addresses the relationship between residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook. A summary of the discussion will be followed by limitations of the study, further research and theoretical and practical implications of this research.

Community Profile

Group differences.

Differences between the villages of Ellenbrook in regards to residential satisfaction, sense of community, sense of belonging and sense of place were examined to determine if the different village designs influenced the degree to which the residents experienced each variable. Results indicated no significant difference between the villages on these variables. This indicates that residents identify with the suburb of Ellenbrook as a whole rather than the individual village in which they reside. This does not support previous research which has examined these variables and found group differences are present in a community (Billig, 2005; Glynn, 1981, 1986; Kingston et al., 1999; Long & Perkins, 2007; Shamai & Ilatov, 2005). Group differences were reported because they have either examined groups from different communities such as low socio-economic compared to high socio-economic areas (Billig, 2005; Kingston et al., 1999; Shamai & Ilatov, 2005), examined individual group differences within a community such as Black residents compared to White residents (Long & Perkins, 2007), or studied local residents as compared to new immigrants (Shamai & Ilatov, 2005). There is little variance in terms of individual differences (i.e., socioeconomic background and ethnicity) among Ellenbrook residents. This homogeneity of the population may explain why no group differences were found. This is supported by research which shows that residents from the same neighbourhood who are similar in regard to individual variables (i.e., education level and socio economic status) and neighbourhood related variables (i.e., physical characteristics of the community and the presence of neighbourhood associations) develop a strong neighbourhood identification (Glynn, 1986; Kingston et al., 1999). That is, they identify with their community collectively rather than on the individual area in which they reside. Therefore, Ellenbrook residents may have developed strong neighbourhood identification.

The lack of group differences, despite the different physical structures of each village within Ellenbrook is supported in research by Glynn (1981, 1986) who examined the following community characteristics: geography (location of the community), patterns of interaction (design of the community to promote interaction among residents), history (age of the community), function (i.e., residential suburb) and autonomy (i.e., self sufficient or government funded) and their impact on residential satisfaction. Concerning geography, each village of Ellenbrook is not geographically

different; they are situated in the same suburb. For patterns of interaction, each village is designed to promote contact and communication among residents. All villages serve the same residential function and are collectively a part of the residential suburb of Ellenbrook. Each village is not autonomous in that they rely on government funding for services; one village is not more self-sufficient than another. However, historically each village was developed at different stages over several years (1995 – 2010). Despite this, residents perceive Ellenbrook as a whole and therefore, identify the suburb as being a new community rather than one village being older than another.

Summary.

The results suggest that within each village of Ellenbrook there is little difference with regard to residential satisfaction, sense of community, sense of belonging and sense of place. Group differences in this study may not have emerged because residents identify with Ellenbrook as a whole rather than the individual village in which they reside. Another reason maybe because of the homogeneity of the Ellenbrook population, residents have developed strong neighbourhood identification. The next section discusses the level of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook. In addition, the factors that contribute to the development of these concepts within Ellenbrook are discussed.

Research Questions 1-4: What is the level of Sense of Community, Sense of Belonging, Sense of Place and Residential Satisfaction within Ellenbrook?

The mean score for sense of community in this study was 66.21 (range 18 to 90). This higher score indicates that residents experience an increased sense of community within Ellenbrook (Buckner, 1988). The mean score for sense of place within Ellenbrook was 40.66 (range 12 to 60). This higher score indicates an increased sense of place within Ellenbrook (Jorgensen & Stedman, 2001). The mean score for sense of belonging within Ellenbrook was 103.25 (range 33 to 132), indicating a higher sense of belonging exists within Ellenbrook (Hagerty & Patusky, 1995). The mean score for residential satisfaction in this study is 114.71 (range 27 to 135), suggesting that more residents are satisfied with Ellenbrook than dissatisfied (Vreugdenhil & Rigby, 1987).

As Ellenbrook was developed specifically to promote these concepts, the high scores indicate that Ellenbrook is performing as designed. It was important to assess the residents' point of view as to whether their expectation of the 'ideal' community

matched the reality once they moved in, to determine whether they were satisfied with their decision to move to a planned community, and as such are satisfied with their new community. Based on these results, satisfaction appears to be the case. Within Australia, there has been an increasing shift towards planned communities (Eves, 2007; Rosenblatt et al., 2009) and based on these results, is a trend that should continue. The high sense of community, sense of belonging, sense of place and residential satisfaction experienced in Ellenbrook are the result of social, physical and personal predictors.

Research Question 5: What Builds Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place in a Planned Community?

Social predictors.

The social predictors examined in this study included community participation, social support, belongingness and community attachment as identified by previous research (Albanesi et al., 2007; Amerigo & Aragones, 1997; Bailey & McLaren, 2005; Bardo & Hughey, 1984; Brodsky et al., 1999; Bruin & Cook, 1997; Farrell et al., 2004; Grillo et al., 2010; Hagerty et al., 1996; Hay, 1998b; Jorgensen et al., 2007; Kianicka et al., 2006; Kissane & McLaren, 2006; Mellor et al., 2008; Obst et al., 2002a; Ohmer, 2007; Perkins & Long, 2002; Post, 2008; Potter & Cantarero, 2006; Prezza & Costantini, 1998; Shamai & Ilatov, 2005; Stedman, 2003; Tartaglia, 2006; Warin et al., 2000; Wood et al., 2010).

Community participation such as belonging to a community group or voluntary association and/or using recreational facilities helps a person define themselves in terms of their interpersonal relationships and substantiates their sense of being valued (Amerigo & Aragones, 1997; Burby et al., 1975; Chubb & Fertman, 1992; Fried, 1984; Grillo et al., 2010; Hagerty et al., 1996; Kissane & McLaren, 2006; La Grange & Ming, 2001; Potter & Cantarero, 2006; Unger & Wandersman, 1985; Wasserman, 1982). As a result, this leads to the development of residential satisfaction, sense of community, sense of belonging and sense of place (Amerigo & Aragones, 1997; Burby et al., 1975; Chubb & Fertman, 1992; Fried, 1984; Grillo et al., 2010; Hagerty et al., 1996; Kissane & McLaren, 2006; La Grange & Ming, 2001; Potter & Cantarero, 2006; Unger & Wandersman, 1985; Wasserman, 1982). Results indicated that Ellenbrook residents involved in the community experienced more residential satisfaction, sense of community, sense of belonging and sense of place than those not involved in the

community. Further examination showed that 81.3% of participants involved in the community indicated that they had something of value to offer the community and would like to make a difference. Additionally, 95.4% indicated that they possessed qualities that may be important to others and 92.7% felt they were valued or important to their friends. This supports the research that those involved in the community develop a sense of being valued, which increases their residential satisfaction, sense of community, sense of belonging and sense of place (Amerigo & Aragonés, 1997; Burby et al., 1975; Chubb & Fertman, 1992; Fried, 1984; Grillo et al., 2010; Hagerty et al., 1996; Kissane & McLaren, 2006; La Grange & Ming, 2001; Potter & Cantarero, 2006; Unger & Wandersman, 1985; Wasserman, 1982).

The high level of residential satisfaction ($M = 114.71$), sense of community ($M = 66.21$), sense of belonging ($M = 103.25$) and sense of place ($M = 40.66$), is the result of most participants (78.3%) perceiving Ellenbrook as having appropriate recreational facilities with a range of organisations available in the community. Research shows that residents who perceive their community as having a social environment and available recreational facilities are more likely to engage in community activities, thereby increasing residential satisfaction, sense of community, sense of belonging and sense of place (Lewicka, 2010; Post, 2008; Semenza & March, 2009; Stedman, 2003). However, merely participating in an activity does not enhance these concepts, it also involves a person's willingness and motivation to be involved (Albanesi et al., 2007; Bailey & McLaren, 2005; Brodsky & Marx, 2001; Chavis & Wandersman, 1990; Davidson & Cotter, 1991; Hughey et al., 1999; Long & Perkins, 2007; Ohmer, 2007; Perkins & Long, 2002; Prezza et al., 2001; Prezza & Costantini, 1998; Unger & Wandersman, 1985; Wood et al., 2010). For example, in a study on physical activity as a predictor of sense of belonging, results suggested that it was not performing physical exercise with others, but the actual motivation to belong that predicted sense of belonging (Bailey & McLaren, 2005). Those who wanted to belong actively found others interested in physical activity (Bailey & McLaren, 2005; Lim, 2007). In Ellenbrook, 86.3% of participants stated that they want to be a part of the community indicating that a large number of people are willing and motivated to meet and interact with their neighbours, which may explain the high levels of residential satisfaction, sense of community, sense of belonging and sense of place.

The development of residential satisfaction, sense of community, sense of belonging and sense of place is also the result of friendship networks within a

community as they provide a source of emotional and instrumental social support (Farrell et al., 2004; Grillo et al., 2010; Jorgensen et al., 2007; Kianicka et al., 2006; Lewicka, 2010; Long & Perkins, 2007; Mak et al., 2009; McLaren et al., 2001; Obst & White, 2007; Ohmer, 2007; Perkins & Long, 2002; Post, 2008; Potter & Cantarero, 2006; Rankin et al., 2000; Semenza & March, 2009; Shamai & Ilatov, 2005; Steger & Kashdan, 2009; Warin et al., 2000; Wen Li et al., 2010). In Ellenbrook, 86.3% of participants indicated that they regularly stop and talk with people; 78.7% borrow items and exchange favours with their neighbours; and 98% indicated that their neighbours would help in an emergency. These results showed that many residents experience emotional and instrumental social support due to neighbourhood interaction, resulting in the high level of residential satisfaction, sense of community, sense of belonging and sense of place, and thus supporting the literature (Bonaiuto et al., 1999; Bonnes et al., 1991; Braubach, 2007; Brown et al., 2003; Chapman & Lombard, 2006; da Luz Reis & Lay, 2010; Hourihan, 1984; James et al., 2009; Jorgensen et al., 2007; Lewicka, 2010; Ng, 2010; Perez et al., 2001; Post, 2008; Semenza & March, 2009; Uzzell et al., 2002; Wen Li et al., 2010).

Strong social networks also result in the development of belongingness and attachment, which leads to the development of residential satisfaction, sense of community, sense of belonging and sense of place (Aiello et al., 2010; Albanesi et al., 2007; Allen, 1991; Brown & Cropper, 2001; Brown et al., 2005; Farrell et al., 2004; Filkins et al., 2000; Grillo et al., 2010; Grzeskowiak et al., 2003; Hourihan, 1984; Hughey & Bardo, 1984; McCrea et al., 2005; Mellor et al., 2008; Obst et al., 2002a; Ohmer, 2007; Perkins & Long, 2002; Phillips et al., 2004; Potter & Cantarero, 2006; Tartaglia, 2006; Wood et al., 2010). In Ellenbrook, 90.3% of participants considered they were a part of the mainstream society, and 92.7% stated that people accepted them, so they belonged in the community. These results support previous research that residents who consider they belong to their community experience higher levels of residential satisfaction, sense of community, sense of belonging and sense of place (Albanesi et al., 2007; Evans, 2009; Farrell et al., 2004; Grillo et al., 2010; Hay, 1998a, 1998b; Long & Perkins, 2007; Mellor et al., 2008; Ohmer, 2007; Semenza & March, 2009; Vanclay, 2008; Warin et al., 2000; Wen Li et al., 2010).

Regarding attachment, examination of the place attachment subscales within the Sense of Place Scale (Jorgensen & Stedman, 2001) indicated that only 4.0% of residents disagreed that they felt relaxed within Ellenbrook, 7.6% disagreed that they felt happiest

in Ellenbrook, 14.3% disagreed that Ellenbrook was their favourite place, and 22.4% indicated that they really missed Ellenbrook when away too long, showing most participants are attached to Ellenbrook. Additionally, results showed that residents are attached to Ellenbrook as 90.3% of participants indicated that the friendships and associations they have with other people in Ellenbrook are meaningful to them. Attachment may also be inferred as 66.3% of residents have children, which research has shown connects one to the community through schooling, friendships and activities (Lu, 1999; Marans & Rodgers, 1975; Perkins & Long, 2002; Prezza & Costantini, 1998; Robinson & Wilkinson, 1995; Wilson-Doenges, 2000). Therefore, these results support previous research that strong attachments to the community result in higher levels of residential satisfaction, sense of community, sense of belonging and sense of place (Albanesi et al., 2007; Brodsky & Marx, 2001; Glynn, 1981; Long & Perkins, 2007; Nasar, 2003; O'Grady & Fisher, 2008; Ohmer, 2007; Prezza & Costantini, 1998; Wood et al., 2010).

Attachment also occurs in communities of low mobility as only a small number of people move out of an area frequently whereas in communities of high mobility, residents have little time or opportunity to form attachments (Farrell et al., 2004; Gustafson, 2009; Lev-Wiesel, 1998; Long & Perkins, 2007; Wilson-Doenges, 2000). Results in this study showed that 88.3% of residents do not want to move out of Ellenbrook, indicating residential stability within the suburb. As the majority of residents are attached to Ellenbrook, and there is residential stability, this contributes to the high level of residential satisfaction, sense of community, sense of belonging and sense of place experienced within Ellenbrook, thus supporting previous research (Clark & Stein, 2003; Cuba & Hummon, 1993; Gustafson, 2009; Lewicka, 2010; Long & Perkins, 2007; Sagy et al., 1996; Sampson, 1988; Semenza & March, 2009; Wasserman, 1982; Wen Li et al., 2010; Wulfhorst et al., 2006).

Physical predictors.

The physical predictors of residential satisfaction, sense of community, sense of belonging and sense of place that were examined in this study included fear of crime, community layout and design, housing density and quality of housing. Previous research has suggested that these physical predictors influence the level of residential satisfaction, sense of community, sense of belonging and sense of place experienced within a community (Braubach, 2007; Brown et al., 2003; Butterworth, 2000; Carro et

al., 2010; da Luz Reis & Lay, 2010; Fincher & Gooder, 2007; Harrison et al., 2007; James et al., 2009; Jiven & Larkham, 2003; Jorgensen & Stedman, 2006; Lewicka, 2010; Ling, 2008; Manzo & Perkins, 2006; Mee, 2009; Ng, 2010; Pendola & Gen, 2008; Post, 2008; Potter & Cantarero, 2006; Tartaglia, 2006; Wedlock, 2006; Wood et al., 2010).

Residents with minimal fear of crime in their communities experience feelings of safety and security, and as result, participate in the community, interact with other residents and develop stronger attachment to the community (Adriaanse, 2007; Braubach, 2007; Brown et al., 2003; Cameron & MacDougall, 2000; Carro et al., 2010; Chapman & Lombard, 2006; Harrison et al., 2007; James et al., 2009; Lewicka, 2010; Manzo & Perkins, 2006; McCrea et al., 2005; Mulvey, 2002; Potter & Cantarero, 2006; Uzzell et al., 2002; Wedlock, 2006; Wilson-Doenges, 2000; Wood et al., 2010). If an individual feels physically at risk in a community, they retreat indoors, reducing social interaction and the development of social ties (Adriaanse, 2007; Braubach, 2007; Brown et al., 2003; Carro et al., 2010; Chapman & Lombard, 2006; Harrison et al., 2007; James et al., 2009; Lewicka, 2010; Manzo & Perkins, 2006; McCrea et al., 2005; Mulvey, 2002; Potter & Cantarero, 2006; Uzzell et al., 2002; Wedlock, 2006; Wilson-Doenges, 2000; Wood et al., 2010). This leads to low residential satisfaction, sense of community, sense of belonging and sense of place (Adriaanse, 2007; Braubach, 2007; Brown et al., 2003; Cameron & MacDougall, 2000; Carro et al., 2010; Chapman & Lombard, 2006; Harrison et al., 2007; James et al., 2009; Lewicka, 2010; Manzo & Perkins, 2006; McCrea et al., 2005; Mulvey, 2002; Potter & Cantarero, 2006; Uzzell et al., 2002; Wedlock, 2006; Wilson-Doenges, 2000; Wood et al., 2010). Examination of the data revealed that only 2.4% of Ellenbrook residents reported that the suburb was an unsafe place to live. As the majority of residents considered Ellenbrook safe and indicated that they interact with others in the community, this explains the high level of residential satisfaction, sense of community, sense of belonging and sense of place in Ellenbrook, thus supporting previous research (Adriaanse, 2007; Braubach, 2007; Brown et al., 2003; Cameron & MacDougall, 2000; Carro et al., 2010; Chapman & Lombard, 2006; Harrison et al., 2007; James et al., 2009; Lewicka, 2010; Manzo & Perkins, 2006; McCrea et al., 2005; Mulvey, 2002; Potter & Cantarero, 2006; Uzzell et al., 2002; Wedlock, 2006; Wilson-Doenges, 2000; Wood et al., 2010).

The layout and design of a community, such as an adequate number of public spaces, services and amenities within walking distance, and accessible and safe walking

routes, provides symbolic meanings for residents, creates a sense of identity and attachment to the community, enables residents to feel safe, encourages social interaction and enhances community connectedness, which contributes to the development of residential satisfaction, sense of community, sense of belonging and sense of place (Adriaanse, 2007; Brown & Cropper, 2001; Butterworth, 2000; Chapman & Lombard, 2006; City of Wodonga, 2008; da Luz Reis & Lay, 2010; Jiven & Larkham, 2003; Jorgensen et al., 2007; Jorgensen & Stedman, 2006; Lewicka, 2010; Li, 2008; Ling, 2008; Motloch, 2001; Ng, 2010; Post, 2008; Queensland University of Technology, 2008; Semenza & March, 2009; Tartaglia, 2006; Uzzell et al., 2002; Wen Li et al., 2010; Wood et al., 2010). As Ellenbrook is a planned community, the layout and design have been carefully considered to include such aspects. For example, services and amenities are within walking distance encouraging residents to walk, which promotes the development of ties to the community through social interaction. This is reflected in that 99% of participants reported that Ellenbrook was a pleasant place in which to walk thus supporting previous research that the design and layout of a community can increase residential satisfaction, sense of community, sense of belonging and sense of place within a community (Adriaanse, 2007; Braubach, 2007; Brown & Cropper, 2001; Butterworth, 2000; Chapman & Lombard, 2006; da Luz Reis & Lay, 2010; James et al., 2009; Jorgensen et al., 2007; McCrea et al., 2005; Mulvey, 2002; Perez et al., 2001; Post, 2008; Potter & Cantarero, 2006; Tartaglia, 2006; Uzzell et al., 2002; Wood et al., 2010).

Satisfaction with the aesthetic appeal of Ellenbrook is reflected by 98.6% of participants indicating that Ellenbrook should not be redesigned. In terms of the attractiveness of the place, 98.3% considered Ellenbrook a beautiful place in which to live, and 93% indicated Ellenbrook to be one of Western Australia's most attractive places. Additionally, 92.9% of residents reported Ellenbrook as a very clean place. These findings support previous research that the attractiveness of a place, including the neatness and cleanliness of the community, increases the level of residential satisfaction, sense of community, sense of belonging and sense of place (Adriaanse, 2007; Braubach, 2007; Brown & Cropper, 2001; Butterworth, 2000; da Luz Reis & Lay, 2010; Grzeskowiak et al., 2006; Jorgensen et al., 2007; Post, 2008; Tartaglia, 2006; Uzzell et al., 2002; Wood et al., 2010).

Research has shown that low and medium density housing increases residential satisfaction, sense of community, sense of belonging and sense of place as they provide

privacy, reduced noise levels, less crowding and less strain on community services and facilities (Bonaiuto et al., 1999; Bonnes et al., 1991; Braubach, 2007; Brodsky et al., 1999; Chapman & Lombard, 2006; da Luz Reis & Lay, 2010; Hourihan, 1984; James et al., 2009; Pendola & Gen, 2008; Perez et al., 2001; Sagy et al., 1996; Uzzell et al., 2002; Wood et al., 2010). High density housing on the other hand, causes loneliness as one feels 'lost' in the crowd, and reduces social trust and neighbourly behaviour due to minimal opportunities to develop meaningful social interactions (Fincher & Gooder, 2007; Mee, 2009; Ng, 2010). Results indicate that 91.3% of residents claim there is enough privacy in Ellenbrook, and as Ellenbrook consists of medium density housing within the residential villages, demonstrates that lower density housing contributes to residential satisfaction, sense of community, sense of belonging and sense of place, thus supporting previous research (Brodsky et al., 1999; Fincher & Gooder, 2007; Kasarda & Janowitz, 1974; Ng, 2010; Pendola & Gen, 2008; Sagy et al., 1996; Wood et al., 2010).

Areas with high housing quality are reportedly more visually and socially appealing (Bonaiuto et al., 1999; Bonnes et al., 1991; Braubach, 2007; Brown et al., 2003; Chapman & Lombard, 2006; da Luz Reis & Lay, 2010; James et al., 2009; Jorgensen et al., 2007; Lewicka, 2010; Ng, 2010; Perez et al., 2001; Post, 2008; Semenza & March, 2009; Uzzell et al., 2002; Wen Li et al., 2010). As a result, residents are more likely to utilise the environmental features such as gardens and parks and walk in their community, providing opportunities to develop an attachment to their community and engage with others, which increases residential satisfaction, sense of community, sense of belonging and sense of place (Bonaiuto et al., 1999; Bonnes et al., 1991; Braubach, 2007; Brown et al., 2003; Chapman & Lombard, 2006; da Luz Reis & Lay, 2010; Hourihan, 1984; James et al., 2009; Jorgensen et al., 2007; Lewicka, 2010; Ng, 2010; Perez et al., 2001; Post, 2008; Semenza & March, 2009; Uzzell et al., 2002; Wen Li et al., 2010). As 96.1% of residents were satisfied with the housing quality in Ellenbrook this supports previous research that housing quality contributes to the development of residential satisfaction, sense of community, sense of belonging and sense of place (Bonaiuto et al., 1999; Bonnes et al., 1991; Braubach, 2007; Chapman & Lombard, 2006; da Luz Reis & Lay, 2010; Hourihan, 1984; James et al., 2009; Ng, 2010; Perez et al., 2001; Uzzell et al., 2002).

Personal predictors.

The personal predictors examined were tenure, length of residence, ethnicity, age, education level, number of people known in the community, income, gender and marital status as research suggests they influence residential satisfaction, sense of community, sense of belonging and sense of place (BeLue et al., 2006; Billig, 2005; Brodsky et al., 2002; Brown et al., 2005; Chapman & Lombard, 2006; Elsinga & Hoekstra, 2005; Fox, 2002; Gustafson, 2009; Hagerty et al., 2002; Kianicka et al., 2006; Kissane & McLaren, 2006; La Grange & Ming, 2001; Lev-Wiesel, 2003; Lewicka, 2010; Long & Perkins, 2007; Mak et al., 2009; Newman et al., 2007; O'Grady & Fisher, 2008; Peterson et al., 2008; Potter & Cantarero, 2006; Prezza et al., 2009; Ross, 2002; Shamaï & Ilatov, 2005; Wiles et al., 2009).

Homeowners are often more attached to their community as they are usually more financially secure, have an increased likelihood of social involvement, develop relationships with neighbours and have less residential mobility, which enhances residential satisfaction, sense of community, sense of belonging and sense of place (Bolan, 1997; Bonaiuto et al., 1999; Brodsky et al., 2002; Brodsky et al., 1999; Brown et al., 2003; Elsinga & Hoekstra, 2005; Evans, 2009; Fox, 2002; Harkness & Newman, 2003; Hay, 1998b; James et al., 2009; La Grange & Ming, 2001; Lewicka, 2010; Lu, 1998; Mallett, 2004; Mesch & Manor, 1998; Robinson & Wilkinson, 1995; Unger & Wandersman, 1985; Wasserman, 1982). Examination of the data revealed there were no differences in levels of residential satisfaction, sense of community, sense of belonging and sense of place among Ellenbrook residents who owned their own home and those who did not, which is contrary to previous research (Bolan, 1997; Bonaiuto et al., 1999; Brodsky et al., 2002; Brodsky et al., 1999; Brown et al., 2003; Elsinga & Hoekstra, 2005; Evans, 2009; Fox, 2002; Harkness & Newman, 2003; Hay, 1998b; James et al., 2009; La Grange & Ming, 2001; Lewicka, 2010; Lu, 1998; Mallett, 2004; Mesch & Manor, 1998; Robinson & Wilkinson, 1995; Unger & Wandersman, 1985; Wasserman, 1982). As 82% of the participants owned their own home, this may suggest why no group differences were found. Additionally, 88% of participants know other people in the community, which may also explain why no group differences were found as residents, regardless of their homeownership status, have developed an attachment to Ellenbrook through community participation.

The data indicated that the length of time a person has lived in Ellenbrook did not increase residential satisfaction, sense of community, sense of belonging and sense of place. This does not support previous research which has found that longer-term residents experience more residential satisfaction, sense of community, sense of belonging and sense of place (Amerigo & Aragones, 1997; Brown et al., 2005; Filkins et al., 2000; Goudy, 1982; Gustafson, 2009; Hay, 1998b; Hummon, 1992; Jorgensen & Stedman, 2006; Lewicka, 2005, 2010; McCrea et al., 2005; Ortiz et al., 2004; Oswald et al., 2005; Potter & Cantarero, 2006; Puddifoot, 1994; Sampson, 1988; Shamai & Ilatov, 2005; Wen Li et al., 2010; Wiles et al., 2009). Further examination of the data indicated that the average length of residence in Ellenbrook was 2.65 years. As this time frame reflects minimal difference between longer-term residents and newcomers, this is possibly why no group differences were found. However, it has been determined that the average time to settle in a new location and establish roots is between 6 to 18 months, with some people adjusting and adapting more easily to the new situation (Bolan, 1997; Gustafson, 2009). It is likely that residents have moved beyond the 'settling in' period and are now developing attachments to Ellenbrook. Therefore, it appears that attachment to the community, rather than length of residence, is a determinant towards residential satisfaction, sense of community, sense of belonging and sense of place, thus supporting previous research on attachment (Amerigo & Aragones, 1997; Brown et al., 2005; Filkins et al., 2000; Goudy, 1982; Gustafson, 2009; Hay, 1998b; Hummon, 1992; Jorgensen & Stedman, 2006; Lewicka, 2005, 2010; McCrea et al., 2005; Ortiz et al., 2004; Oswald et al., 2005; Potter & Cantarero, 2006; Puddifoot, 1994; Sampson, 1988; Shamai & Ilatov, 2005; Wen Li et al., 2010; Wiles et al., 2009).

Ethnicity was also not a significant factor related to residential satisfaction, sense of community, sense of belonging and sense of place. This does not support previous research that group differences among ethnicities exist, in that Caucasian residents have higher residential satisfaction, sense of community, sense of belonging and sense of place than non-Caucasian residents (BeLue et al., 2006; Davidson & Cotter, 1986, 1991; Davidson et al., 1991; Fisher & Sonn, 2007; Hausmann et al., 2009; Hur & Morrow-Jones, 2008; Long & Perkins, 2007; Lu, 1999; Mohan & Twigg, 2007; Nanzer, 2004; Wasserman, 1982; Wen Li et al., 2010). Examination of the data shows there to be little variance in terms of individual differences among Ellenbrook residents; they have similar ethnicity, 89% having an Anglo-European background. Therefore, the

homogeneity of the Ellenbrook population may explain why no group differences were found. Research has shown that in neighbourhoods where racial groups are similar, attachments to the community are higher (Brown et al., 2003; Fisher & Sonn, 2007; Manzo & Perkins, 2006). Therefore, the homogeneity of population may also explain the high level of attachment felt by residents in Ellenbrook indicating that attachment, rather than ethnicity, is a stronger predictor.

A person's age did not influence the level of residential satisfaction, sense of community, sense of belonging and sense of place experienced. Some research supports this contention (Hagerty et al., 1996; Mak et al., 2009; Nasar & Julian, 1995; Oswald et al., 2005; Prezza & Costantini, 1998), but most reported that older residents experience more residential satisfaction, sense of community, sense of belonging and sense of place than younger residents, as they usually have more commitment to the community as a result of living in the community longer (Brodsky et al., 2002; Brown et al., 2005; Chapman & Lombard, 2006; Filkins et al., 2000; Gustafson, 2009; James, 2008; La Grange & Ming, 2001; Lewicka, 2005; Long & Perkins, 2007; Nanzer, 2004; Perez et al., 2001; Perkins & Long, 2002; Prezza et al., 2001; Ross, 2002; Shamai & Ilatov, 2005; Wiles et al., 2009). As mentioned earlier, participants length of residence is relatively short (2.65 years), regardless of their age. As older residents have not lived in Ellenbrook longer they have not developed more commitment to the community than younger residents, possibly why no group differences were found between younger and older residents.

No differences existed for educational level and the amount of residential satisfaction, sense of community, sense of belonging and sense of place experienced in Ellenbrook. Previous findings have produced varied results. For example, some studies have found that the higher the educational level a person possesses, the more residential satisfaction they experience (Chapman & Lombard, 2006; Lu, 1999; Perez et al., 2001). Other research has found that the higher the educational level of a person, the less satisfied they are as a result of having higher expectations, resulting in them being more critical of their community (Aiello et al., 2010; Filkins et al., 2000; Hur & Morrow-Jones, 2008). Higher educational level has also been found to result in less sense of community due to those with a higher education having less dependence on the community to meet their needs (Bishop et al., 1997; Buckner, 1988; Prezza & Costantini, 1998; Robinson & Wilkinson, 1995). However, results from another study found that people with lower education levels had stronger attachments to the

community, which leads to higher levels of sense of place being experienced (Williams et al., 1992). This study does not support these previous findings; however, it supports research that found educational level was not significant in developing a residential satisfaction, sense of community, sense of belonging and sense of place (Fried, 2000; Goudy, 1982; Hagerty et al., 1996; Lewicka, 2005, 2010; Mak et al., 2009; Peterson et al., 2008). Therefore, it appears that other factors besides educational level are stronger predictors for residential satisfaction, sense of community, sense of belonging and sense of place.

The number of people known in the community did not influence the level of residential satisfaction and sense of place experienced in Ellenbrook. This does not support previous research that the more friends known in the community, the higher the residential satisfaction and sense of place (Allen, 1991; Cuba & Hummon, 1993; Filkins et al., 2000; Goudy, 1982; Grzeskowiak et al., 2003; Hay, 1998b; Kasarda & Janowitz, 1974; Kianicka et al., 2006; Mesch & Manor, 1998; Sampson, 1988; Semenza & March, 2009; Wen Li et al., 2010; Widgery, 1982). Despite 88% of participants knowing others within Ellenbrook, differences were not found indicating that other factors determine residential satisfaction and sense of place. For example, as mentioned earlier, regardless of the number of people known in the community, many are involved in the community which results in community attachment. Therefore, attachment and community participation, rather than number of people known in the community, may be a stronger predictor of residential satisfaction and sense of place. Results, however, demonstrated that participants who knew more people in the community of Ellenbrook experienced higher levels of sense of community and sense of belonging, supporting previous research (Albanesi et al., 2007; Brodsky & Marx, 2001; Davidson & Cotter, 1991; Itzhaky, 1997; Lev-Wiesel, 2003; Long & Perkins, 2007; Nasar & Julian, 1995; O'Grady & Fisher, 2008; Ohmer, 2007; Prezza & Costantini, 1998; Unger & Wandersman, 1985). This indicates that the number of people known in the community is more influential in the development of sense of community and sense of belonging than in residential satisfaction and sense of place.

Income level was also not found to determine the amount of sense of place and residential satisfaction experienced within Ellenbrook. While few studies have examined the impact of income level on sense of place, this finding supports the three previous studies which found that income level does not contribute to the development of sense of place (Brown et al., 2003; Fried, 2000; Lewicka, 2005). Therefore, it can be

surmised that other factors have a stronger influence on sense of place than income level. Regarding residential satisfaction, this finding supports one study in which income level was not statistically significant concerning residential satisfaction (Mohan & Twigg, 2007). However, it does not support the majority of the research in which those of higher socio-economic status experience increased levels of residential satisfaction (Billig, 2005; Braubach, 2007; James, 2008; Kingston et al., 1999; Mohan & Twigg, 2007; Perez et al., 2001; Schwirian & Schwirian, 1993; Shamai & Ilatov, 2005). The current research results do not support research by Hur and Morrow-Jones (2008) who found higher income levels results in less residential satisfaction. As with sense of place, this indicates other factors beside income level are more influential in the development of residential satisfaction. Even studies identifying income level as being significant in terms of residential satisfaction have found social dimensions such as community involvement more significant in developing residential satisfaction (Filkins et al., 2000; Goudy, 1977, 1990).

It was found that participants with a higher income level experienced higher levels of sense of community and sense of belonging thereby supporting previous research (BeLue et al., 2006; Brodsky et al., 2002; Davidson & Cotter, 1986, 1991; Davidson et al., 1991; Gustafson, 2009; Hagerty et al., 1996; Hagerty et al., 2002; La Grange & Ming, 2001). Research has shown that low income residents are over-represented by the unemployed, and as a result are prevented from obtaining desired material goods they perceive the majority of the population to possess. Therefore, they often feel excluded from the mainstream group and that they do not belong, resulting in a diminished sense of community and sense of belonging (Davidson & Cotter, 1986; Hagerty et al., 2002). A low income also limits people from participating in activities that promote social integration which results in a perception of being different, not fitting in, nor feeling valued and important (Hagerty et al., 2002). It is possible that people within Ellenbrook on a lower income level participate less in various activities that promote social integration. As a result they may feel excluded and that they do not belong, resulting in lower levels of sense of community and sense of belonging.

In this study, there were no differences in terms of gender and level of sense of belonging and sense of place experienced, thereby supporting previous research (Brown et al., 2003; Freeman et al., 2007; Hagerty et al., 1996; Lewicka, 2010; Nanzer, 2004; Oswald et al., 2005; Ross, 2002). Further examination of the data revealed that only 80 (27%) males participated compared to 220 (73%) females. The larger proportion of

women participating in this study may explain why group differences were not found. However, as this finding supports previous research also not finding a significant difference between males and females in regards to sense of belonging and sense of place (Brown et al., 2003; Hagerty et al., 1996; Lewicka, 2010; Nanzer, 2004; Oswald et al., 2005) it is possible that gender is not a predictor.

However, gender differences were found for residential satisfaction and sense of community. Regarding residential satisfaction, females reported higher levels than males. As suggested by previous studies, females have stronger emotional bonding processes and a greater emotional attachment to their community, hence experiencing more residential satisfaction (Aiello et al., 2010; Filkins et al., 2000; Fowler, 1991; Perez et al., 2001). Therefore, it can be surmised that female bonding and emotional attachment processes is a strong predictor of residential satisfaction in Ellenbrook. For sense of community, however, this finding does not support previous studies which conclude gender does not contribute to sense of community (Mak et al., 2009; Nasar & Julian, 1995; Peterson et al., 2008; Prezza & Costantini, 1998). However, two studies have found that women living in a gated community experience higher levels of sense of community than male residents (Prezza & Costantini, 1998; Wilson-Doenges, 2000). Differences may be due to feelings of safety which are of greater importance for females than males (Carro et al., 2010; Shenassa et al., 2006). Feelings of safety have been shown to contribute to the development of sense of community (Brodsky, 1996; Unger & Wandersman, 1985; Wilson-Doenges, 2000). While Ellenbrook is not a gated community, a feeling of safety exists as only 2.4% of residents considered Ellenbrook was an unsafe place to live. As women feel Ellenbrook is a safe place to live, this may explain the group differences. Therefore, the issue of safety rather than gender may have a stronger influence in the development of sense of community.

Concerning marital status, no significant difference with residential satisfaction was found. This finding does not support previous research that married couples report more residential satisfaction than single persons (Hourihan, 1984; Lu, 1999; Marans & Rodgers, 1975). Therefore, other factors are more influential in the development of residential satisfaction within Ellenbrook. Research has shown that married couples are more attached to a community, especially if they have children; this binds them to the community through schooling, friendships and extra-curricular activities (Hourihan, 1984; Lu, 1999; Marans & Rodgers, 1975). Therefore, it appears that attachment to the community, rather than marital status is a stronger determinant of residential satisfaction

(Amerigo & Aragones, 1997; Brown et al., 2005; McCrea et al., 2005; Potter & Cantarero, 2006).

The results, however, indicated that marital status determined sense of community, sense of belonging and sense of place. This supports previous research that married couples experience more sense of community, sense of belonging and sense of place than single people as they usually participate more in the community and are less likely to move out of the area (BeLue et al., 2006; Clark & Stein, 2003; Cuba & Hummon, 1993; Farrell et al., 2004; Hagerty et al., 1992; Kissane & McLaren, 2006; Loomis et al., 2004; McLaren et al., 2001; Mesch & Manor, 1998; Nasar & Julian, 1995; Prezza et al., 2001; Prezza et al., 2009; Robinson & Wilkinson, 1995; Wulforth et al., 2006). Marriage also offers a source of social support and may act as a protective barrier against stress (Hagerty et al., 1992; Kissane & McLaren, 2006; McLaren et al., 2001). Therefore, marital status influences the development of sense of community, sense of belonging and sense of place rather than residential satisfaction.

Summary of the predictors of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook.

The social and physical factors: feelings of belonging, community attachment, community participation, fear of crime, community layout and design and housing density and quality contribute to the experience of high levels of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook. This finding supports previous research that a residents' perception of their community is based on physical and social factors and that these are intertwined to influence a person's level of residential satisfaction (Amerigo & Aragones, 1997; Braubach, 2007; Bruin & Cook, 1997; Grillo et al., 2010; Hughey & Bardo, 1987; James et al., 2009; Mellor et al., 2008; Potter & Cantarero, 2006; Puddifoot, 1994; Wasserman, 1982); sense of community (Butterworth, 2000; Farrell et al., 2004; Grillo et al., 2010; Long & Perkins, 2007; Ohmer, 2007; Pendola & Gen, 2008; Tartaglia, 2006); sense of belonging (Bailey & McLaren, 2005; Culhane & Dobson, 1991; Davidson et al., 1995; Grillo et al., 2010; Hagerty et al., 1996; Kissane & McLaren, 2006; Lim, 2007; Warin et al., 2000); and sense of place (Clark & Stein, 2003; Hay, 1998b; Jiven & Larkham, 2003; Jorgensen et al., 2007; Kianicka et al., 2006; Lewicka, 2010; Manzo & Perkins, 2006; Mellor et al., 2008; Post, 2008; Semenza & March, 2009; Shamaï & Ilatov, 2005; Vanclay, 2008).

Regarding personal factors, not all of these contributed to the development of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook. Despite some research identifying personal factors as contributing to these variables (Albanesi et al., 2007; Billig, 2005; Brodsky et al., 2002; Brown et al., 2004; Brown et al., 2005; Chapman & Lombard, 2006; Elsinga & Hoekstra, 2005; Filkins et al., 2000; Fisher & Sonn, 2007; Fox, 2002; Grzeskowiak et al., 2003; Gustafson, 2009; Harkness & Newman, 2003; Hausmann et al., 2009; Kianicka et al., 2006; La Grange & Ming, 2001; Lewicka, 2005, 2010; Long & Perkins, 2007; Mallett, 2004; Ohmer, 2007; Ortiz et al., 2004; Potter & Cantarero, 2006; Prezza et al., 2001; Ross, 2002; Shamai & Ilatov, 2005; Wiles et al., 2009), it was found that the personal factors of age, ethnicity, home ownership, length of residence and educational level did not contribute. These findings indicate that other personal factors develop these variables within Ellenbrook. It also indicates that social and physical factors are more influential than personal factors in the development of residential satisfaction, sense of community, sense of belonging and sense of place.

Of the personal factors that did contribute to the development of these variables, not one contributed to the development of all four variables within Ellenbrook. It was found that marital status contributed to the development of sense of community, sense of belonging and sense of place but not residential satisfaction (see Table 22). Further, this was the only personal factor found to contribute to the development of sense of place within Ellenbrook indicating that while personal factors may develop sense of place in some communities, the physical and social factors are more influential than personal factors in developing sense of place in the case of Ellenbrook.

Household income and number of people known in the community resulted in the development of sense of community and sense of belonging but not residential satisfaction and sense of place. Gender did not contribute to the development of sense of belonging and sense of place; however, it did for residential satisfaction and sense of community. This was the only personal factor found to be significant in the development of residential satisfaction within Ellenbrook. Similar to sense of place, this indicates that while personal factors may develop residential satisfaction in some communities, the physical and social factors are more influential than personal factors in developing residential satisfaction within Ellenbrook.

Table 22

Personal Predictors of Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place

Personal Predictors	Resi Sat	SOC	SOP	SOB
Marital Status		yes	yes	yes
Household Income		yes		yes
Gender	yes	yes		
Number of People Known		yes		yes

The above information has contributed to an understanding of the community profile of Ellenbrook, and the predictors of residential satisfaction, sense of community, sense of belonging and sense of place in a community setting. The following information will address the theoretical questions pertaining to the uniqueness and commonality of the sense of community, sense of belonging, sense of place and residential satisfaction variables.

Research Question 6: What Factors Comprise Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place within Ellenbrook?

An area that has not been investigated is the interrelation of sense of community, sense of belonging and sense of place and their impact on residential satisfaction. Models of residential satisfaction have alluded to the links between these concepts; however, they have not been researched together, particularly in an Australian setting (Bardo & Hughey, 1984; Filkins et al., 2000; Garcia et al., 1999; Vreugdenhil & Rigby, 1987). Examining the relation between these concepts will assist in providing an understanding of these community constructs. This study aimed to provide information about this complex phenomenon and contribute to the research examining the uniqueness and commonality of these dimensions. The exploratory factor analysis resulted in nine factors of which five appear to be dominant.

The first factor, Belonging, included all 18 items pertaining to the Sense of Belonging – Psychological (SOBI-P) subscale and one Sense of Belonging – Antecedent (SOBI-A) subscale item of the Sense of Belonging Instrument. As all SOBI-P items loaded on this factor, this supports the factor structure item loadings of the original study that developed this measure in that all 18 SOBI-P items loaded as one factor (Hagerty & Patusky, 1995). As the SOBI-P factor includes items pertaining to valued involvement and fit (Hagerty & Patusky, 1995) it can be seen how the one SOBI-A item “*I can make myself fit in anywhere*” also loaded on this factor as it also pertains to fit. Based on the item loadings on this factor, this demonstrates that they measure a single construct (i.e., sense of belonging). As a result, sense of belonging is unique to the other variables measured in this study.

Three other factors emerged in which only SOBI-A items loaded (see Table 23). Factor 5, labelled Acceptance, involved eight items relating to fitting in and being accepted. Factor 8, labelled Disinterested, involved three items relating to not wanting to be a part of the community and Factor 9, labelled Valued, involved items relating to feeling valued by community members and important in the community. While all the SOBI-A items did not load on one factor as they did in the original study (Hagerty & Patusky, 1995), they did, however, load on their own factor with no other items pertaining to the other variables. This shows that these items measure a single construct (i.e., sense of belonging) and as a result, sense of belonging is unique to the other variables measured in this study.

Table 23

Factor Loadings of Sense of Belonging - Antecedent

Factor	Item
Acceptance	Fitting in with people around me matters a great deal It is important to me that I fit somewhere in this world It is important to me that I am valued or accepted by others I feel badly if others do not value or accept me I am working on fitting in better with those around me It is important to me that my thoughts and opinions are valued I want to be a part of things going on around me All of my life I have wanted to feel like I really belonged somewhere
Disinterested	I just don't feel like getting involved with people I don't have the energy to work on being a part of things Relationships take too much energy for me
Valued	Generally, other people recognise my strengths and good points In the past, I have felt valued and important to others I have qualities that can be important to others

A belief that sense of belonging is subsumed under sense of community is a result of McMillan and Chavis' (1986) theoretical model of sense of community in which belonging is an element of the membership component of this model. However, it is argued that sense of belonging is different to this interpretation of belonging; therefore, it has a unique identity which was demonstrated in the various works by Hagerty and colleagues (Hagerty & Patusky, 1995; Hagerty et al., 1996). The results of this research, in which sense of belonging items load on their own factor, support this argument and current research.

The third factor, Community, comprised 11 of the 18 sense of community items. Further examination of these 11 items revealed that all five items on the Degree of Neighbouring subscale loaded, along with six of the 10 Psychological Sense of Community (PSOC) subscale items. As a result, it can be determined that the Degree of Neighbouring components of sense of community is a unique identity from sense of place, sense of belonging and residential satisfaction. Further examination of the six PSOC subscale items reveal them to be similar to Degree of Neighbouring subscale

items in that they are referring to people in their community. For example the PSOC items are: *“I feel loyal to the people in my suburb”*, *“I like to think of myself as similar to the people who live in this suburb”* and *“The friendships and associations I have with other people in my suburb mean a lot to me”*. As these six PSOC items are similar to Degree of Neighbouring, this may explain why they would load on this factor. In the original study, Buckner (1988) found only one factor to emerge despite drawing three dimensions of importance to sense of community: Degree of Neighbouring, Psychological Sense of Community and Attraction to Neighbourhood. As two of the subscales loaded on the one factor in this study, this supports Buckner’s work to a certain degree as it indicates that these dimensions of sense of community are unique from sense of belonging, sense of place and residential satisfaction. However, as the Attraction to Neighbourhood subscale loaded on factor two, labelled Satisfaction, as did the remaining PSOC items, and 15 of the 27 residential satisfaction items this suggests a shared communality between sense of community and residential satisfaction.

Further examination of the other PSOC subscale items, which loaded on the Satisfaction factor, reveal they focus on the individual rather than on one’s relationship with other community members, for example, *“I feel that I belong in this suburb”* and *“Living in this suburb gives me a sense of community”*. This may explain why these items would not load on the factor with the other PSOC items. The other sense of community items to load on this factor were the three Attraction to Neighbourhood subscale items, along with 15 residential satisfaction and four sense of place items. This indicates these sense of community items are not unique to sense of community but share some commonality with residential satisfaction and sense of place, as has been highlighted in the literature (Long & Perkins, 2003; Pretty et al., 2003). For example, given that attraction to one’s neighbourhood is a part of residential satisfaction this indicates that the Attraction to Neighbourhood items of sense of community has some commonality with residential satisfaction. Additionally, attraction is also a component of attachment to a community; thus it can be seen how these sense of community subscale items would load on a factor with the Place Attachment items of sense of place, as was the case in a study by Long and Perkins (2003). However, interpretation of this factor needs to be conducted with some caution, as the variables that loaded on this factor are bi-polar in that both positive and negative significant loadings exist. Additionally, half of the variables load on more than one factor and most variables appear to have some relationship with this factor making interpretation difficult.

Factor four, Dissatisfaction, included 10 of the 27 items relating to residential satisfaction. These items refer to negative aspects of a community such as “*This suburb is a terrible place for children*”, “*It is dangerous to live in this suburb*” and “*Living in this suburb is unpleasant*”. As these items did not load on the factors pertaining to sense of community, sense of belonging or sense of place, they may be unique to residential satisfaction. However, as they refer specifically to feelings of dissatisfaction they loaded on their own factor rather than with the other items pertaining to residential satisfaction. This possibly indicates that residential satisfaction is a multi-dimensional rather than a uni-dimensional construct. This does not support the original scale development study by Vreugdenhil and Rigby (1987) in which all the items loaded on one factor; however, they did indicate that when this instrument is applied in different communities, particularly those with more divergent cultural values and lifestyle, the items may not emerge as one general factor. Others (Amole, 2009; Hughey & Bardo, 1984; Obst, Smith, & Zinkiewicz, 2001; Obst & White, 2004) have also put forward this argument that the factor structure of community satisfaction may differ from place to place. As a result, the findings of this study appear to support the argument that the factor structure of residential satisfaction differs depending on the community.

Four Sense of Place items loaded on factor six, Dependence. Of these, three were Place Dependence subscale questions and one was a Place Attachment subscale item. As these items did not load on the factors pertaining to sense of community, sense of belonging or residential satisfaction this indicates they are unique to sense of place. However, as three items specifically refer to feelings of dependence they loaded on their own factor rather than with the other sense of place items. For the one Place Attachment item “*I really miss this suburb when I’m away from it for too long*”, it is unclear why this would load on this factor as it is not referring to Dependence. However, it is acknowledged that despite the concepts of place identity, place dependence and place attachment having distinctive characteristics, there is a degree of overlap (Bonnes & Secchiaroli, 1995; Goudy, 1990; Jorgensen & Stedman, 2001; Stinner & van Loon, 1992). This allows for the explanation for one Place Attachment item loading on this factor with the Place Dependence items. The original scale development study by Jorgensen and Stedman (2001) had three subscales indicating that sense of place is a multi-dimensional construct. Results of this study also support sense of place as a multi-dimensional construct; however, the Place Attachment items are not unique to sense of place as they load on factor two with residential satisfaction and sense of community.

Factor seven, Identity, also had only sense of place items load, these being three of the four Place Identity subscale questions within this instrument. The three questions were: “*This suburb says very little about who I am*”, “*Everything about this suburb is a reflection of me*” and “*This suburb reflects the type of person I am*”. As these items did not load on the factors pertaining to sense of community, sense of belonging or residential satisfaction, it indicates that they are unique to sense of place. However, as these items specifically refer to aspects of identity they loaded on their own factor rather than with the other sense of place subscales, indicating the multi-dimensionality of the sense of place concept (Jorgensen & Stedman, 2001).

In summary, despite efforts to use distinctive measures for residential satisfaction, sense of community and sense of place, these concepts to a certain degree are inseparable. In this study, several residential satisfaction items along with the attraction to neighbourhood components of sense of community and the place attachment components of sense of place loaded on one factor, indicating the communality of these items. This is comparable to other research which found sense of community and sense of place to be inter-related (Manzo & Perkins, 2006; Pretty et al., 2003). The inseparable nature may be explained because of the difficulty differentiating between various dimensions such as affiliation, satisfaction, commitment, emotional bonds and belonging, as a result of these concepts not being clearly articulated in empirical research (Long & Perkins, 2003; Pretty et al., 2003). For example, attachment to one’s community through emotional bonding and behavioural commitment is described as a component of sense of place by Brown and Perkins (1992), a component of sense of community by McMillan and Chavis (1986) and a component of residential satisfaction by Vreugdenhil and Rigby (1987). Additionally, sense of community and sense of place both contain aspects of emotional connection (Long & Perkins, 2003; Manzo & Perkins, 2006; Pretty et al., 2003). Within sense of community, emotional connection focuses on the bonds between people, while sense of place focuses on the emotional connection to the place (Long & Perkins, 2003; Manzo & Perkins, 2006; Pretty et al., 2003). Place attachment, a component of sense of place, is a precondition for the development of sense of community further highlighting the interrelatedness of these concepts (Long & Perkins, 2003; Manzo & Perkins, 2006; Pretty et al., 2003).

However, place dependence and place identity have been found not to be interrelated with sense of community (Pretty et al., 2003), which is supported in this study as these subscale items loaded on their own factor. Some theorists (Chavis &

Pretty, 1999; Chipuer & Pretty, 1999; Fisher & Sonn, 1999; Puddifoot, 1995) have suggested that place identity may be an important aspect of sense of community and therefore, may be interrelated; however, this has not been widely explored. In this study these two concepts were not shown to be interrelated and therefore, do not support this suggestion.

Sense of belonging was found to be a unique factor with no items loading with the other variables. This supports the argument that sense of belonging is a unique identity from residential satisfaction, sense of place and sense of community thereby supporting previous research (Bramston et al., 2002; Hagerty & Patusky, 1995; Hagerty et al., 1996; Pretty et al., 2007).

Additionally, the aspects of residential satisfaction that refer to dissatisfaction did not load with sense of community, sense of belonging and sense of place, showing the uniqueness of these items to residential satisfaction. Given that these items only refer to dissatisfaction with ones community, it was expected that they would only reflect aspects of residential satisfaction. Therefore, this result supports the original study (Vreugdenhil & Rigby, 1987) in which these items are components of residential satisfaction.

The above information has addressed the theoretical questions pertaining to the uniqueness and commonality of the concepts sense of community, sense of belonging, sense of place and residential satisfaction. The discussion following will address the relationship between residential satisfaction, sense of community, sense of belonging and sense of place.

Research Question 7: What is the Relationship between Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place within Ellenbrook?

The relationship between residential satisfaction and sense of community, sense of belonging and sense of place was examined. It was predicted that as the instruments measure related constructs, there would be a significant correlation. Additionally, while the instruments measure related constructs, they do not measure the same construct therefore, the effect size (i.e., strength of the relationship between the variables) was predicted to be around .50, (25% of the variance).

Results indicated a positive relationship between residential satisfaction and sense of community showing that higher levels of sense of community results in higher levels of residential satisfaction occurring. This supports previous research that has found sense of community and residential satisfaction are significantly related (Chavis & Wandersman, 1990; Glynn, 1981, 1986; Hur & Morrow-Jones, 2008; Mesch & Manor, 1998; Perkins et al., 1990; Pretty et al., 1996; Prezza et al., 2001; Prezza & Costantini, 1998). Residents who are satisfied with their life in the community have a higher sense of community than those with less community satisfaction (Glynn, 1981, 1986). Sense of community promotes neighbouring relations which lead to the development of residential satisfaction (Chavis & Wandersman, 1990). Within Ellenbrook, this positive relationship is demonstrated in that 82.7% of participants identified they actively participate in the community, and 88% of them know other people in the community. These neighbouring relations, because of sense of community, have resulted in the high level of residential satisfaction experienced by participants. Sense of community can also mediate the perception of community problems, resulting in positive impressions of the community. This leads to residential stability and growth, and in turn greater residential satisfaction (Chavis & Wandersman, 1990). This positive impression of Ellenbrook is seen in that 97.6% of participants regarded it to be a safe place to live, 96.3% reported they were free of fear to walk in the community and 98.6% indicated that Ellenbrook should not be redesigned as there were an adequate number of recreation facilities, services and amenities. This positive impression of Ellenbrook has resulted in residential stability with 88.3% of residents reporting they do not want to move out of Ellenbrook. The above shows the relationship between sense of community and residential satisfaction in that Ellenbrook residents experience high levels of sense of community due to aspects such as neighbouring relations and the mediation of community problems, and are therefore satisfied with their life in Ellenbrook. Additionally, the prediction of the effect size being large was met in the case of residential satisfaction and sense of community. This indicates the strength of the relationship between these variables.

A positive relationship between residential satisfaction and sense of place was found, thus supporting previous research findings that higher levels of sense of place result in higher levels of residential satisfaction being experienced (Adriaanse, 2007; Amerigo & Aragonés, 1990; Bonaiuto et al., 1999; Braubach, 2007; Brown et al., 2005; Chapman & Lombard, 2006; Fluery-Bahi et al., 2008; Grillo et al., 2010; Hourihan,

1984; Lalli, 1992; Mesch & Manor, 1998; Perez et al., 2001; Proshansky et al., 1983). This has also been found to be the case during periods of change that occur in a community over time (Brown et al., 2005). For example, the strong attachment one feels to their community results in residents maintaining higher levels of satisfaction over the course of the changes within the community (Brown et al., 2005). As Ellenbrook is a rapidly developing community, residents experience various periods of change. Despite these changes, the data from the place attachment subscale within the Sense of Place Scale (Jorgensen & Stedman, 2001) reflects residents as having strong attachment to Ellenbrook, and coupled with the high levels of residential satisfaction reported by residents, supports the study by Brown (2005). Therefore, the relationship between sense of place and residential satisfaction is demonstrated as Ellenbrook residents experience high levels of sense of place due to attachment to the community; as a result they are satisfied with their life in Ellenbrook.

The relationship between sense of place and residential satisfaction is also supported by research which found that excessive and repetitive noise from overcrowding in mass high density housing and a lack of parks and ovals, reduces the sense of place in a community and decreases the levels of residential satisfaction (Bonaiuto et al., 1999; Bonnes et al., 1991; Braubach, 2007; Chapman & Lombard, 2006; Hourihan, 1984; Perez et al., 2001; Uzzell et al., 2002). As Ellenbrook is not a high density housing area and has sufficient open space, amenities and facilities, most residents indicated a sense of attachment to Ellenbrook and satisfaction with the community. This attachment resulted in the higher level of residential satisfaction reported in Ellenbrook, supporting previous research that a positive relationship exists between sense of place and residential satisfaction (Bonaiuto et al., 1999; Brown et al., 2005; Fluery-Bahi et al., 2008; Grillo et al., 2010; Mellor et al., 2008; Mesch & Manor, 1998; Potter & Cantarero, 2006; Young et al., 2004). Finally, the prediction of the effect size being large was met in the case of residential satisfaction and sense of place indicating that the strength of the relationship between these variables is strong.

There is also a positive relationship between residential satisfaction and sense of belonging, indicating that higher levels of sense of belonging results in increased levels of residential satisfaction. This supports previous research that found residents who feel they belong to a community experience higher levels of residential satisfaction (Amerigo & Aragonés, 1997; Bardo, 1976; Bardo & Bardo, 1983; Bardo & Hughey, 1984; Fried & Gleicher, 1961; Hughey & Bardo, 1987; Potter & Cantarero, 2006;

Wasserman, 1982; White, 1985; Young et al., 2004). Those with a high sense of belonging form close relationships with other community members, often through community involvement, which leads to increased levels of residential satisfaction as residents view their community favourably (Bardo & Hughey, 1984; Fluery-Bahi et al., 2008). Strong community involvement is demonstrated in this study as it was reported that 82.7% of participants are actively involved in the community. This involvement has led to the majority of residents experiencing high levels of sense of belonging for example, 90.3% of participants reported they felt a part of mainstream society and 92.7% indicated they felt people accepted them so they believed they belonged in the community. Because of this sense of belonging, participants evaluated Ellenbrook favourably, leading to increased levels of residential satisfaction. Therefore, these results show a strong relationship between sense of belonging and residential satisfaction. Finally, the prediction of the effect size being large was not met in the case of residential satisfaction and sense of belonging. However, the effect size was medium indicating the strength of the relationship between sense of belonging and residential satisfaction is still substantial.

A positive relationship between sense of community and sense of place was found indicating that as sense of community increases, sense of place increases. This supports previous research that sense of community and sense of place are positively related due to both concepts containing aspects of emotional connection (Manzo & Perkins, 2006; Perkins et al., 1990; Perkins & Long, 2002). Within this study, the relationship between sense of community and sense of place is demonstrated as a high score for sense of community as well as sense of place resulted, indicating that residents experience an emotional connection to Ellenbrook and other community members. This emotional connection, formed through community participation, enables people to develop social ties and attachment to the community, aspects of sense of community and sense of place (Albanesi et al., 2007; Grillo et al., 2010; Manzo & Perkins, 2006; Ohmer, 2007; Perkins et al., 1990; Perkins & Long, 2002). Finally, the prediction of the effect size being large was met in the case of sense of community and sense of place. This indicates that the strength of the relationship between these variables is strong as they measure related constructs.

A positive relationship was also found between sense of community and sense of belonging which indicates that as sense of community increases, sense of belonging increases. As with the relationship between sense of community and sense of place, the

relationship between sense of community and sense of belonging is also enhanced through community participation. Ellenbrook residents who are part of a community group or organisation develop a sense of belonging. Additionally, they develop an emotional connection to other people and a feeling that their needs are being met (Farrell et al., 2004; Obst & White, 2007), components of sense of community (McMillan & Chavis, 1986). Therefore, as these two components are developed through community participation, if there is a high sense of community, then a high sense of belonging would also occur. Finally, the prediction of the effect size being large was not met in the case of sense of community and sense of belonging. However, the effect size was medium indicating that the strength of the relationship between sense of belonging on sense of community is still substantial.

A positive relationship also existed between sense of place and sense of belonging, suggesting that as sense of place increases so does sense of belonging; this supports previous research (Grillo et al., 2010; Hay, 1998a, 1998b; Hughey & Bardo, 1987; Mellor et al., 2008; Vanclay, 2008; Wasserman, 1982). Studies have shown that social support plays a role in the relationship between sense of place and sense of belonging (Hay, 1998a, 1998b; Mesch & Manor, 1998). Within Ellenbrook, the social support experienced by an individual is developed through their participation in the community. Research has determined that community participation enables a person to experience higher levels of sense of place because they experience a high sense of belonging to the community through being a part of a community group or organisation (Hay, 1998a, 1998b; Mesch & Manor, 1998). Therefore, as 82.7% of residents participate in the community, they develop a high sense of belonging, which in turn increases their level of sense of place.

Finally, the prediction of the effect size being large was not met in the case of sense of place and sense of belonging. Despite there being a positive relationship between these two variables, results showed a small effect size indicating that the strength of the relationship between these variables may not be strong. As discussed earlier, residential satisfaction and sense of community have a large effect on sense of place indicating these variables are more influential on sense of place than sense of belonging. Additionally, residential satisfaction and sense of community have a medium effect on sense of belonging, indicating they are more of an influence than sense of place.

Summary.

The previous section has addressed the theoretical question pertaining to the relationship between residential satisfaction, sense of community, sense of belonging and sense of place. A positive relationship was found between the variables, which indicate that if there is high residential satisfaction within a community then there is also likely to be a high level of sense of community, sense of belonging and/or sense of place. This finding supports previous research (Adriaanse, 2007; Amerigo & Aragonés, 1990; Braubach, 2007; Fluery-Bahi et al., 2008; Grillo et al., 2010; Hur & Morrow-Jones, 2008; Manzo & Perkins, 2006; Mesch & Manor, 1998; Obst & White, 2007; Prezza et al., 2001). Examination of the effect size to determine the meaningfulness or importance of the significance showed that residential satisfaction and sense of place, as well as sense of community and sense of place had a strong effect size. Residential satisfaction and sense of belonging, as well as sense of community and sense of belonging had a medium effect size. Finally, sense of place and sense of belonging had a small effect size (Cohen, 1988; Field, 2006).

To explore further the relationship between residential satisfaction and sense of community, sense of belonging and sense of place a multivariate logistic regression was performed. The following discussion focuses on addressing the strength of the relationship between residential satisfaction, sense of community, sense of belonging and sense of place and what builds residential satisfaction, sense of community, sense of belonging and sense of place in a planned community.

Strength of Relationship between Residential Satisfaction, Sense of Community, Sense of Belonging and Sense of Place

Logistic regression describes the relationship between the dependent variable and a set of independent variables and is useful for formulating models about the types of factors which might determine variables influential in predicting the outcome (Field, 2006). Examination of the chi-square revealed a significant association between residential satisfaction and sense of community $\chi^2(1,300) = 40.127, p < .05$, a significant association between residential satisfaction and sense of place $\chi^2(1,300) = 56.805, p < .05$, and a significant association between residential satisfaction and sense of belonging $\chi^2(1,300) = 25.848, p < .05$. This indicates that the variables are not independent but are related in some way and therefore, should be included in the

proposed logistic regression model. This significant result supports previous research also indicating there to be an association between residential satisfaction, sense of community, sense of belonging and sense of place as discussed earlier (Adriaanse, 2007; Amerigo & Aragones, 1990; Braubach, 2007; Fluery-Bahi et al., 2008; Grillo et al., 2010; Hur & Morrow-Jones, 2008; Manzo & Perkins, 2006; Mesch & Manor, 1998; Obst & White, 2007; Prezza et al., 2001).

Further examination of the univariate analysis indicated that out of the 173 (58%) residents with high sense of community, 121 (70%) experienced high residential satisfaction. With regard to the relationship between sense of place and residential satisfaction, results revealed that of the 165 (55%) residents with high sense of place, 122 (74%) experienced high residential satisfaction. Finally, of the 166 (55%) residents with high sense of belonging, 112 (68%) experienced high residential satisfaction. These results show the relationship between these constructs in that sense of community, sense of belonging and sense of place can lead to the development of residential satisfaction. This supports previous research that has also found a link between residential satisfaction and sense of community (Chavis & Wandersman, 1990; Glynn, 1981, 1986; Hur & Morrow-Jones, 2008; Mesch & Manor, 1998; Perkins et al., 1990; Pretty et al., 1996; Prezza et al., 2001; Prezza & Costantini, 1998), residential satisfaction and sense of place (Amerigo & Aragones, 1990; Bonaiuto et al., 1999; Fluery-Bahi et al., 2008; Mesch & Manor, 1998; Proshansky et al., 1983) and residential satisfaction and sense of belonging (Bardo & Dokmeci, 1990a; Fluery-Bahi et al., 2008; Hughey & Bardo, 1987; White, 1985).

Based on the above results, it is no surprise that from the 127 (42%) residents with lower levels of sense of community, 85 (67%) experienced lower levels of residential satisfaction; of 135 (40%) residents with lower levels of sense of place, 94 (70%) experienced lower levels of residential satisfaction; and of 134 (45%) residents with lower levels of sense of belonging, 83 (62%) experienced lower levels of residential satisfaction. These results also show a relationship between these three constructs and residential satisfaction in that low sense of community, sense of belonging and sense of place can lead to residents being dissatisfied with their community. This supports previous research that a lack of sense of community, sense of belonging and sense of place can lead to a decline in residential satisfaction (Butterworth, 2000; Holahan & Wandersman, 1987; Home et al., 2010; Meijers & Burger, 2010; Pendola & Gen, 2008; Perkins et al., 2003; Wilson-Doenges, 2000).

However, while the above results suggest a significant relationship between these constructs, 42 (33%) residents with low sense of community, 41 (30%) residents with low sense of place and 51 (38%) residents with low sense of belonging experienced higher levels of residential satisfaction suggesting other factors may also contribute to their residential satisfaction. As discussed earlier, physical, social and personal factors such as community layout and design; housing quality; perception of low crime; and community participation contributed to the development of residential satisfaction in this study, thereby supporting previous research (Adriaanse, 2007; Bardo & Dokmeci, 1990a; Braubach, 2007; Carro et al., 2010; Chapman & Lombard, 2006; Filkins et al., 2000; Garcia et al., 1999; Grillo et al., 2010; James et al., 2009; Potter & Cantarero, 2006; Uzzell et al., 2002; Young et al., 2004). It is possible that these factors were more significant in determining residential satisfaction for these residents than sense of community, sense of belonging and sense of place. Therefore, while there is a significant relationship between residential satisfaction and sense of community, sense of belonging and sense of place in this study; physical, social and personal factors also contribute to the development of residential satisfaction.

After the univariate analysis, a multivariate analysis was conducted. The Wald Statistic and corresponding significance levels tested the significance of sense of community, sense of belonging and sense of place in the model. Results showed the Wald statistic for each variable to be significant, indicating that each variable in the model is important: sense of community, Wald Statistic (1,300) = 8.86, $p < .05$; sense of place, Wald Statistic (1,300) = 23.9, $p < .05$; and sense of belonging, Wald Statistic (1,300) = 16.13, $p < .05$.

The odds ratio predicted by the model indicates that someone experiencing low levels of sense of community has 0.42 the odds of experiencing residential satisfaction compared to someone with high sense of community. Regarding sense of place, results reveal that someone with a low level of sense of place has 0.24 the odds of having a high level of residential satisfaction; and someone with a low level of sense of belonging has 0.33 the odds of experiencing residential satisfaction. Conversely, someone who has a high level of sense of community has 2.4 times the odds of experiencing residential satisfaction compared to someone who has low sense of community. This study found that someone with a high level of sense of place has 4.1 times the odds of experiencing residential satisfaction; and someone with a high level of sense of belonging has 3.0 times the odds of experiencing residential satisfaction.

These results maintain that individuals with higher sense of community, sense of belonging and sense of place are more likely to experience residential satisfaction, thereby supporting previous research also finding a positive relationship between sense of community and residential satisfaction (Chavis & Wandersman, 1990; Glynn, 1981, 1986; Hur & Morrow-Jones, 2008; Mesch & Manor, 1998; Perkins et al., 1990; Prezza et al., 2001; Prezza & Costantini, 1998); sense of place and residential satisfaction (Adriaanse, 2007; Amerigo & Aragones, 1990; Bonaiuto et al., 1999; Braubach, 2007; Brown et al., 2005; Chapman & Lombard, 2006; Fluery-Bahi et al., 2008; Grillo et al., 2010; Hourihan, 1984; Lalli, 1992; Mesch & Manor, 1998; Perez et al., 2001; Proshansky et al., 1983); and sense of belonging and residential satisfaction (Amerigo & Aragones, 1997; Bardo, 1976; Bardo & Bardo, 1983; Bardo & Hughey, 1984; Fried & Gleicher, 1961; Hughey & Bardo, 1987; Potter & Cantarero, 2006; Wasserman, 1982; White, 1985; Young et al., 2004).

However, although individuals with low levels of sense of community, sense of belonging and/or sense of place have less chance of experiencing residential satisfaction, they may still experience residential satisfaction. This supports the chi-square finding in which 42 (33%) residents with low sense of community experienced higher levels of residential satisfaction; 41 (30%) residents with low sense of place experienced higher levels of residential satisfaction; and 51 (38%) residents with low sense of belonging experienced higher levels of residential satisfaction. Therefore, while residential satisfaction is more likely to be experienced by individuals with higher levels of sense of community, sense of belonging and sense of place the possibility exists for these individuals to experience residential satisfaction. As discussed earlier, the reason for this is that other factors can contribute to the development of residential satisfaction. Thus, a person with low sense of community, sense of belonging and/or sense of place may experience residential satisfaction due to other factors not addressed in this current study.

Summary.

There is a significant association between residential satisfaction and sense of community, sense of belonging and sense of place. This indicates that the variables are not independent; they are related in some way. While a person with higher levels of sense of community, sense of belonging and sense of place are more likely to experience residential satisfaction, there is the likelihood that individuals with lower

levels of these constructs will experience residential satisfaction. This is due to other factors such as physical, social and personal constructs being involved in the development of residential satisfaction (Bardo, 1976; Filkins et al., 2000; Garcia et al., 1999; Vreugdenhil & Rigby, 1987; Young et al., 2004).

Conclusion

The purpose of this study was to examine the sense of community, sense of belonging and sense of place within the planned community of Ellenbrook in Western Australia and the impact of these factors on residential satisfaction for the residents of this community. Additionally, the purpose of this study was to examine the factors that comprise of residential satisfaction, sense of community, sense of belonging and sense of place.

There were no group differences in terms of residential satisfaction, sense of community, sense of belonging and sense of place for the residents of different villages within Ellenbrook. Therefore, while Ellenbrook is comprised of different villages, residents identify with the suburb of Ellenbrook collectively rather than with their individual village.

The level of residential satisfaction, sense of community, sense of belonging and sense of place for residents within Ellenbrook was relatively high. That is, more residents were satisfied with the community of Ellenbrook than dissatisfied. More residents experienced a sense of a sense of community, a sense of place and a sense of belonging than those who did not.

The social and physical factors: belongingness, community attachment, community participation, fear of crime, community layout and design and housing density, contribute to the experience of high levels of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook. This supports previous research that a residents' perception of their community is based on physical and social factors, and that these are intertwined to influence a person's level of residential satisfaction (Braubach, 2007; Mellor et al., 2008; Potter & Cantarero, 2006), sense of community (Grillo et al., 2010; Long & Perkins, 2007; Pendola & Gen, 2008), sense of belonging (Bailey & McLaren, 2005; Kissane & McLaren, 2006; Lim, 2007) and sense of place (Jiven & Larkham, 2003; Kianicka et al., 2006; Post, 2008).

Not all personal factors contributed to the development of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook. Despite some research identifying personal factors as contributing to these variables (Billig, 2005; Brown et al., 2005; Chapman & Lombard, 2006; Elsinga & Hoekstra, 2005; Filkins et al., 2000; Grzeskowiak et al., 2003; Long & Perkins, 2007; Lu, 1999; Potter & Cantarero, 2006), no group differences were found for the personal factors of age, ethnicity, homeownership, length of residence and educational level. These findings indicate that other personal factors such as marital status, income level and number of people known in the community may be more influential in the development of these variables within Ellenbrook. It also indicates that social and physical factors are more influential in the development of residential satisfaction, sense of community, sense of belonging and sense of place.

Of the personal factors that did contribute to the development of residential satisfaction, sense of community, sense of belonging and sense of place, not one contributed to the development of all four variables within Ellenbrook. Marital status was the only personal factor to contribute to the development of sense of community, sense of belonging and sense of place but not residential satisfaction. Furthermore, marital status was the only personal factor to contribute to the development of sense of place within Ellenbrook. While personal factors may develop sense of place in some communities, in the case of Ellenbrook, the physical and social factors are more influential than personal factors in developing sense of place.

Household income and number of people known in the community was found to contribute to the development of sense of community and sense of belonging but not residential satisfaction and sense of place. Gender contributed to developing sense of belonging and sense of place but not residential satisfaction and sense of community. Gender was the only personal factor to contribute to the development of residential satisfaction. These results indicate that physical and social factors are more influential than personal factors.

Additionally, the interrelation of sense of community, sense of belonging and sense of place and their impact on residential satisfaction was explored employing exploratory factor analysis. Results showed nine factors to emerge, one of which consisted of several residential satisfaction items along with the attraction to neighbourhood components of sense of community and the place attachment

components of sense of place, indicating the communality of these items. This is comparable with other research, which found sense of community and sense of place, particularly the component of place attachment to be inter-related (Manzo & Perkins, 2006; Pretty et al., 2003). Despite efforts to use distinctive measures of these concepts, there is to a certain degree an inseparable nature of the dimensions of residential satisfaction, and sense of community and sense of place.

However, place dependence and place identity, the other two components of sense of place were not found to be interrelated with sense of community. Some theorists (Chavis & Pretty, 1999; Chipuer & Pretty, 1999; Fisher & Sonn, 1999; Puddifoot, 1995) suggested that place identity may be an important aspect of sense of community and therefore, may be interrelated; however, this was not found to be the case in this study.

The sense of belonging items were separate factors indicating that sense of belonging is a unique identity from residential satisfaction, sense of place and sense of community. This supports previous research arguing that sense of belonging is a unique identity (Hagerty & Patusky, 1995; Hagerty et al., 1996). Additionally, the residential satisfaction items referring to feelings of dissatisfaction emerged as one factor suggesting the uniqueness of these items to residential satisfaction.

Finally, the relationship between residential satisfaction, sense of community, sense of belonging and sense of place was explored through regression analyses; which affirmed a positive relationship between the variables. This significant correlation determines that the constructs are related. That is, if a high residential satisfaction exists within a community, then there is likely to be a high level of sense of community, sense of belonging and/or sense of place. This finding supports previous research that found a positive relationship between sense of community and residential satisfaction (Hur & Morrow-Jones, 2008; Mesch & Manor, 1998; Perkins et al., 1990; Pretty et al., 1996; Prezza & Costantini, 1998); sense of place and residential satisfaction (Adriaanse, 2007; Braubach, 2007; Brown et al., 2005; Chapman & Lombard, 2006; Fluery-Bahi et al., 2008; Grillo et al., 2010); sense of belonging and residential satisfaction (Amerigo & Aragonés, 1997; Bardo & Hughey, 1984; Potter & Cantarero, 2006; Young et al., 2004); sense of place and sense of community (Manzo & Perkins, 2006; Perkins et al., 1990; Perkins & Long, 2002); and sense of place and sense of belonging (Grillo et al., 2010; Hay, 1998b; Mellor et al., 2008; Vanclay, 2008).

However, while the instruments measure related constructs they do not measure the same construct. Examination of the effect size to determine the meaningfulness or importance of the significance showed that residential satisfaction and sense of place, as well as sense of community and sense of place, had a large effect size. This indicates that the strength of the relationship between these variables is strong and these variables are more influential in their effect on each other than is sense of belonging. Residential satisfaction and sense of belonging, as well as sense of community and sense of belonging had a medium effect size, indicating that the strength of the relationship between these constructs is substantial, though not strong. The medium effect size for residential satisfaction and sense of community indicates they are more of an influence on sense of belonging than sense of place. Finally, sense of place and sense of belonging had a small effect size. Despite there being a positive relationship between these two variables, the strength of the relationship between them may not be strong.

A multivariate logistic regression was performed to examine the strength of the relationship between residential satisfaction, sense of community, sense of belonging and sense of place. Results also showed a significant association between residential satisfaction and sense of community, sense of belonging and sense of place. This indicates that the variables are not independent; they are related in some way. However, it was also found that while a person with higher levels of sense of community, sense of belonging and sense of place is more likely to experience residential satisfaction, there is still the possibility that individuals with lower levels of these constructs will experience residential satisfaction. This is due to other factors such as physical, social and personal constructs being involved in the development of residential satisfaction.

Limitations of the Current Research

As this research focused on the suburb of Ellenbrook in a metropolitan area of Perth, Western Australia, the results may not be generalisable to other communities such as rural areas, non-planned communities and other countries. Previous research has found many aspects that people use to determine their level of residential satisfaction (Hur & Morrow-Jones, 2008). For example, some communities focus on physical aspects to determine their level of satisfaction, others focus on social problems, while others focus on both physical and social issues to determine their level of satisfaction (Hur & Morrow-Jones, 2008). Therefore, what the residents of Ellenbrook use to determine their level of satisfaction, is not necessarily what others use to determine

satisfaction. Additionally, Ellenbrook residents are mainly of White, Anglo-European descent; therefore, due to the homogeneity of the residents of Ellenbrook, the results may not be generalisable to other communities who are more culturally and linguistically diverse.

The inclusion criteria for this research stipulated that participants needed to understand and speak English. While 4.5% of residents of other cultural backgrounds participated in this study, the English language selection criteria may have restricted the extent to which culturally and linguistically diverse families would have participated. Together with the homogeneity of the residents of Ellenbrook discussed above, the findings of this study are limited as to their generalisability.

There were a large percentage of homeowners (82%) in this study. As homeownership increases the level of residential satisfaction experienced in a community (Bonaiuto et al., 1999; Elsinga & Hoekstra, 2005; James et al., 2009; Mesch & Manor, 1998; Wasserman, 1982) this may have biased the results. A sample with relatively equal homeowners and non-homeowners may have yielded different results.

Additionally, a large percentage of residents (88%) knew other people in the community. At first glance it appears that the number of people known in the community is not a significant factor for the development of sense of place and residential satisfaction despite other research finding this to be the case (Allen, 1991; Cuba & Hummon, 1993; Filkins et al., 2000; Grzeskowiak et al., 2003; Hay, 1998b; Kianicka et al., 2006). However, it is possible that this factor is a contributor to these constructs but the large percentage may have biased the results. A sample with relatively comparable numbers of people who know others in the community and people who do not know anyone may have resulted in a different outcome.

Several instruments are utilised to measure the constructs of residential satisfaction, sense of community, sense of belonging and sense of place. While the measures deemed the most appropriate for this research were employed, and justification for their use was discussed in this paper, other instruments measuring these constructs may have yielded different results.

Despite these limitations, the current study aimed to examine the sense of community, sense of belonging and sense of place within the planned community of Ellenbrook in Western Australia and the impact of these factors on residential

satisfaction for the residents of this community. This paper provided insight into the factors comprising sense of community, sense of belonging and sense of place. The findings from this paper provide useful information in relation to these constructs which can be taken into account in future research on residential satisfaction, sense of community, sense of belonging and sense of place.

Suggestions for Future Research

As the average length of time residents have lived in Ellenbrook was 2.65 years, at the time of data collection, this relatively short time may be a reason why no differences emerged between longer-term residents and newer residents for residential satisfaction. Future research, now Ellenbrook is more established, could determine if any differences exist between longer-term residents and those new to the area, as more time has elapsed since longer-term residents first moved to the area.

Regarding sense of belonging, little research has examined the significance of educational level on this construct. Those that have examined educational level, briefly mention its exploration, but findings were not reported (Kissane & McLaren, 2006; McLaren et al., 2001). A review of the literature demonstrated that most research on education focused on adolescents and their sense of belonging in the school environment (Goodenow, 1993a, 1993b), or with university/college students and their sense of belonging on campus (Freeman et al., 2007; Hausmann et al., 2009; Nunez, 2009). The findings of this paper have indicated that educational level is not associated with sense of belonging in a community setting. Due to the lack of research relating to educational level and sense of belonging in a community sample, this warrants further examination.

As with educational level, a search of the literature showed that few studies have examined marital status and sense of place in a community sample. Those that have only briefly mentioned it examination and findings were not reported (Mesch & Manor, 1998; Wasserman, 1982). The findings in this study have shown there to be group differences in terms of marital status and sense of place; however, further investigation needs to be conducted to supplement these findings.

The relationship between residential satisfaction and sense of community, sense of belonging and sense of place has not been examined until now; therefore, it is a new innovative area to be explored. While this paper has provided some insight into how

these factors are related in that a significant relationship between these constructs was found, indicating that sense of community, sense of belonging and sense of place contribute to the development of residential satisfaction, further research could be conducted to contribute to the findings of this research.

Additionally, results of the factor analysis indicated that residential satisfaction, sense of community and sense of place components emerged together on the factors, indicating the communality of these items. Despite distinctive measures of these concepts, there is an inseparable nature of these dimensions, which could be explored further. The sense of belonging items emerged as a separate factor indicating the uniqueness of this factor from residential satisfaction, sense of place and sense of community. Further research could be conducted to contribute to this finding.

As this research focused on quantitative methods of analysis and therefore, was an exploratory study, a future qualitative stage could confirm and verify the data from the quantitative stages and provide 'richness' and an in-depth explanation of the data (Ling, 2008; Miles & Huberman, 1984). This method of using more than one approach to the research topic is known as triangulation; it is used in order to enhance confidence in the finding (Denzin & Lincoln, 1998; Ling, 2008). Qualitative and quantitative methods are complementary approaches and when utilised together help gain a deeper understanding of the data (Denzin & Lincoln, 1998; Ling, 2008; Queensland University of Technology, 2008). Both methods of research when employed as a complement to each other provide a holistic view to the topic under investigation (Ling, 2008; Queensland University of Technology, 2008).

Theoretical Implications of the Research

The purpose of this thesis was to examine the relationship between residential satisfaction, sense of community, sense of belonging and sense of place in the planned community of Ellenbrook in Western Australian. While sense of community, sense of belonging and sense of place and their impact on residential satisfaction have been examined individually (e.g., Amole, 2009; Brown et al., 2005; Butterworth, 2000; Filkins et al., 2000; Fisher & Sonn, 2007; Fluery-Bahi et al., 2008; Grillo et al., 2010; Hur & Morrow-Jones, 2008; Mellor et al., 2008; Pendola & Gen, 2008; Potter & Cantarero, 2006; Tartaglia, 2006; Vreugdenhil & Rigby, 1987; Young et al., 2004), they

have not been examined in conjunction with each other, making this a new innovative context being researched.

Theoretically, the findings of this research contribute to a community and environmental psychology concept of residential satisfaction, sense of community, sense of belonging and sense of place. This research has shown a significant relationship exists between these constructs in that sense of community, sense of belonging and sense of place contribute to the development of residential satisfaction. While this study supports previous studies (e.g., Adriaanse, 2007; Amerigo & Aragonés, 1990; Braubach, 2007; Fluery-Bahi et al., 2008; Manzo & Perkins, 2006; Obst & White, 2007; Prezza et al., 2009) that has determined the influence of these factors individually on residential satisfaction, it has also provided insight into the theoretical research by showing the interrelation of residential satisfaction, sense of community, sense of belonging and sense of place.

Additionally, research does not adequately distinguish among the concepts of sense of community, sense of belonging and sense of place. For example, in terms of sense of community and sense of place, the place attachment component of sense of place is described in terms of emotional bonding and behavioural commitment (Brown & Perkins, 1992), which is similar to the fulfilment of needs and emotional connection components of sense of community (McMillan & Chavis, 1986). Results of the factor analysis in this study show that items belonging to these concepts did not emerge on their own factor. Therefore, this finding contributes to the theoretical understanding by highlighting that to a certain degree, there are similarities, which make it difficult to distinguish between the concepts.

Also there is a lack of clarity and structure within the literature in regards to the sense of place concepts: Identity, Attachment and Dependence (Goudy, 1990; Stinner & van Loon, 1992). For example, aspects of Identity are described as being emotional ties and affiliation with a place (Cuba & Hummon, 1993), which is similar to definitions of Attachment (Altman & Low, 1992; Jorgensen & Stedman, 2006). Results of this study show that the loadings of some of the place attachment and place identity items reveal a high degree of commonality among these dimensions. Therefore, this research contributes to the theoretical understanding that despite attempts to use distinctive measures, there is an inseparable nature to sense of place dimensions.

This research also provided the opportunity to examine the issue that has arisen in the research as to whether belonging is subsumed under sense of community or whether it is a unique concept (i.e., sense of belonging) (Bramston et al., 2002; Hagerty & Patusky, 1995; Hagerty et al., 1996; Pretty et al., 2007). Results of this study have shown that belonging is a unique concept that is not interrelated with sense of community, supporting the research that debates whether this construct is one of the dimensions of McMillan and Chavis' (1986) sense of community model (Bramston et al., 2002; Chiessi et al., 2010; Chipuer & Pretty, 1999, 2000; Hagerty & Patusky, 1995; Hagerty et al., 1996; Long & Perkins, 2003; Nowell & Boyd, 2010; Obst & White, 2004; Obst et al., 2002a, 2002b, 2002c; Perkins et al., 1990; Pretty et al., 2007; Tartaglia, 2006; Townley & Kloos, 2009; Wombacher et al., 2010; Young et al., 2004). As a result, this finding has contributed to the debate of this theoretical area by supporting the research that sense of belonging is a unique concept (Bramston et al., 2002; Hagerty & Patusky, 1995; Hagerty et al., 1996; Pretty et al., 2007). Additionally, it provides theoretical support to research suggesting a need for revision of the sense of community construct (Chipuer & Pretty, 1999; Long & Perkins, 2003; Mannarini & Fedi, 2009; McMillan, 1996; Nowell & Boyd, 2010; Obst & White, 2004; Peterson et al., 2006; Peterson et al., 2008).

This study has also provided a theoretical contribution to sense of place in that few studies have examined sense of place with quantitative methods. Most research has been from a phenomenological approach, which does not focus on the role of the physical environment (Jorgensen & Stedman, 2001, 2006; Lalli, 1992). However, for those who have utilised quantitative research, the dominant belief is that sense of place is multidimensional and the physical attributes of a place are important in the development of sense of place (Jiven & Larkham, 2003; Jorgensen et al., 2007; Post, 2008). In this study, sense of place was found to be multidimensional and that the physical environment is a contributor to the development of sense of place supporting the previous quantitative research. Additionally, by utilising a quantitative method, this study has contributed to the sense of place research from a positivist perspective.

Practical Implications of the Current Research

This study has practical implications for the developers of Ellenbrook, which has been developed to promote the concepts of sense of community, sense of belonging and sense of place. The high levels of these concepts, as identified by the participants,

highlights they occurred as the planners had intended in their development of the suburb. From this information, other developers can consider Ellenbrook as a model from which to plan future communities. Ellenbrook demonstrates that a community designed to promote sense of community, sense of belonging and sense of place leads to residential satisfaction which promotes the well-being of its residents.

Additionally, this study has practical implications in that its findings can be utilised by policy makers and integrated into policy development to provide solutions to ecological and social issues and concerns in unplanned communities such as residential instability and lack of required resources, which decrease satisfaction in a community (Butterworth, 2000; Jorgensen & Stedman, 2006; Pendola & Gen, 2008; Pretty et al., 2003; Stedman, 2003; Williams & Stewart, 1998). This study has shown that the provision of required resources, infrastructure and programs, forges a sense of community, sense of belonging and sense of place which in turn leads to residential satisfaction.

The results of this study can also assist urban planners and policy and decision makers in that it provides information to assist them in developing and designing new communities. This study shows that by developing a community to promote sense of community, sense of belonging and sense of place it leads to residential satisfaction. Planners and decision makers could promote these constructs in all future residential developments to avoid or minimise the issues faced by unplanned communities. This research highlights that a well-designed community that encourages aspects such as community participation, feelings of belonging, community attachment and feelings of safety, leads to residential satisfaction and thereby contributes to the health and well-being of residents.

Finally, this study provides information to planners and decision makers to assist them in determining which aspects of a community are needed to encourage residents to move to and remain in the community. In understanding the relationship between residential satisfaction and sense of community, sense of belonging and sense of place, community developers and planners can create situations promoting these concepts, which are important for the future growth of a community. By recognising the importance of these concepts, sustainable and functional communities are developed.

Conclusion

Using a quantitative approach, this research examined residential satisfaction, sense of community, sense of belonging and sense of place within the planned community of Ellenbrook in Western Australia. Findings indicated that the social and physical factors of: belongingness, community attachment, community participation, fear of crime, community layout and design and housing density contributed to the high levels of residential satisfaction, sense of community, sense of belonging and sense of place within Ellenbrook.

Personal factors: age, ethnicity, length of residence, education level and homeownership were found not to contribute to the development of residential satisfaction, sense of community, sense of belonging and sense of place. However, other personal factors did contribute but not one resulted in the development of all four concepts within Ellenbrook.

Marital status contributed to the development of sense of community, sense of belonging and sense of place but not residential satisfaction. Further, marital status was the only personal factor which contributed to the development of sense of place within Ellenbrook indicating that personal factors may develop sense of place in some communities. However, in the context of Ellenbrook, the physical and social factors are more influential than personal factors in developing sense of place.

Household income and number of people known in the community contributed to the development of sense of community and sense of belonging but not residential satisfaction and sense of place. Gender contributed to the development of residential satisfaction and sense of community but not sense of belonging and sense of place. Gender was the only personal factor found to contribute to the development of residential satisfaction within Ellenbrook indicating that while personal factors may develop residential satisfaction in some communities, the physical and social factors may be more influential than personal factors.

Results of the factor analysis revealed that despite researchers' efforts over the years to employ distinctive measures for residential satisfaction, sense of community, sense of belonging and sense of place, these constructs are connected to a certain degree. However, despite this overlap, place dependence, dissatisfaction and sense of belonging emerged as their own factor demonstrating the uniqueness of these items.

Regression analyses demonstrated a positive relationship between residential satisfaction and sense of community, sense of belonging and sense of place, also highlighting that the constructs are dependent.

Prior to this study, residential satisfaction, sense of community, sense of belonging and sense of place had not been researched in conjunction with each other thus, this research is an exploration of this relationship and is innovative in its approach. Additionally, despite much theoretical and empirical development of these constructs over the years, the dimension, meaning and nature of these concepts was debated, also indicating this area was in need of investigation. Moreover, information has been provided about the factors contributing to residential satisfaction, sense of community, sense of belonging and sense of place, and to the understanding of the strength of the relationship between these constructs. Additionally, as these constructs have not been explored concurrently in an Australian context or in a planned community, this study has provided relevant information for the future design and development of Australian communities. The findings have provided information useful for application in the development of planned communities for the satisfaction of all residents.

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Appendix A
Percentages Showing Participant's Gender

Gender	Frequency	Percent
Female	220	73.3
Male	79	26.3
No Response	1	0.3
Total	300	100

Appendix B
Percentages Showing Participant's Country of Birth

Country of Birth	Frequency	Percent
Australia	184	61.3
England	61	20.3
New Zealand	13	4.3
South Africa	7	2.3
Burma/Myanmar	3	1.0
India	3	1.0
Ireland	3	1.0
Singapore	3	1.0
Zimbabwe	3	1.0
Canada	2	0.7
Philippines	2	0.7
Poland	2	0.7
Scotland	2	0.7
China	1	0.3
Christmas Island	1	0.3
Hong Kong	1	0.3
Latvia	1	0.3
Malaysia	1	0.3
Netherlands	1	0.3
Russia	1	0.3
Switzerland	1	0.3
United States of America	1	0.3
Wales	1	0.3
No response	2	0.7
Total	300	100

Appendix C
Percentages Showing Participant's Father's Country of Birth

Country of Birth	Frequency	Percent
Australia	125	41.7
England	76	25.3
New Zealand	15	5.0
Ireland	9	3.0
South Africa	7	2.3
India	6	2.0
Netherlands	6	2.0
Scotland	6	2.0
Burma/Myanmar	5	1.7
China	4	1.3
Italy	4	1.3
Poland	4	1.3
Germany	3	1.0
Zimbabwe	3	1.0
Philippines	2	0.7
Serbia	2	0.7
Singapore	2	0.7
Canada	1	0.3
Denmark	1	0.3
Latvia	1	0.3
Malaysia	1	0.3
Russia	1	0.3
Switzerland	1	0.3
United States of America	1	0.3
No response	14	4.7
Total	300	100

Appendix D

Percentages Showing Participant's Mother's Country of Birth

Country of Birth	Frequency	Percent
Australia	136	45.3
England	78	26.0
New Zealand	15	5.0
Scotland	8	2.7
Ireland	6	2.0
South Africa	6	2.0
India	5	1.7
Netherlands	5	1.7
Italy	4	1.3
Burma/Myanmar	3	1.0
China	3	1.0
Philippines	2	0.7
Poland	2	0.7
Russia	2	0.7
Serbia	2	0.7
Zimbabwe	2	0.7
Canada	1	0.3
Cocos Island	1	0.3
Denmark	1	0.3
Lithuania	1	0.3
Malaysia	1	0.3
Switzerland	1	0.3
Thailand	1	0.3
United States of America	1	0.3
No response	13	4.3
Total	300	100

Appendix E
Percentage of Indigenous and non-Indigenous Participants

Ethnicity	Frequency	Percent
Aboriginal or Torres Strait Islander	3	1.0
Non-Indigenous Australian	287	95.7
No response	10	3.3
Total	300	100

Appendix F
Percentages of Participant's Age in Years

Age Range	Frequency	Percent
18 – 24	33	11
25 – 30	57	19
31 – 35	62	20.7
36 – 40	45	15.0
41 – 45	32	10.7
46 – 50	15	5.0
51 – 55	14	4.7
56 – 60	12	4.0
61 – 65	11	3.7
66+	11	3.7
No response	8	2.5
Total	300	100

Appendix G
Participants' Present Marital Status

Marital Status	Frequency	Percent
Married	200	66.7
Never married	58	19.3
Divorced	21	7.0
Separated	17	5.7
Widowed	4	1.3
Total	300	100

Appendix H
Percentages of Participant's Current Residential Status

Residential Status	Frequency	Percent
Own Home	247	82.3
Rent Home	47	15.7
Other Living Arrangement	4	1.3
No Response	2	0.7
Total	300	100

Appendix I
Percentages of Participant's Employment Status

Employment Status	Frequency	Percent
Employed	176	58.7
Home duties	80	26.7
Retired	21	7.0
Student	10	3.3
Unemployed	8	2.7
Other	5	1.7
Total	300	100

Appendix J
Participant's Highest Level of Education Completed

Education Level	Frequency	Percent
Year 10 or below	68	22.7
Year 11	23	7.7
Year 12	58	19.3
TAFE/College	93	31
University Undergraduate	29	9.7
University Postgraduate	16	5.3
Other	11	3.7
No response	2	.7
Total	300	100

Appendix K
Participant's Current Household Income

Household Income	Frequency	Percent
Under \$20,000	30	10.0
\$20,000 - \$35,000	43	14.3
\$35,001 - \$50,000	53	17.7
\$50,001 - \$65,000	41	13.7
\$65,001 - \$80,000	62	20.7
\$80,001 or more	48	16.0
No Response	23	7.7
Total	300	100

Appendix L
Number of People Contributing to Household Income

No. Contributing to Income	Frequency	Percent
One Person	120	40.0
Two People	166	55.3
Three People	4	1.3
Four People	2	0.7
No Response	8	2.7
Total	300	100

Appendix M
Length of Time Participants Have Lived in Ellenbrook

Length of Time	Frequency	Percent
Less than 12 months	68	22.7
1 to 2 years	77	25.7
3 to 4 years	78	26.0
5 to 6 years	49	16.3
More than 6 years	26	8.7
Other	2	0.7
Total	300	100

Appendix N
Length of Time Participants Expect to Live in Ellenbrook

Length of Time	Frequency	Percent
Less than 12 months	11	3.7
1 to 2 years	20	6.7
3 to 4 years	28	9.3
5 to 6 years	32	10.7
More than 6 years	169	56.3
Other	38	12.7
No Response	2	0.7
Total	300	100

Appendix O
Number of People Known in Ellenbrook by the Participants

No. of People Known	Frequency	Percentage
None	37	12.3
1 to 2 People	31	10.3
3 to 5 People	44	14.7
More than 6 People	178	59.3
No Response	10	3.3
Total	300	100

Appendix P
Number of Participants Involved in Community Activities

Community Involvement	Frequency	Percent
Yes	97	32.3
No	199	66.3
No Response	4	1.3
Total	300	100

Appendix Q
Number of Community Activities Participants Are Involved in

No of Community Activities	Frequency	Percent
No Activities	206	68.7
One Activity	45	15.0
Two Activities	26	8.7
Three Activities	10	3.3
Four Activities	5	1.7
Five or More Activities	2	0.7
No Response	6	2.0
Total	300	100

Appendix R
How Often Participants Are Involved in Community Activities

Involvement Time	Frequency	Percent
Once A Week	56	18.7
Once a Month	17	5.7
More than Once A Month	9	3.0
Other	12	4.0
Not Applicable as No Involvement	206	68.7
Total	300	100

Appendix S
Percentages of Participants Involved in Community Activities that
have Duties/Roles

Involvement	Frequency	Percent
Yes	37	12.3
No	55	18.3
Not Applicable	206	68.7
No response	2	0.7
Total	300	100

Appendix T
Participant's Duty/Role in their Community Involved Activity

Duty	Frequency	Percent
Advisor	1	0.3
Coach	3	1.0
Committee Member	1	0.3
Delegate	1	0.3
Leader/Chairperson	9	3.0
Officer	3	1.0
Secretary	5	1.7
Treasurer	2	0.7
Volunteer	12	4.0
Not Applicable	263	87.7
Total	300	100

Appendix U

General Community Satisfaction Scale (GCSS)

	1. Strongly disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly agree
	SD	D	N	A	SA
1. This suburb is a wonderful place in which to live.	1	2	3	4	5
2. This suburb is a good place for children to grow up in.	1	2	3	4	5
3. This suburb is a boring place.	1	2	3	4	5
4. They should knock the whole place down and start again.	1	2	3	4	5
5. This suburb is a beautiful place to live.	1	2	3	4	5
6. There is a feeling of pride in this community.	1	2	3	4	5
7. This suburb is one of Western Australia's most attractive places.	1	2	3	4	5
8. The environment in this suburb is bleak and depressing.	1	2	3	4	5
9. The quality of life in this suburb is low.	1	2	3	4	5
10. People don't care much about this suburb, and it's no wonder.	1	2	3	4	5
11. This suburb has a lot of good things going for it.	1	2	3	4	5
12. This suburb is a comfortable, relaxing place to live.	1	2	3	4	5
13. This suburb is a disgrace to Western Australia.	1	2	3	4	5
14. This suburb is a terrible place for children.	1	2	3	4	5
15. There just isn't enough privacy in this area.	1	2	3	4	5
16. Life is really dreary in this suburb.	1	2	3	4	5
17. This suburb is a very clean place.	1	2	3	4	5
18. It's ridiculous to think people really like living in this area.	1	2	3	4	5
19. This area has a good feeling about it.	1	2	3	4	5
20. This area is an interesting place to live.	1	2	3	4	5
21. This suburb is a good place for families.	1	2	3	4	5
22. Living in this suburb is unpleasant.	1	2	3	4	5
23. People should be proud to say they live in this suburb.	1	2	3	4	5
24. It is dangerous to live in this suburb.	1	2	3	4	5
25. In general, I am satisfied with living in this suburb.	1	2	3	4	5
26. This suburb is a pleasant place to walk.	1	2	3	4	5
27. I am satisfied with the quality of housing in this suburb.	1	2	3	4	5

Appendix V

Neighborhood Cohesion Instrument (NCI)

	1. Strongly disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly agree
	SD	D	N	A	SA
1. Overall, I am very attracted to living in this suburb.	1	2	3	4	5
2. I feel like I belong to this suburb.	1	2	3	4	5
3. I visit my neighbours in their homes.	1	2	3	4	5
4. The friendships and associations I have with other people in my suburb mean a lot to me.	1	2	3	4	5
5. Given the opportunity, I would like to move out of this suburb.	1	2	3	4	5
6. If the people in my suburb were planning something I'd think of it as something "we" were doing rather than "they" were doing.	1	2	3	4	5
7. If I needed advice about something I could go to someone in my suburb.	1	2	3	4	5
8. I think I agree with most people in my suburb about what is important in life.	1	2	3	4	5
9. I believe my neighbours would help me in an emergency.	1	2	3	4	5
10. I feel loyal to the people in my suburb.	1	2	3	4	5
11. I borrow things and exchange favours with my neighbours.	1	2	3	4	5
12. I would be willing to work together with others on something to improve my suburb.	1	2	3	4	5
13. I plan to remain a resident of this suburb for a number of years.	1	2	3	4	5
14. I like to think of myself as similar to the people who live in this suburb.	1	2	3	4	5
15. I rarely have neighbours over to my house to visit.	1	2	3	4	5
16. A feeling of fellowship runs deep between me and other people in this suburb.	1	2	3	4	5
17. I regularly stop and talk with people in my suburb.	1	2	3	4	5
18. Living in this suburb gives me a sense of community.	1	2	3	4	5

Appendix W
Sense of Place Scale (SOPS)

1.Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

	SD	D	N	A	SA
1. Everything about this suburb is a reflection of me.	1	2	3	4	5
2. This suburb says very little about who I am.	1	2	3	4	5
3. I feel that I can really be myself in this suburb.	1	2	3	4	5
4. This suburb reflects the type of person I am.	1	2	3	4	5
5. I feel relaxed when I'm at this suburb.	1	2	3	4	5
6. I feel happiest when I'm at this suburb.	1	2	3	4	5
7. This suburb is my favourite place to be.	1	2	3	4	5
8. I really miss this suburb when I'm away from it for too long.	1	2	3	4	5
9. This suburb is the best place for doing the things I enjoy the most.	1	2	3	4	5
10. For doing the things that I enjoy most, no other place can compare to this suburb.	1	2	3	4	5
11. This suburb is not a good place to do the things I most like to do.	1	2	3	4	5
12. As far as I am concerned, there are better places to be than this suburb.	1	2	3	4	5

Appendix X

Sense of Belonging Instrument (SOBI)

Sense of Belonging Instrument – Psychological Subscale

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

	SD	D	A	SA
1. I often wonder if there is any place on earth where I really fit in.	1	2	3	4
2. I am just not sure if I fit in with my friends.	1	2	3	4
3. I would describe myself as a misfit in most social situations.	1	2	3	4
4. I generally feel that people accept me.	1	2	3	4
5. I feel like a piece of a jigsaw puzzle that doesn't fit in the puzzle.	1	2	3	4
6. I would like to make a difference to people or things around me, but I don't feel that what I have to offer is valued.	1	2	3	4
7. I feel like an outsider in most situations.	1	2	3	4
8. I am troubled by feeling like I have no place in this world.	1	2	3	4
9. I could disappear for days and it wouldn't matter to my family.	1	2	3	4
10. In general, I don't feel a part of the mainstream of society.	1	2	3	4
11. I feel like I observe life rather than participate in it.	1	2	3	4
12. If I died tomorrow, very few people would come to my funeral.	1	2	3	4
13. I feel like a square peg trying to fit into a round hole.	1	2	3	4
14. I don't feel that there is any place where I really fit in this world.	1	2	3	4
15. I am uncomfortable knowing that my background and experiences are so different from those who are usually around me.	1	2	3	4
16. I could not see or call my friends for days and it wouldn't matter to them.	1	2	3	4
17. I feel left out of things.	1	2	3	4
18. I am not valued by or important to my friends.	1	2	3	4

Sense of Belonging – Antecedent Subscale

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

	SD	D	A	SA
1. It is important to me that I am valued or accepted by others.	1	2	3	4
2. In the past, I have felt valued and important to others.	1	2	3	4
3. It is important to me that I fit somewhere in this world.	1	2	3	4
4. I have qualities that can be important to others.	1	2	3	4
5. I am working on fitting in better with those around me.	1	2	3	4
6. I want to be a part of things going on around me.	1	2	3	4
7. It is important to me that my thoughts and opinions are valued.	1	2	3	4
8. Generally, other people recognise my strengths and good points.	1	2	3	4
9. I can make myself fit in anywhere.	1	2	3	4
10. All of my life I have wanted to feel like I really belonged somewhere.	1	2	3	4
11. I don't have the energy to work on being a part of things.	1	2	3	4
12. Fitting in with people around me matters a great deal.	1	2	3	4
13. I feel badly if others do not value or accept me.	1	2	3	4
14. Relationships take too much energy for me.	1	2	3	4
15. I just don't feel like getting involved with people.	1	2	3	4

Appendix Y
Demographic Questionnaire

1. Please tick the appropriate box.

Female Male

2. Please indicate your date of birth.

Day _____ Month _____ Year _____

3. Please state your country of birth _____

4. Please state your parents' country of birth.

Mother _____ Father _____

5. Are you of Aboriginal or Torres Strait Islander decent?

Yes No

6. What is your present marital status? *(please tick the appropriate box)*

Never married Separated
 Married Widowed
 Divorced

7. What is the **highest** level of education you have completed? *(please tick one box)*

Year 10 or below Undergraduate university degree
 Year 11 Postgraduate university degree
 Year 12 Other _____ *(please state)*
 TAFE/College

8. Please indicate your current employment status? *(please tick the appropriate box)*

Employed Home duties
 Unemployed Student
 Retired Other _____ *(please state)*

9. What is your current residential status? *(please tick the appropriate box)*

Own home
 Rent home
 Other _____ *(please state)*

10. Please indicate the number of children living at home _____

11. Please indicate the number of adults living at home _____

12. Please indicate the length of time you have lived in Ellenbrook.

Less than 12 months 5 to 6 years
 1 to 2 years More than 6 years
 3 to 4 years Other _____
(please indicate time frame)

13. Please indicate how long you expect to live in Ellenbrook. *(please tick one box)*

- Less than 12 months 5 to 6 years
 1 to 2 years More than 6 years
 3 to 4 years Other _____
(please indicate time frame)

14. Which best describes the current household annual income? *(please tick one box)*

- Under \$20,000 \$50,001 to \$65,000
 \$20,001 to \$35,000 \$65,001 to \$80,000
 \$35,001 to \$50,000 \$80,001 or more

15. Please indicate the number of people contributing to the household income _____

16. Are you currently involved in any community activities/groups/committees, etc.

- Yes No *(please go to question 17)*

16a. If yes, please state how many you belong to or are involved in _____

16b. Please indicate **on average** how often you are involved.

- Once a week
 Once a month
 More than once a month
 Other _____ *(please indicate)*

16c. Do you have any duties or roles?

- Yes No *(please go to question 17)*

16d. If yes, please state your duty(ies) or role(s) _____

17. Please indicate the number of community members outside your household that you know in Ellenbrook.

- None
 1 to 2 people
 3 to 5 people
 6 or more people

18. If anything, what would you change about Ellenbrook?

19. Please use this space to write about anything else that you would like to add.

Thank you

Appendix Z

Information Letter

Dear Potential Participant,

My name is Kylie Smith and as part of my Doctor of Psychology degree at Edith Cowan University, I am conducting research with the purpose of examining how satisfied you are living in Ellenbrook.

Your help would be much appreciated in this study. If you agree to participate you will be asked to complete a questionnaire, which will take approximately 15 minutes to complete. Participation is voluntary and you may withdraw from completing your questionnaires at any time if you do not wish to continue taking part in the study. Your responses are confidential and anonymous, as they will not be discussed or shown to anyone, and no identifiable material will be recorded.

As the survey is on residential satisfaction, some questions do ask about matters that may be personal or sensitive. For example, "*I often wonder if there is any place on earth where I really fit in*". If any distress occurs as a result of the questions please immediately cease completion of the survey and contact Edith Cowan University Psychological Services Centre on 9301 0011, Samaritans on 9381 5555, or Lifeline on 13 11 44 who will be able to help resolve the distress.

The questionnaires are for research purposes only and the report will only discuss the average results of those who participated. A copy of this report will be available at the completion of this study by phoning myself or my supervisors on the below numbers.

Any questions concerning this study entitled "Residential Satisfaction in Ellenbrook" can be directed to myself (Kylie Smith) from the School of Psychology at ECU on 6304 5863 or you may contact my supervisors Dr Lynne Cohen on 6304 5575 or Julie Ann Pooley on 6304 5591. If you have any concerns about the study or would like to talk to an independent person, please contact Professor Alison Garton on 6304 5110.

If you are interested in participating please ensure that you do not write your name, or any other comments that will make you identifiable on the questionnaire, as it is anonymous. By completing the questionnaire you are consenting to take part in this research even though you are aware that some questions ask about matters that may be personal or sensitive and may result in distress.

Thank you for your help.

Yours sincerely

Kylie Smith

Edith Cowan University
School of Psychology
100 Joondalup Drive
JOONDALUP WA 6027
(08) 6304 5863

Appendix AA
Test of Normality – Kolmogorov-Smirnov Statistics

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
This suburb is a wonderful place in which to live	.248	300	.000	.803	300	.000
This suburb is a good place for children to grow up in	.253	300	.000	.782	300	.000
This suburb is a boring place	.263	300	.000	.866	300	.000
They should knock the whole place down and start again	.447	300	.000	.520	300	.000
This suburb is a beautiful place to live	.262	300	.000	.756	300	.000
There is a feeling of pride in this community	.264	300	.000	.850	300	.000
This suburb is one of Western Australia's most attractive places	.243	300	.000	.866	300	.000
The environment in this suburb is bleak and depressing	.318	300	.000	.714	300	.000
The quality of life in this suburb is low	.254	300	.000	.766	300	.000
People don't care about this suburb and it's no wonder	.269	300	.000	.715	300	.000
This suburb has a lot of good things going for it	.287	300	.000	.767	300	.000
This suburb is a comfortable, relaxing place to live	.298	300	.000	.750	300	.000
This suburb is a disgrace to Western Australia	.458	300	.000	.524	300	.000
This suburb is a terrible place for children	.407	300	.000	.611	300	.000

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
There just isn't enough privacy in this area	.267	300	.000	.785	300	.000
Life is really dreary in this suburb	.275	300	.000	.765	300	.000
This suburb is a very clean place	.325	300	.000	.788	300	.000
It's ridiculous to think people really like living in this area	.340	300	.000	.670	300	.000
This area has a good feeling about it	.290	300	.000	.787	300	.000
This area is an interesting place to live	.286	300	.000	.840	300	.000
This suburb is a good place for families	.279	300	.000	.749	300	.000
Living in this suburb is unpleasant	.331	300	.000	.671	300	.000
People should be proud to say they live in this suburb	.268	300	.000	.799	300	.000
It is dangerous to live in this suburb	.332	300	.000	.684	300	.000
In general, I am satisfied with living in this suburb	.291	300	.000	.734	300	.000
This suburb is a pleasant place to walk	.318	300	.000	.709	300	.000
I am satisfied with the quality of housing in this suburb	.290	300	.000	.760	300	.000
Residential Satisfaction Scale Total Score	.072	300	.001	.972	300	.000
Overall, I am very attracted to living in this suburb	.256	300	.000	.801	300	.000
I feel like I belong in this suburb	.273	300	.000	.851	300	.000

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
I visit my neighbours in their homes	.243	300	.000	.886	300	.000
The friendships and associations I have with other people in my suburb mean a lot to me	.281	300	.000	.856	300	.000
Given the opportunity, I would like to move out of this suburb	.244	300	.000	.814	300	.000
If the people in my suburb were planning something I'd think of it as something "we" were doing	.237	300	.000	.881	300	.000
If I needed advice about something I could go to someone in my suburb	.251	300	.000	.883	300	.000
I think I agree with most people in my suburb about what is important in life	.249	300	.000	.867	300	.000
I believe my neighbours would help me in an emergency	.256	300	.000	.711	300	.000
I feel loyal to the people in my suburb	.264	300	.000	.851	300	.000
I borrow things and exchange favours with my neighbours	.267	300	.000	.875	300	.000
I would be willing to work together with others on something to improve my suburb	.293	300	.000	.830	300	.000
I plan to remain a resident in this suburb for a number of years	.287	300	.000	.812	300	.000
I like to think of myself as similar to the people who live in this suburb	.259	300	.000	.869	300	.000

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
I rarely have neighbours over to my house to visit	.206	300	.000	.907	300	.000
A feeling of fellowship runs deep between me and other people in this suburb	.246	300	.000	.882	300	.000
I regularly stop and talk with people in my suburb	.298	300	.000	.859	300	.000
Living in this suburb gives me a sense of community	.302	300	.000	.837	300	.000
Attraction to Neighbourhood Sub Scale Total Score	.172	300	.000	.896	300	.000
Neighboring Sub Scale Total Score	.097	300	.000	.978	300	.000
Psychological Sense of Community Sub Scale Total Score	.086	300	.000	.986	300	.005
Neighbourhood Cohesion Scale Total Score	.069	300	.002	.987	300	.010
Everything about this suburb is a reflection of me	.237	300	.000	.886	300	.000
This suburb says very little about who I am	.207	300	.000	.898	300	.000
I feel that I can really be myself in this suburb	.350	300	.000	.799	300	.000
This suburb reflects the type of person I am	.223	300	.000	.878	300	.000
I feel relaxed when I'm at this suburb	.328	300	.000	.777	300	.000
I feel happiest when I'm at this suburb	.213	300	.000	.878	300	.000
This suburb is my favourite place to be	.227	300	.000	.894	300	.000

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
I really miss this suburb when I'm away from it for too long	.207	300	.000	.906	300	.000
This suburb is the best place for doing the things I enjoy the most	.209	300	.000	.902	300	.000
For doing the things that I enjoy the most, no other place can compare to this suburb	.230	300	.000	.899	300	.000
This suburb is not a good place to do the things I most like to do	.256	300	.000	.883	300	.000
As far as I am concerned, there are better places to be than this suburb	.195	300	.000	.904	300	.000
Place Identity Sub Scale Total Score	.121	300	.000	.978	300	.000
Place Attachment Sub Scale Total Score	.096	300	.000	.973	300	.000
Place Dependence Sub Scale Total Score	.100	300	.000	.977	300	.000
Sense of Place Scale Total Score	.076	300	.000	.985	300	.004
I often wonder if there is any place on earth where I really fit in	.272	300	.000	.808	300	.000
I am just not sure if I fit in with my friends	.246	300	.000	.789	300	.000
I would describe myself as a misfit in most social situations	.336	300	.000	.722	300	.000
I generally feel that people accept me	.379	300	.000	.679	300	.000

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
I feel like a piece of a jigsaw puzzle that doesn't fit in the puzzle	.294	300	.000	.752	300	.000
I would like to make a difference to people or things around me	.286	300	.000	.816	300	.000
I feel like an outsider in most situations	.264	300	.000	.781	300	.000
I am troubled by feeling like I have no place in the world	.316	300	.000	.723	300	.000
I could disappear for days and it wouldn't matter to my family	.425	300	.000	.584	300	.000
In general, I don't feel a part of the mainstream of society	.317	300	.000	.740	300	.000
I feel like I observe life rather than participate in it	.265	300	.000	.801	300	.000
If I died tomorrow, very few people would come to my funeral	.359	300	.000	.688	300	.000
I feel like a square peg trying to fit into a round hole	.316	300	.000	.724	300	.000
I don't feel that there is any place where I really fit in this world	.331	300	.000	.703	300	.000
I am uncomfortable knowing that my background and experiences are so different	.281	300	.000	.761	300	.000
I could not see or call my friends for days and it wouldn't matter to them	.249	300	.000	.812	300	.000
I feel left out of things	.257	300	.000	.783	300	.000
I am not valued by or important to my friends	.309	300	.000	.730	300	.000

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Sense of Belonging - Psychological Scale Total Score	.118	300	.000	.887	300	.000
It is important to me that I am valued or accepted by others	.336	300	.000	.799	300	.000
In the past, I have felt valued and important to others	.387	300	.000	.684	300	.000
It is important to me that I fit somewhere in this world	.360	300	.000	.757	300	.000
I have qualities that can be important to others	.405	300	.000	.662	300	.000
I am working on fitting in better with those around me	.302	300	.000	.802	300	.000
I want to be a part of things going on around me	.373	300	.000	.714	300	.000
It is important to me that my thoughts and opinions are valued	.345	300	.000	.743	300	.000
Generally, other people recognise my strengths and good points	.395	300	.000	.652	300	.000
I can make myself fit in anywhere	.336	300	.000	.797	300	.000
All of my life I have wanted to feel like I really belonged somewhere	.245	300	.000	.857	300	.000
I don't have the energy to work on being a part of things	.326	300	.000	.794	300	.000
Fitting in with people around me matters a great deal	.273	300	.000	.810	300	.000
I feel badly if others do not value or accept me	.273	300	.000	.849	300	.000
Relationships take too much energy for me	.283	300	.000	.777	300	.000

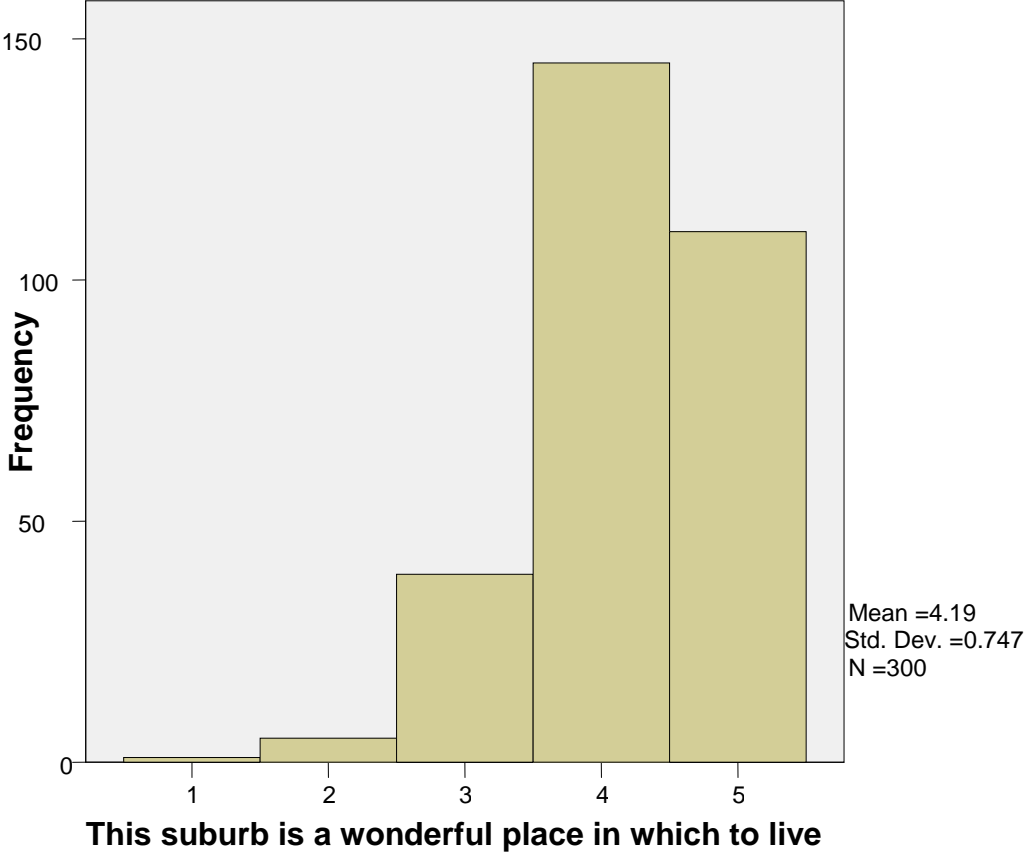
	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
I just don't feel like getting involved with people	.302	300	.000	.788	300	.000
Sense of Belonging - Antecedent Scale Total Score	.107	300	.000	.958	300	.000
Sense of Belonging Total Score	.079	300	.000	.946	300	.000
Gender	.458	300	.000	.563	300	.000
Age	.184	300	.000	.888	300	.000
Country of birth	.395	300	.000	.496	300	.000
Mother's COB	.384	300	.000	.598	300	.000
Father's COB	.352	300	.000	.626	300	.000
Aboriginal or Torres Strait Islander Descent	.511	300	.000	.239	300	.000
Present marital status	.375	300	.000	.727	300	.000
Highest level of education completed	.162	300	.000	.916	300	.000
Employment status	.371	300	.000	.718	300	.000
Current residential status	.488	300	.000	.467	300	.000
Number of children living at home	.201	300	.000	.863	300	.000
Number of adults living at home	.442	300	.000	.588	300	.000
Length of time lived in Ellenbrook	.178	300	.000	.906	300	.000
How long expect to live in Ellenbrook	.351	300	.000	.800	300	.000
Current household income	.157	300	.000	.936	300	.000
Number of people contributing to income	.305	300	.000	.647	300	.000

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Involvement in community activities/groups/committees	.413	300	.000	.644	300	.000
How many belong to or are involved in	.376	300	.000	.555	300	.000
How often involved	.393	300	.000	.600	300	.000
Any duties or roles	.422	300	.000	.633	300	.000
Stated duty or role	.495	300	.000	.339	300	.000
Number of people outside household known	.360	300	.000	.748	300	.000

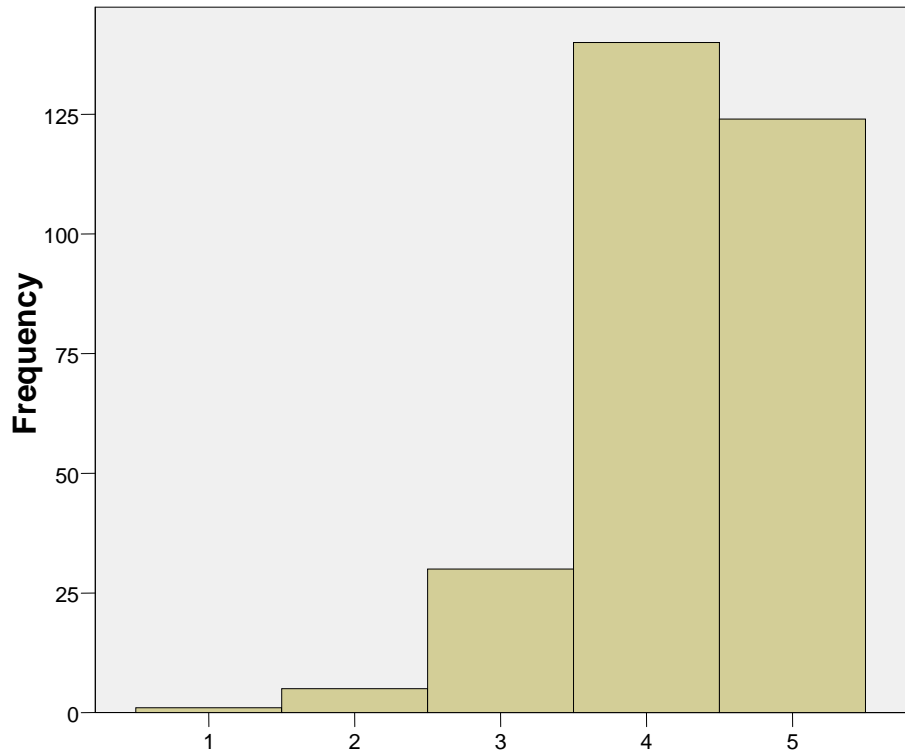
Appendix AB

Histograms of Variables Demonstrating Skewness

Histogram



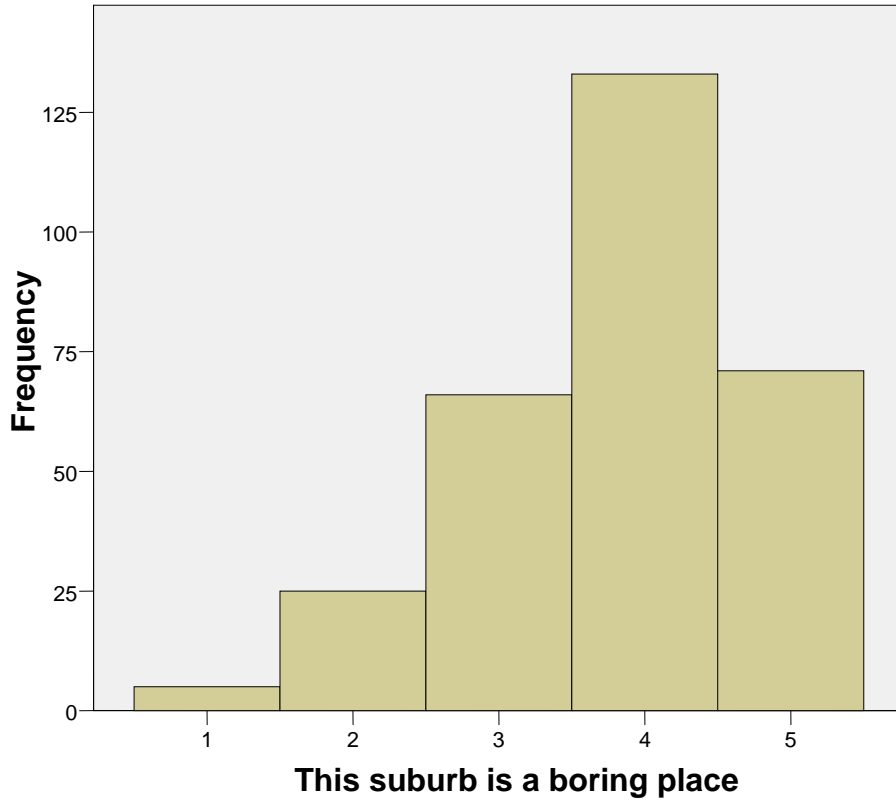
Histogram



Mean =4.27
Std. Dev. =0.734
N =300

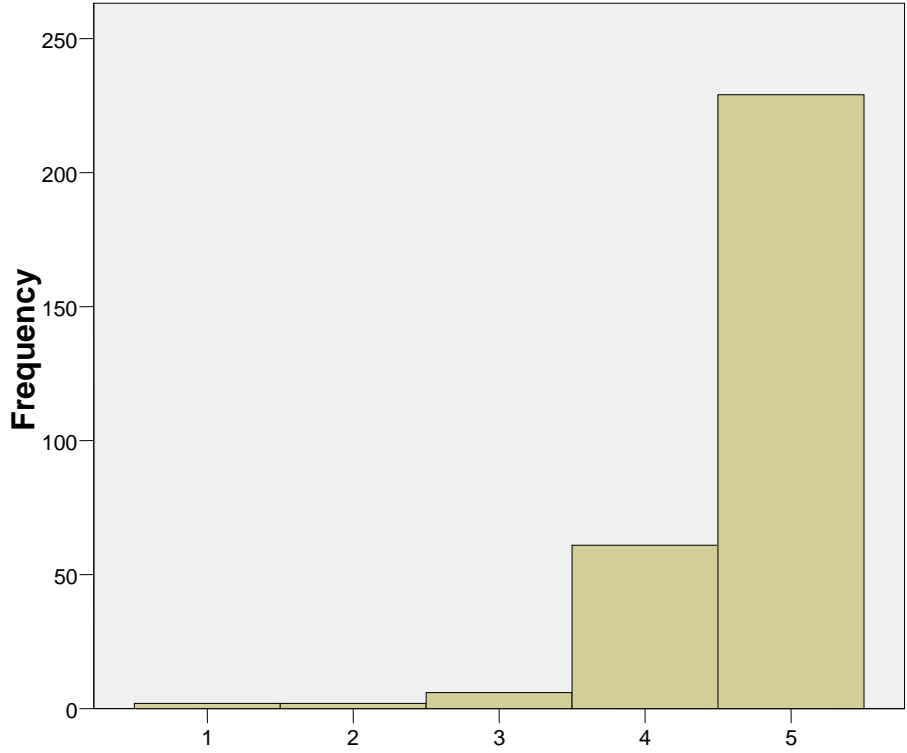
This suburb is a good place for children to grow up in

Histogram



Mean =3.8
Std. Dev. =0.95
N =300

Histogram



Mean =4.71
Std. Dev. =0.606
N =300

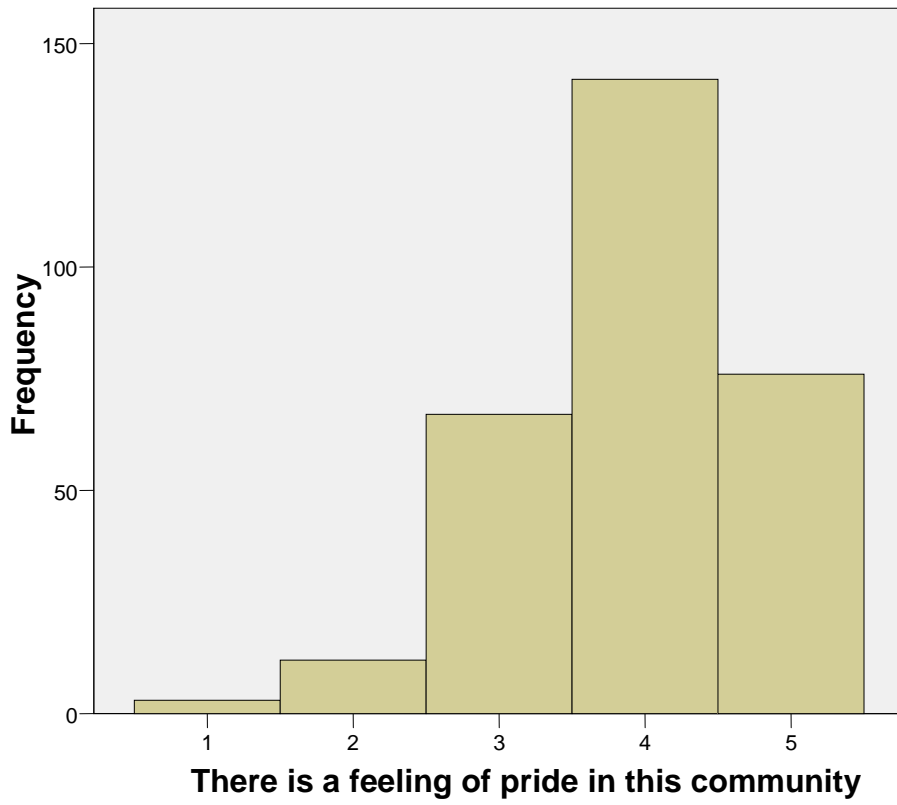
They should knock the whole place down and start again

Histogram



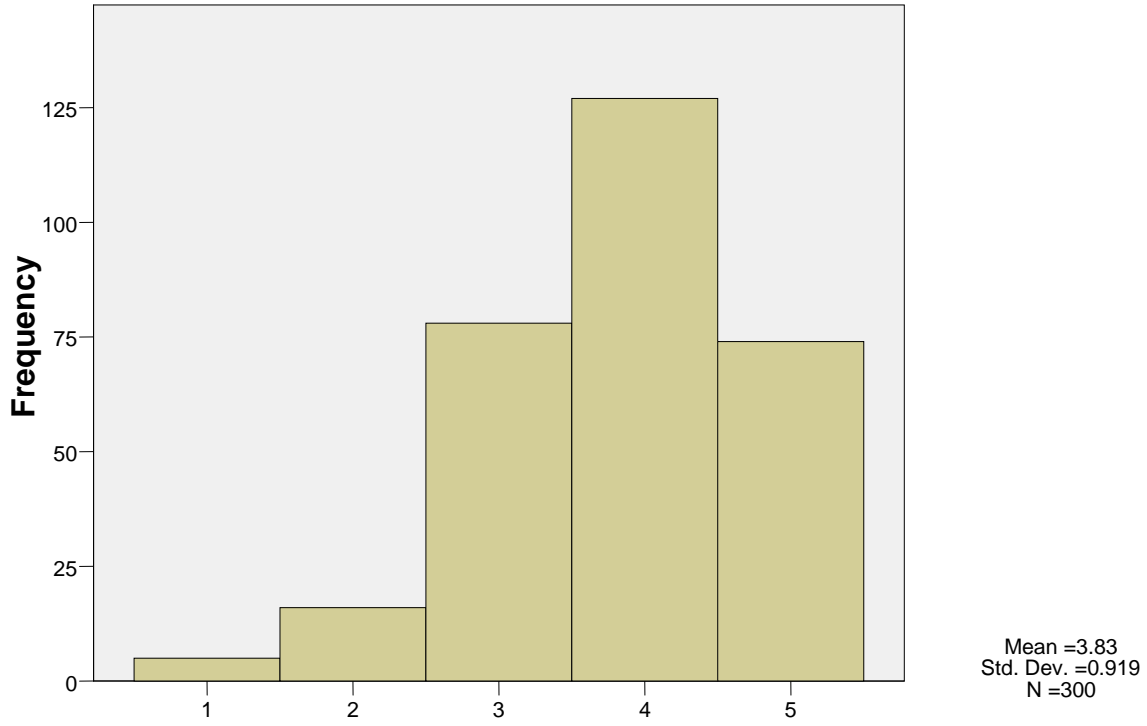
Mean =4.28
Std. Dev. =0.7
N =300

Histogram



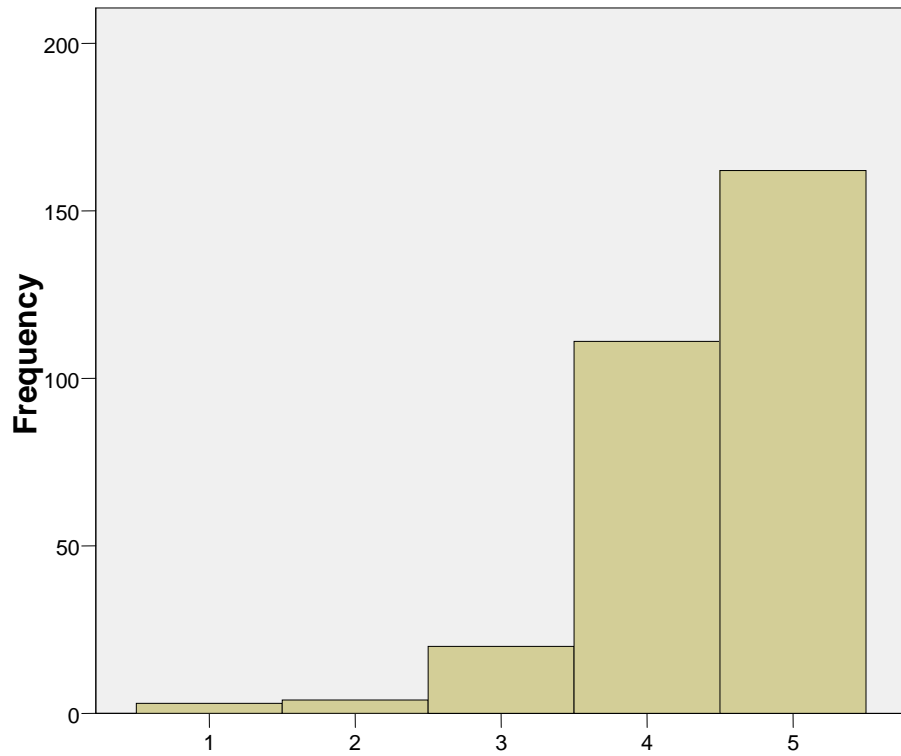
Mean =3.92
Std. Dev. =0.85
N =300

Histogram



This suburb is one of Western Australia's most attractive places

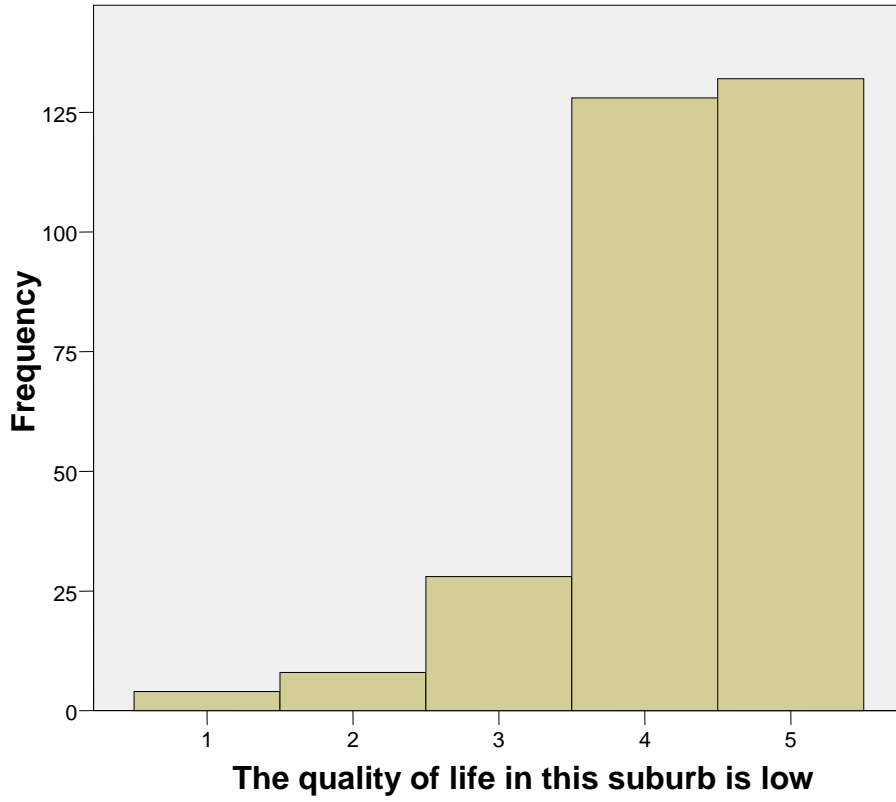
Histogram



Mean =4.42
Std. Dev. =0.76
N =300

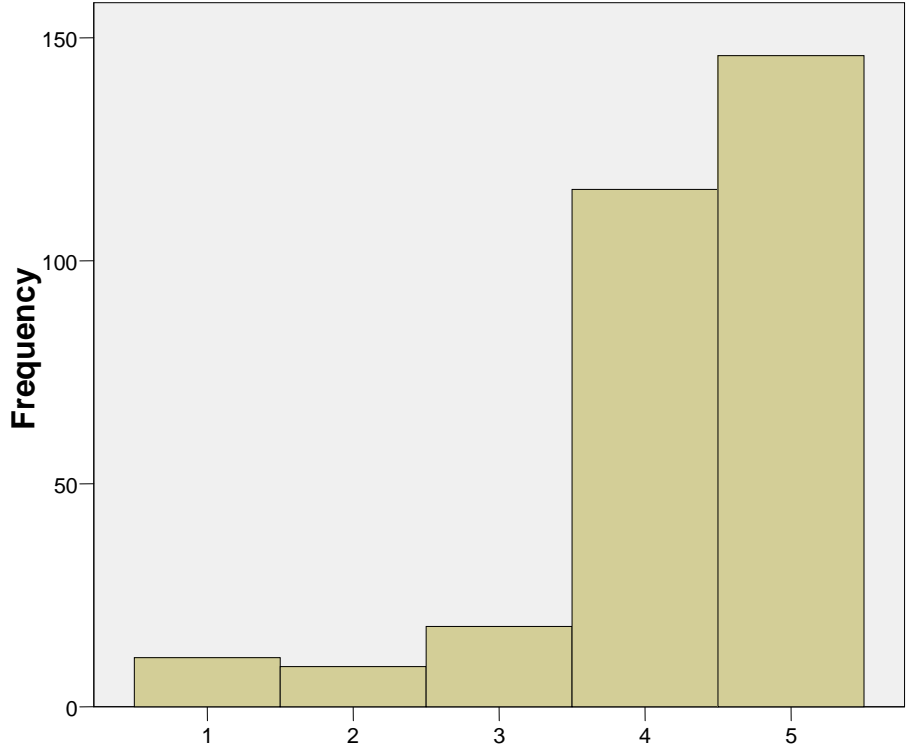
The environment in this suburb is bleak and depressing

Histogram



Mean =4.25
Std. Dev. =0.836
N =300

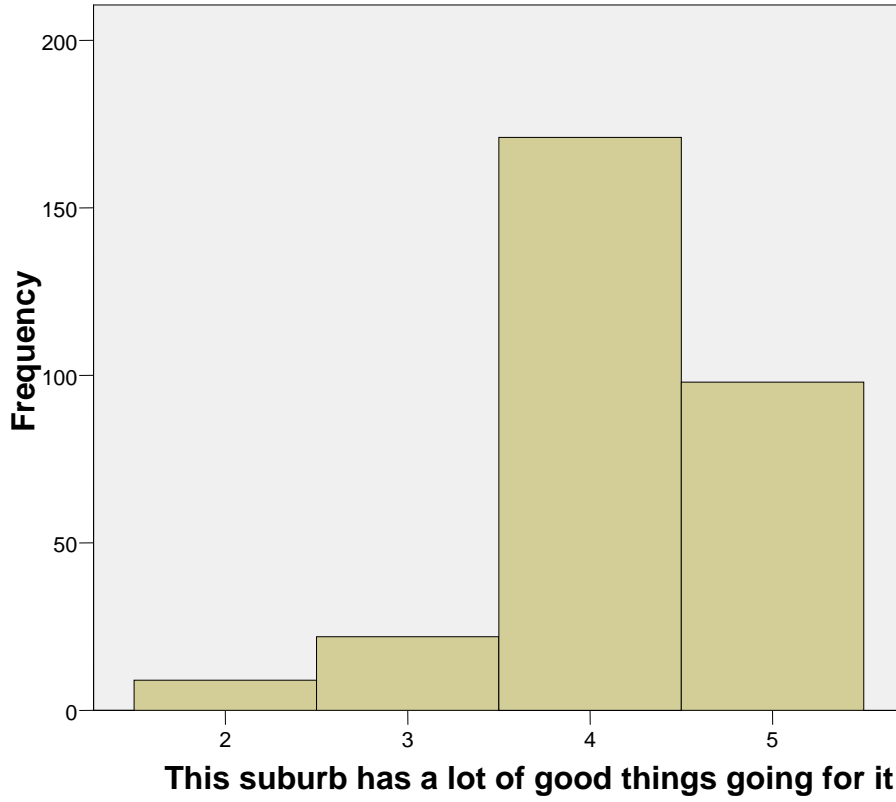
Histogram



Mean =4.26
Std. Dev. =0.966
N =300

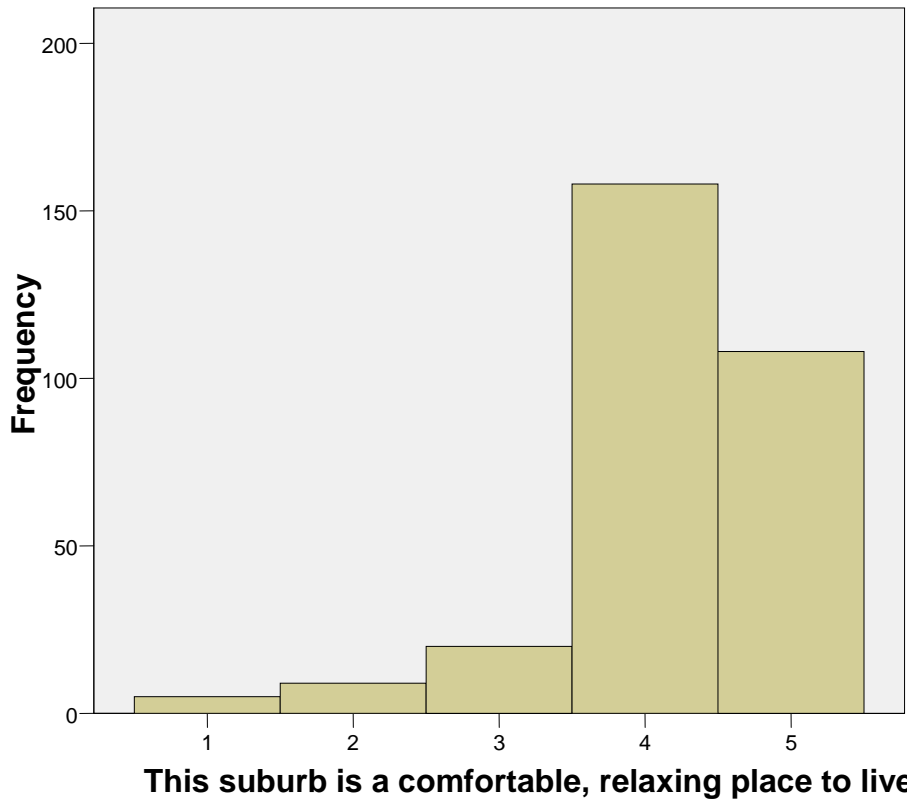
People don't care about this suburb and it's no wonder

Histogram



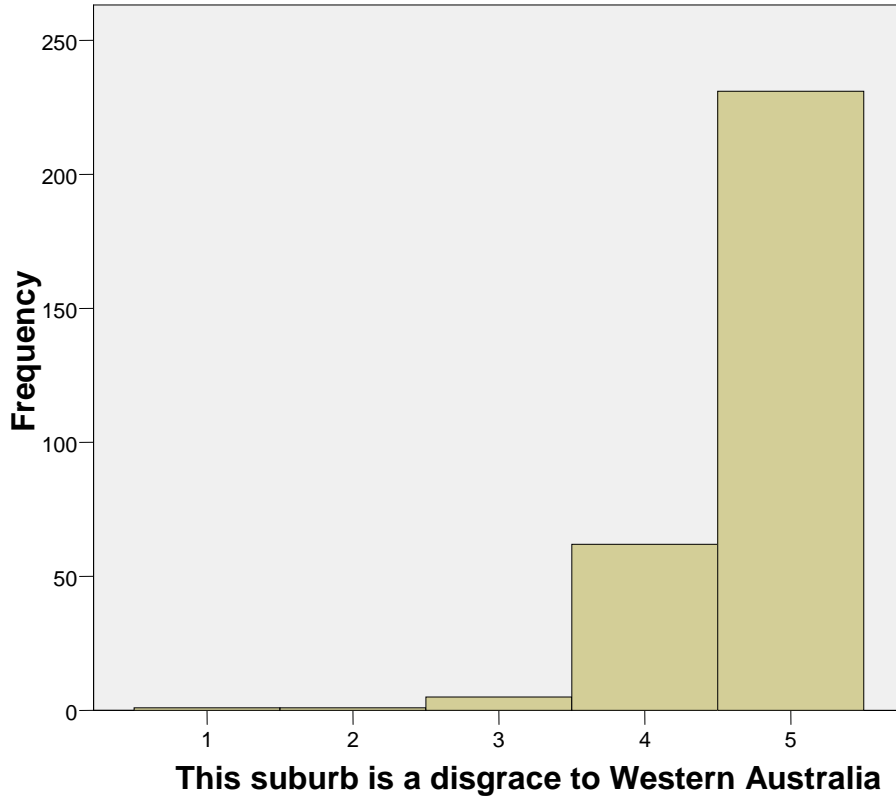
Mean =4.19
Std. Dev. =0.696
N =300

Histogram



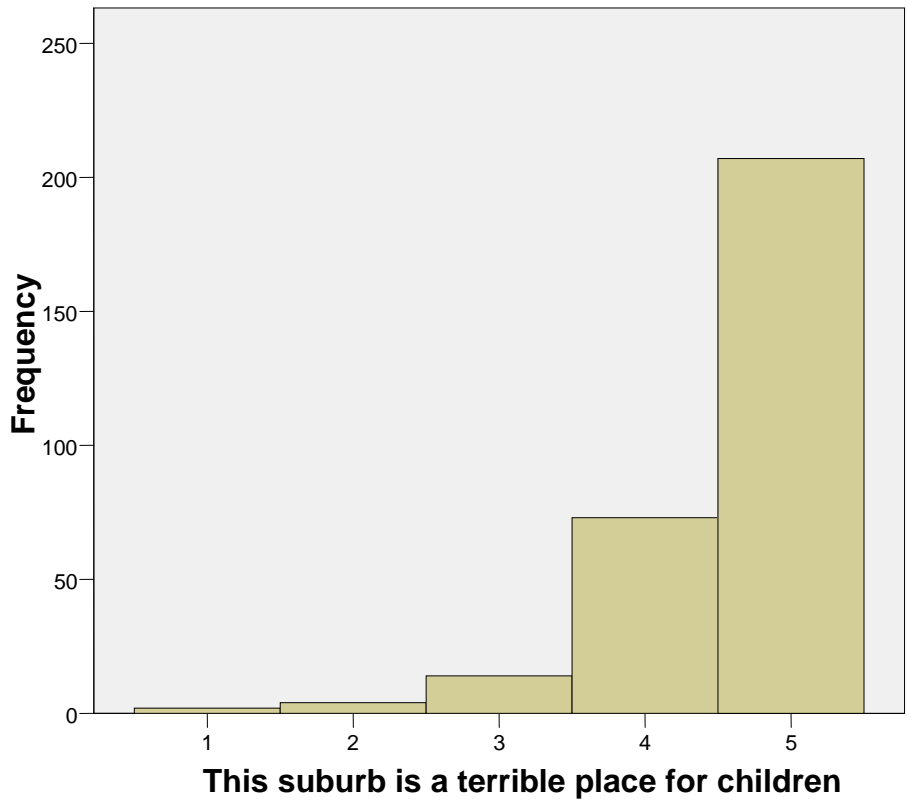
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Std. Dev. =0.816
N =300

Histogram



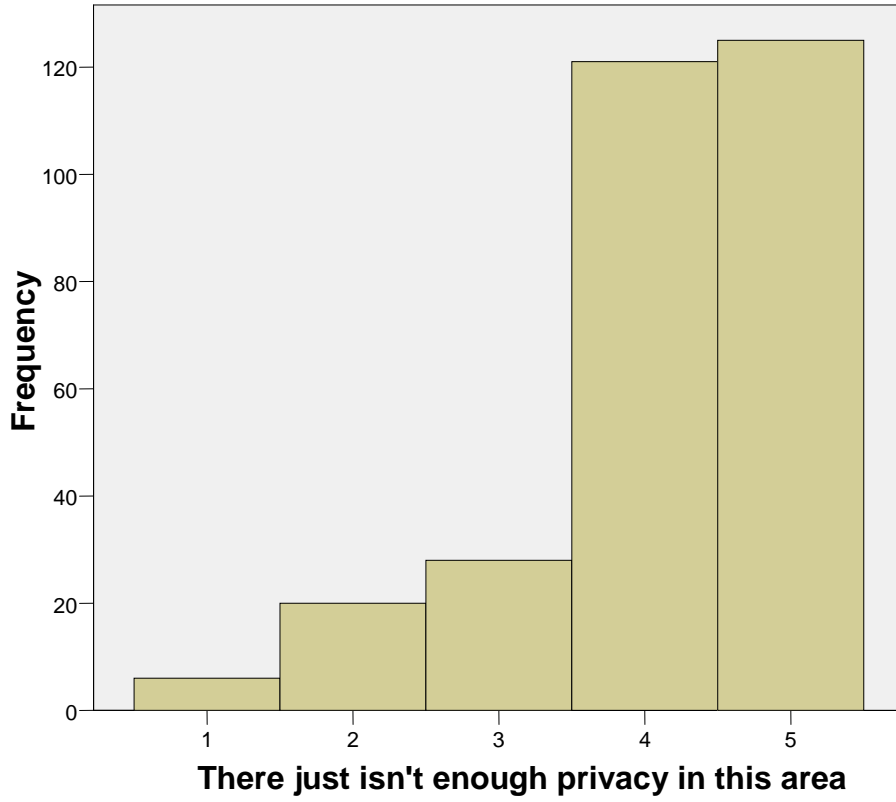
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Std. Dev. =0.537
N =300

Histogram



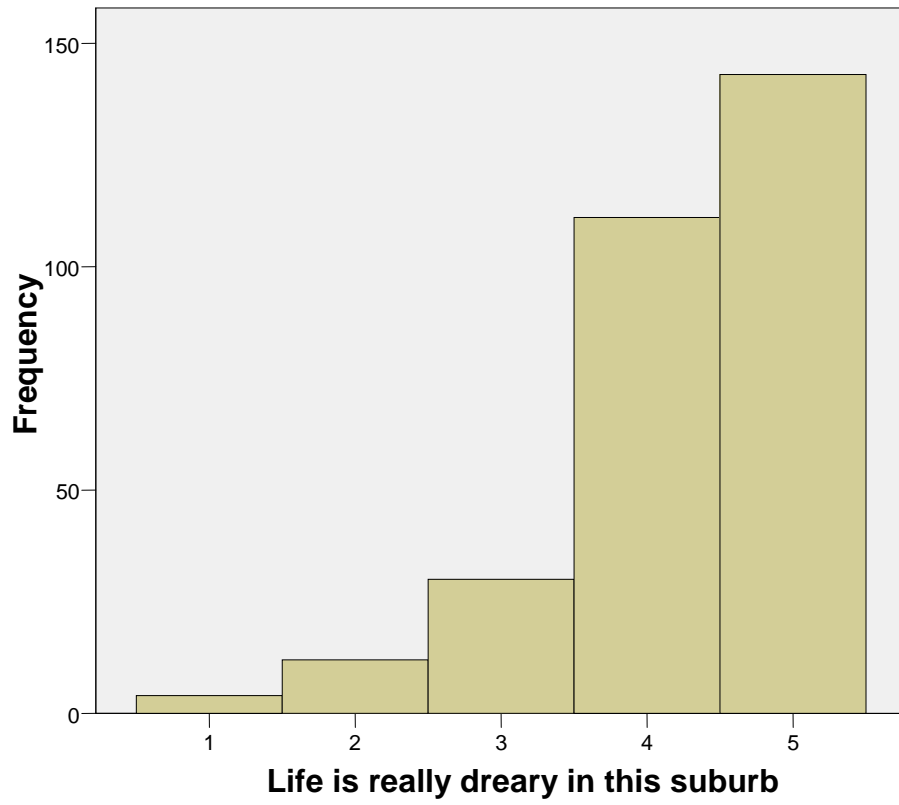
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Std. Dev. =0.704
N =300

Histogram



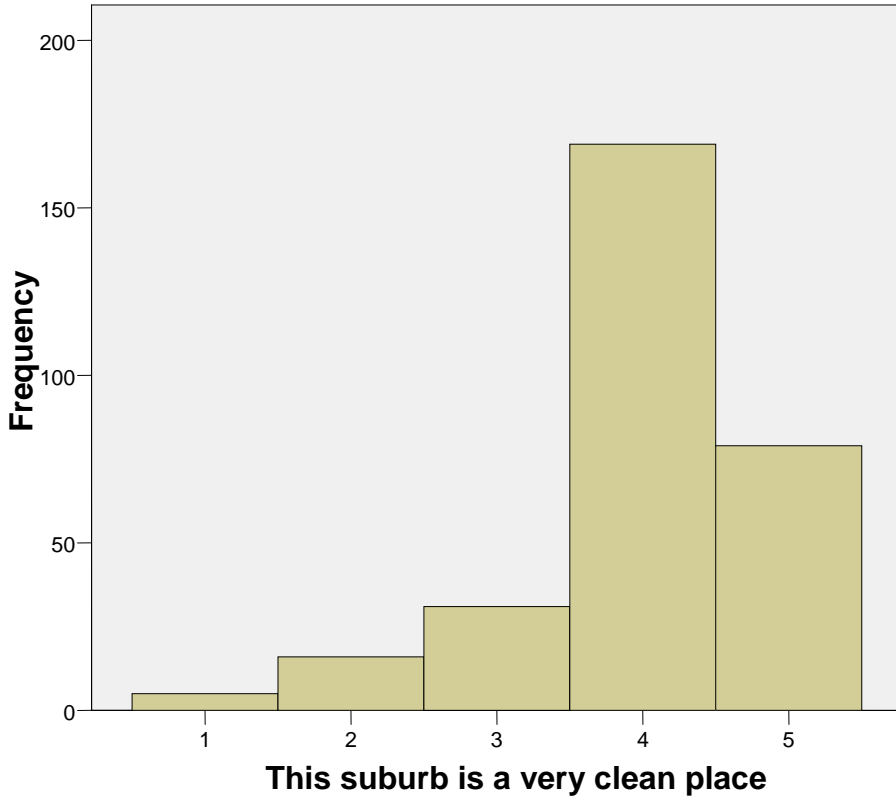
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Std. Dev. =0.971
N =300

Histogram



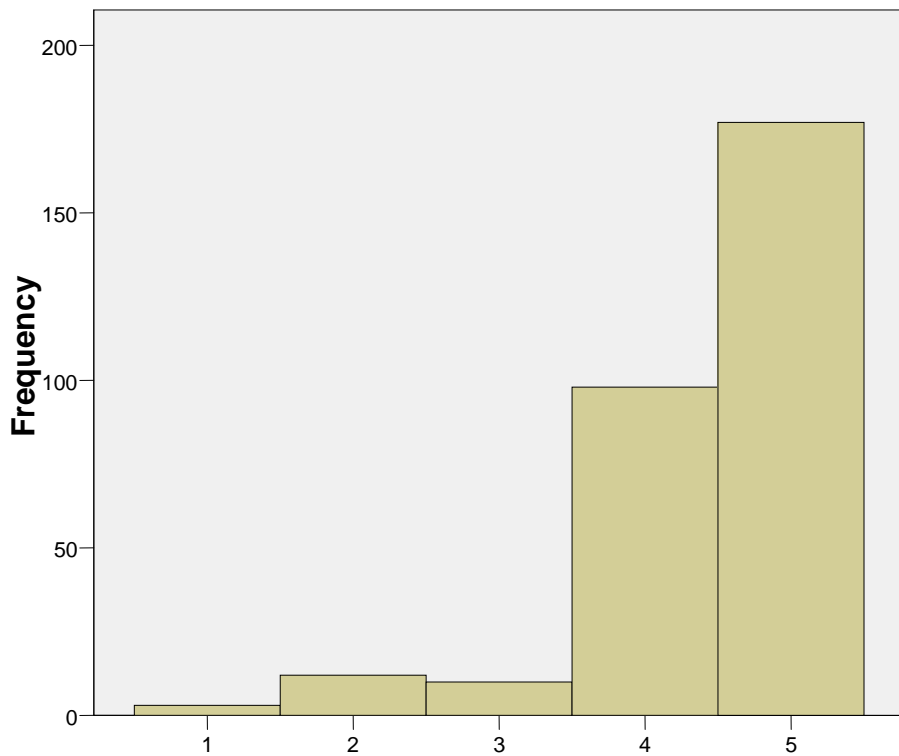
Mean =4.26
Std. Dev. =0.891
N =300

Histogram



Mean =4
Std. Dev. =0.856
N =300

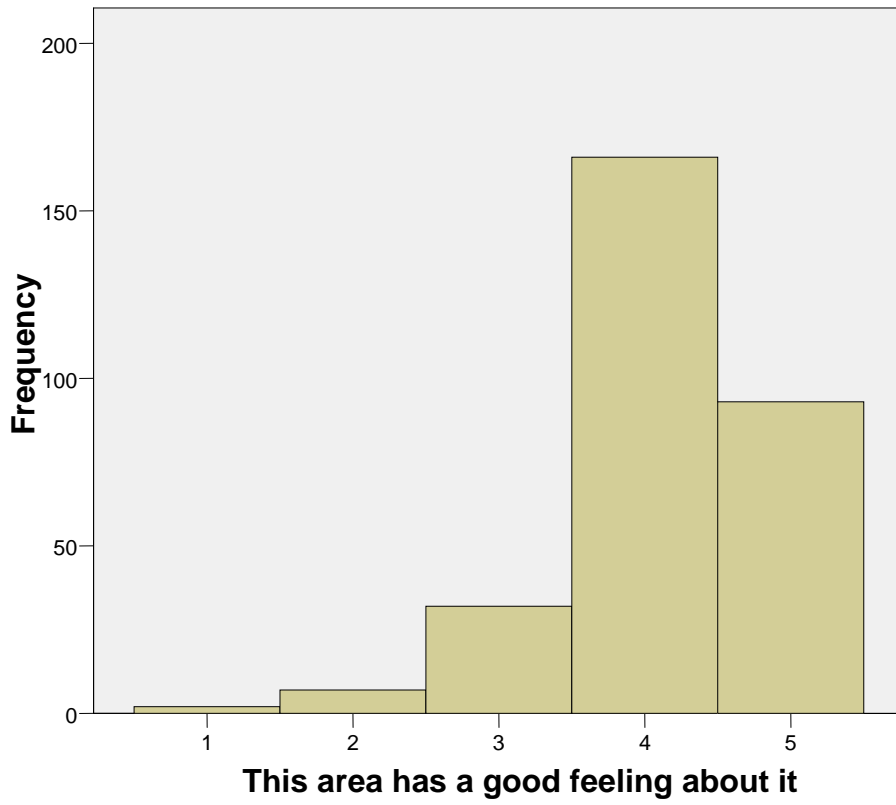
Histogram



Mean =4.45
Std. Dev. =0.822
N =300

It's ridiculous to think people really like living in this area

Histogram



Mean =4.14
Std. Dev. =0.744
N =300

Histogram



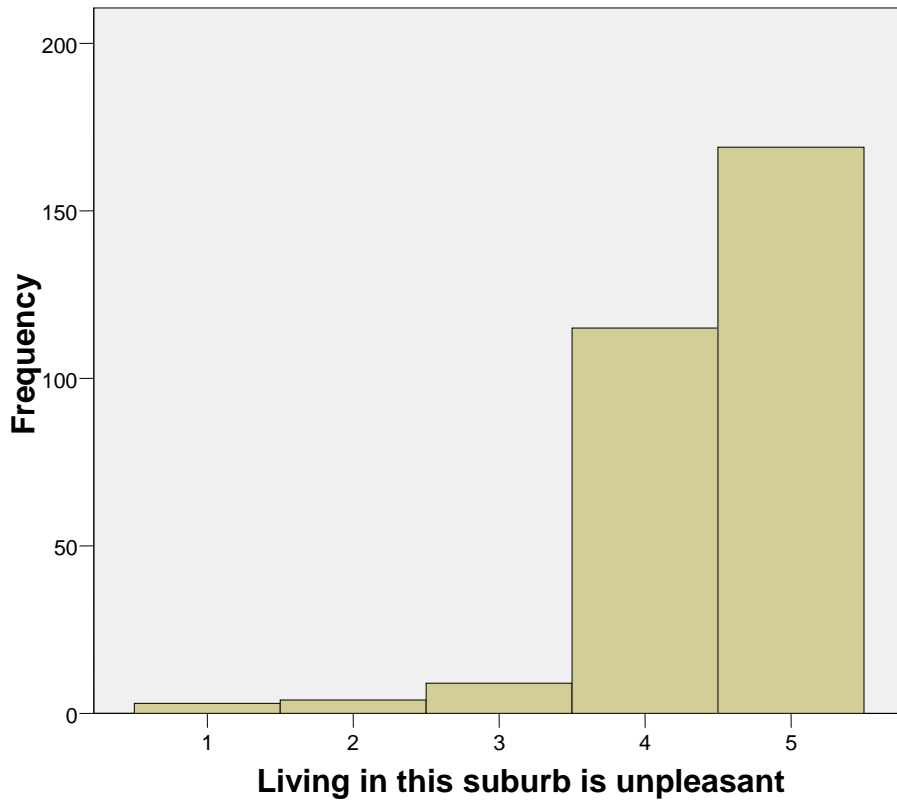
Mean =3.88
Std. Dev. =0.758
N =300

Histogram



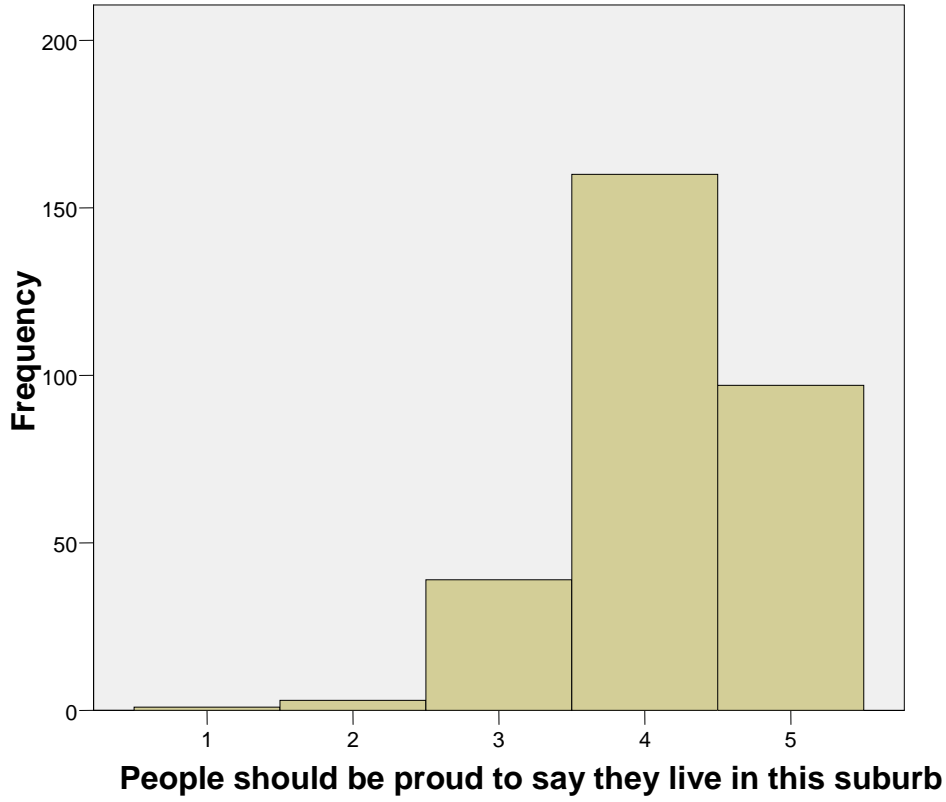
Mean =4.24
Std. Dev. =0.756
N =300

Histogram



Mean =4.48
Std. Dev. =0.715
N =300

Histogram



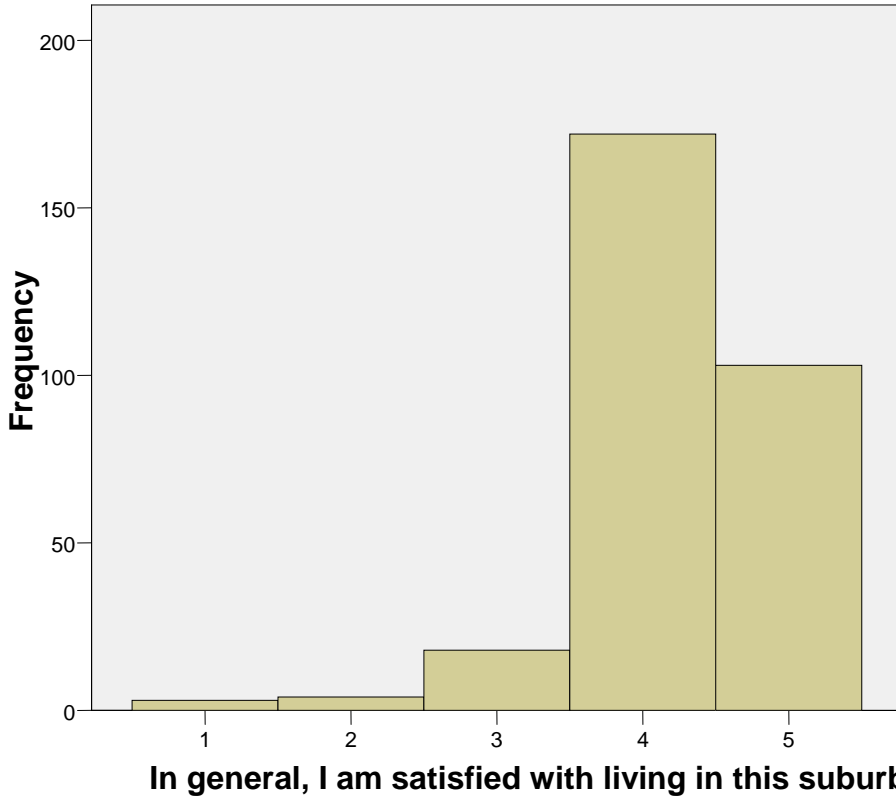
Mean =4.16
Std. Dev. =0.706
N =300

Histogram



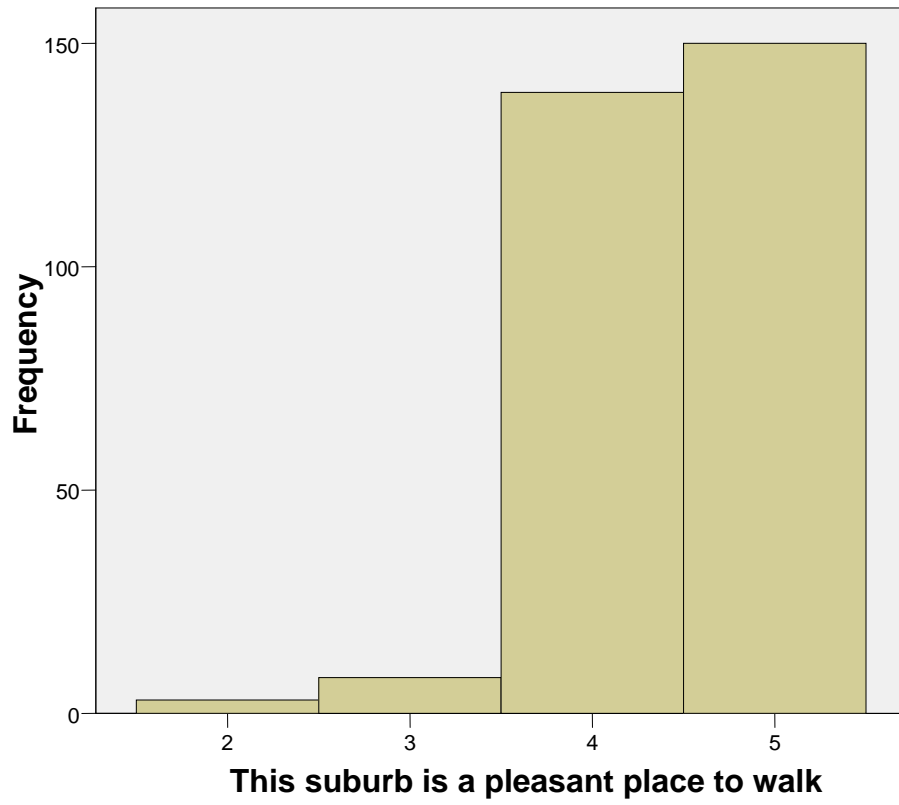
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Std. Dev. =0.705
N =300

Histogram



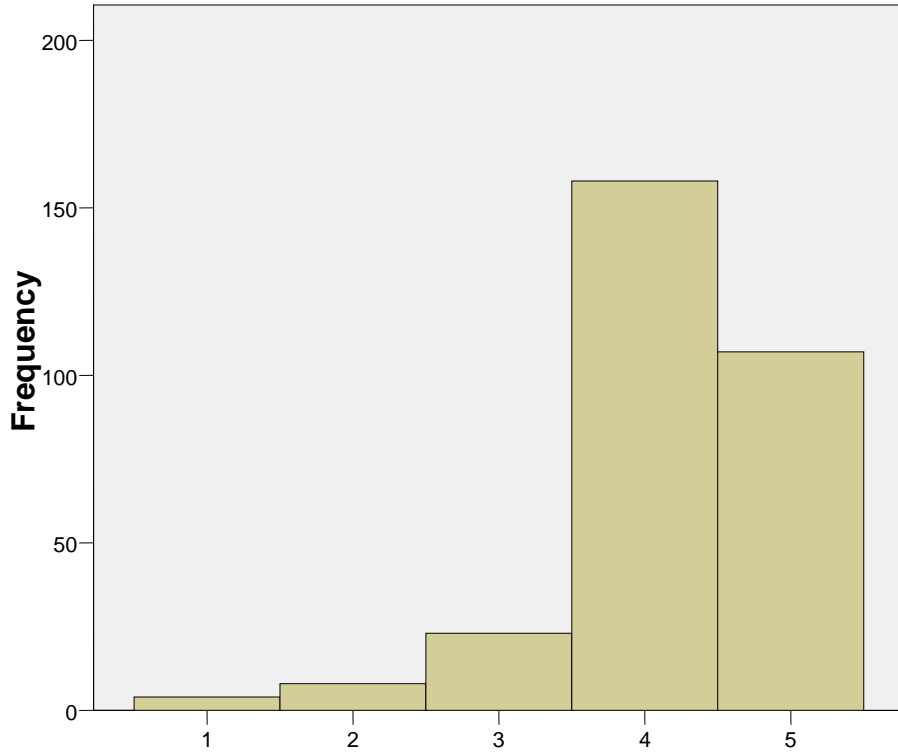
Mean =4.23
Std. Dev. =0.705
N =300

Histogram



Mean =4.45
Std. Dev. =0.602
N =300

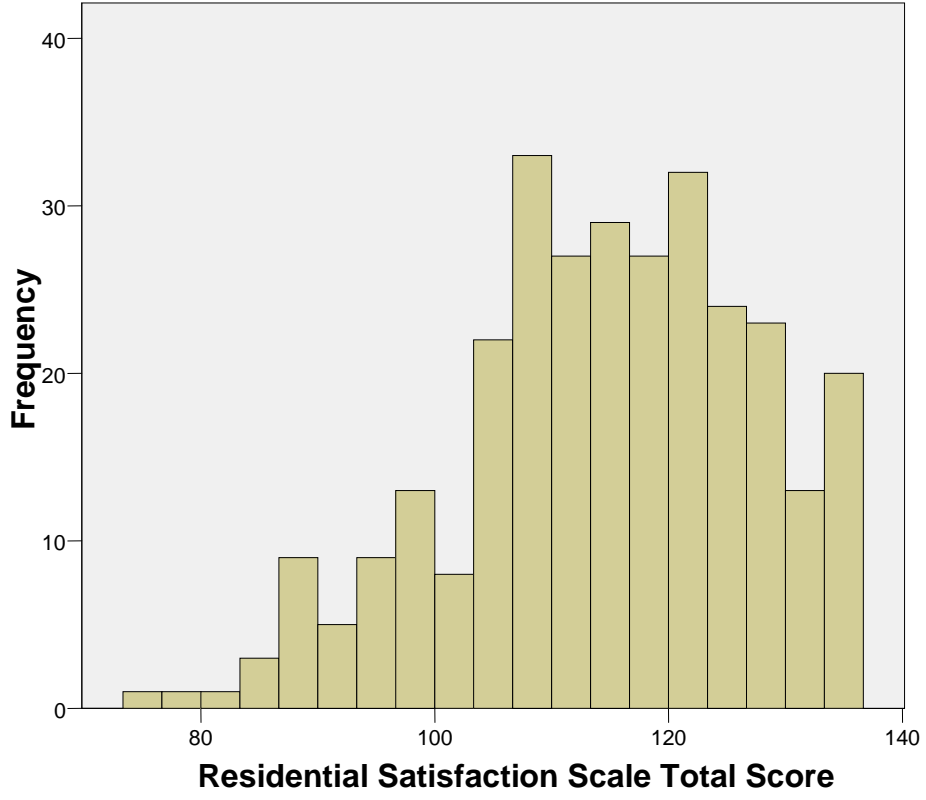
Histogram



Mean =4.19
Std. Dev. =0.792
N =300

I am satisfied with the quality of housing in this suburb

Histogram

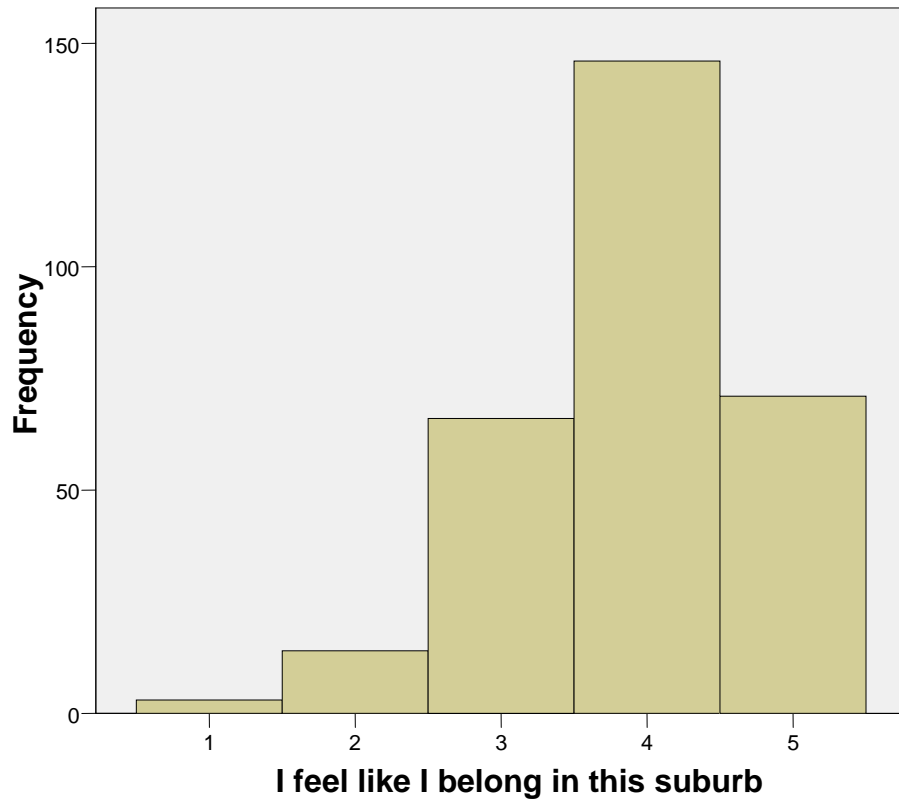


Histogram



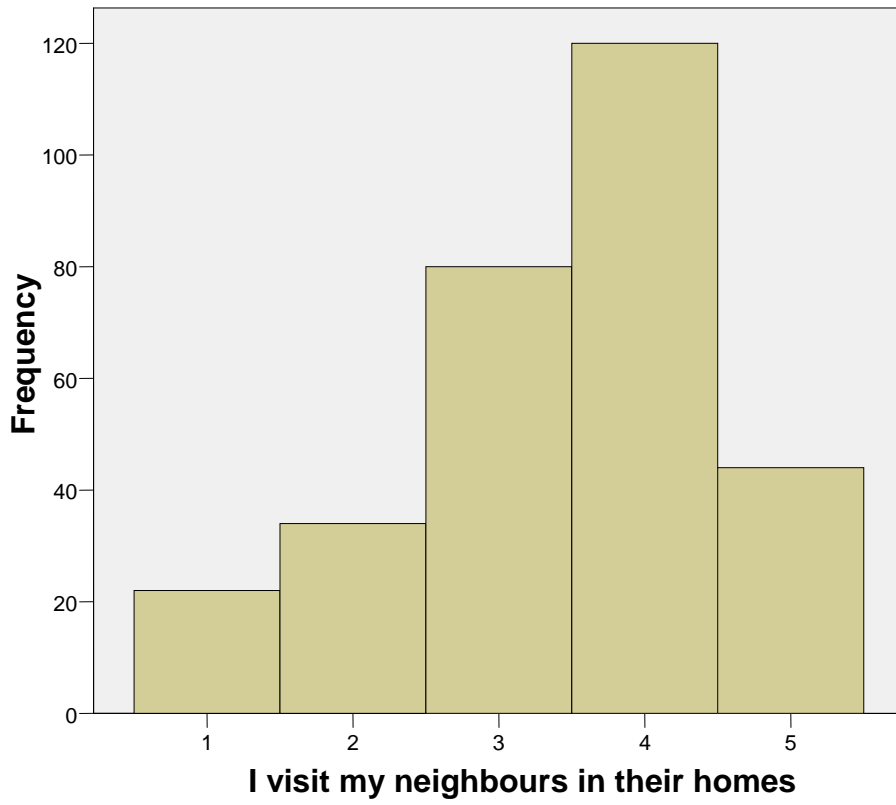
Mean =4.17
Std. Dev. =0.806
N =300

Histogram



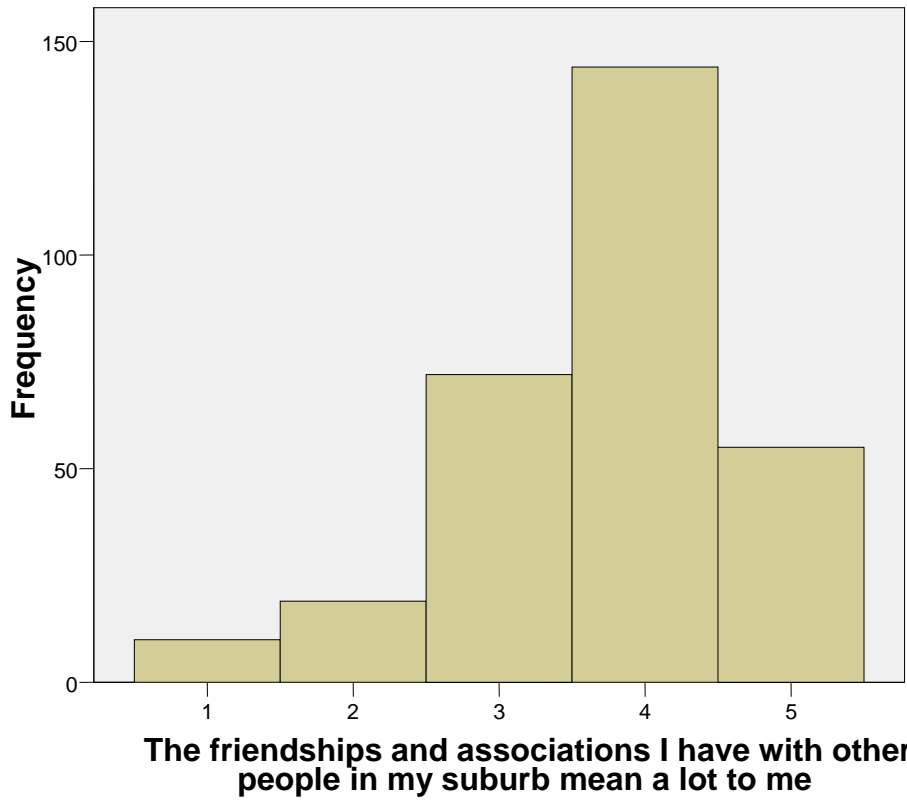
Mean =3.89
Std. Dev. =0.851
N =300

Histogram



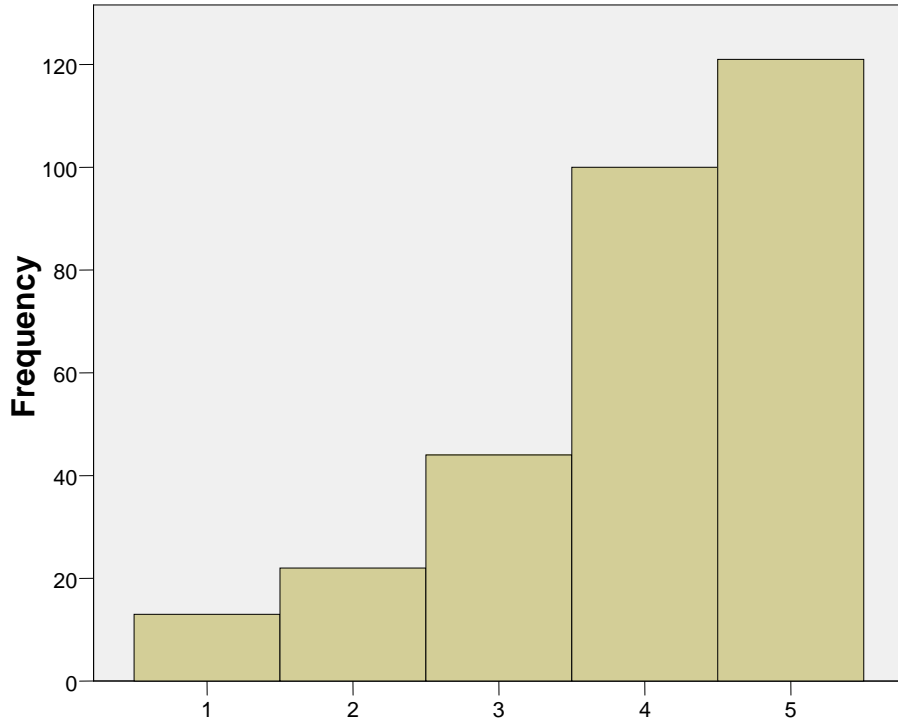
Mean =3.43
Std. Dev. =1.1
N =300

Histogram



Mean =3.72
Std. Dev. =0.948
N =300

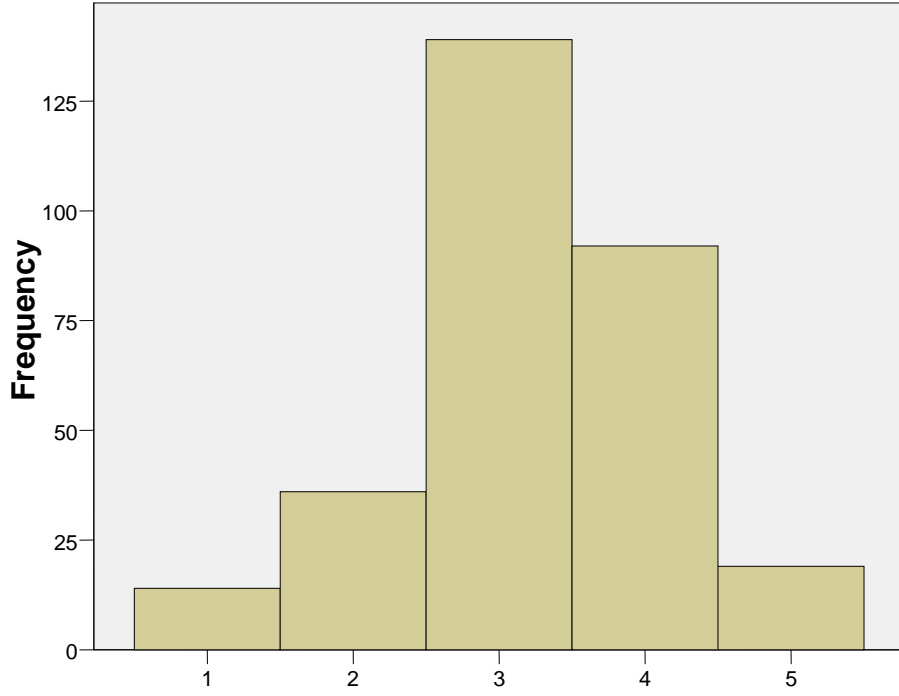
Histogram



Mean =3.98
Std. Dev. =1.112
N =300

Given the opportunity, I would like to move out of this suburb

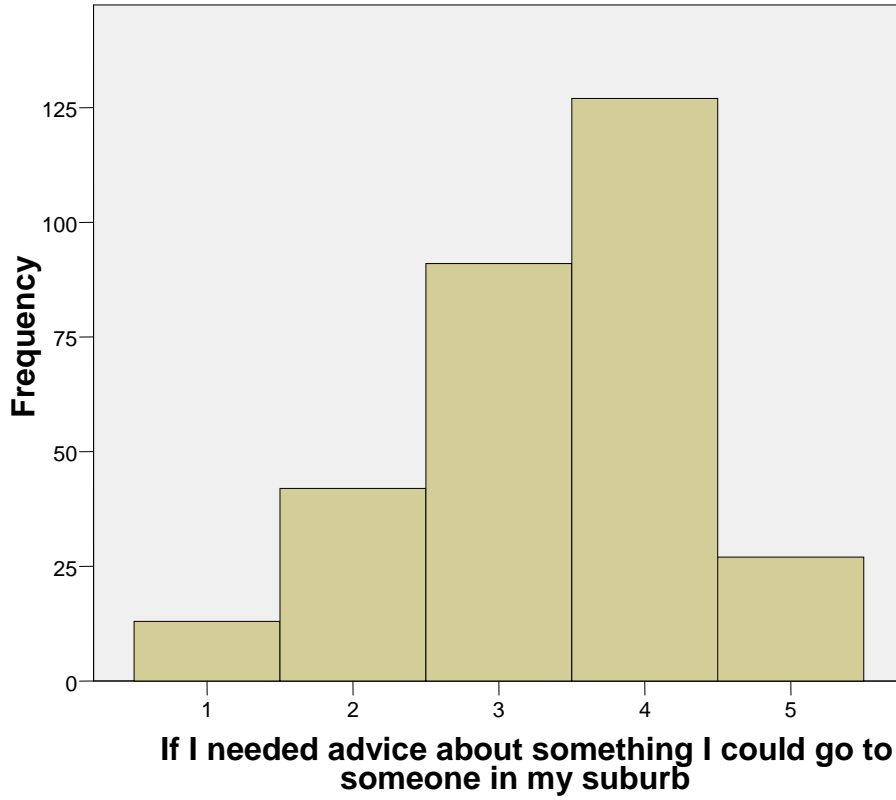
Histogram



Mean =3.22
Std. Dev. =0.906
N =300

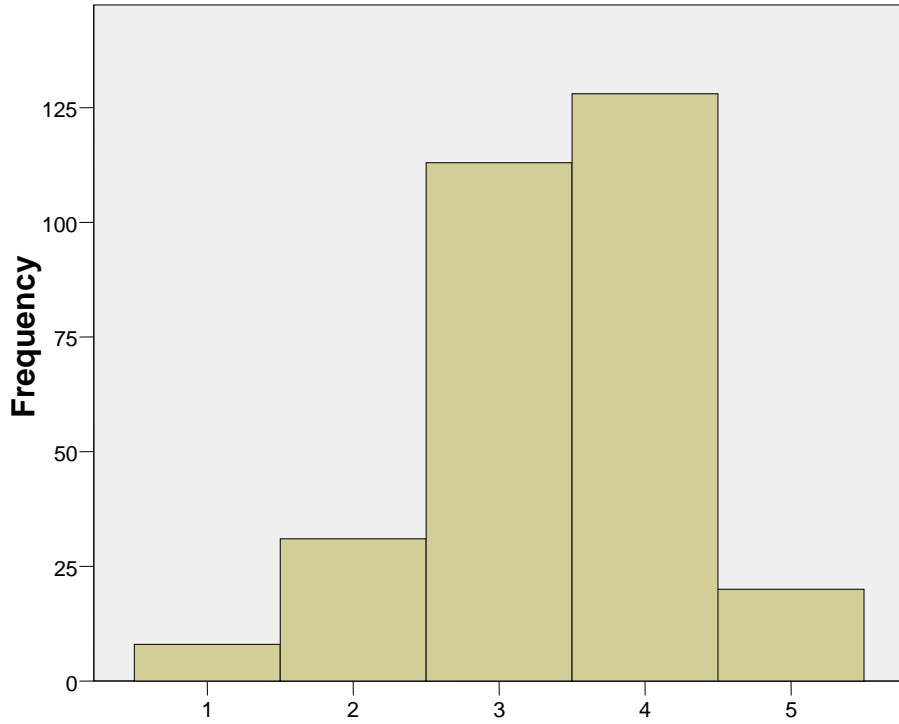
If the people in my suburb were planning something I'd think of it as something "we" were doing rather than "they" were doing

Histogram



Mean =3.38
Std. Dev. =0.979
N =300

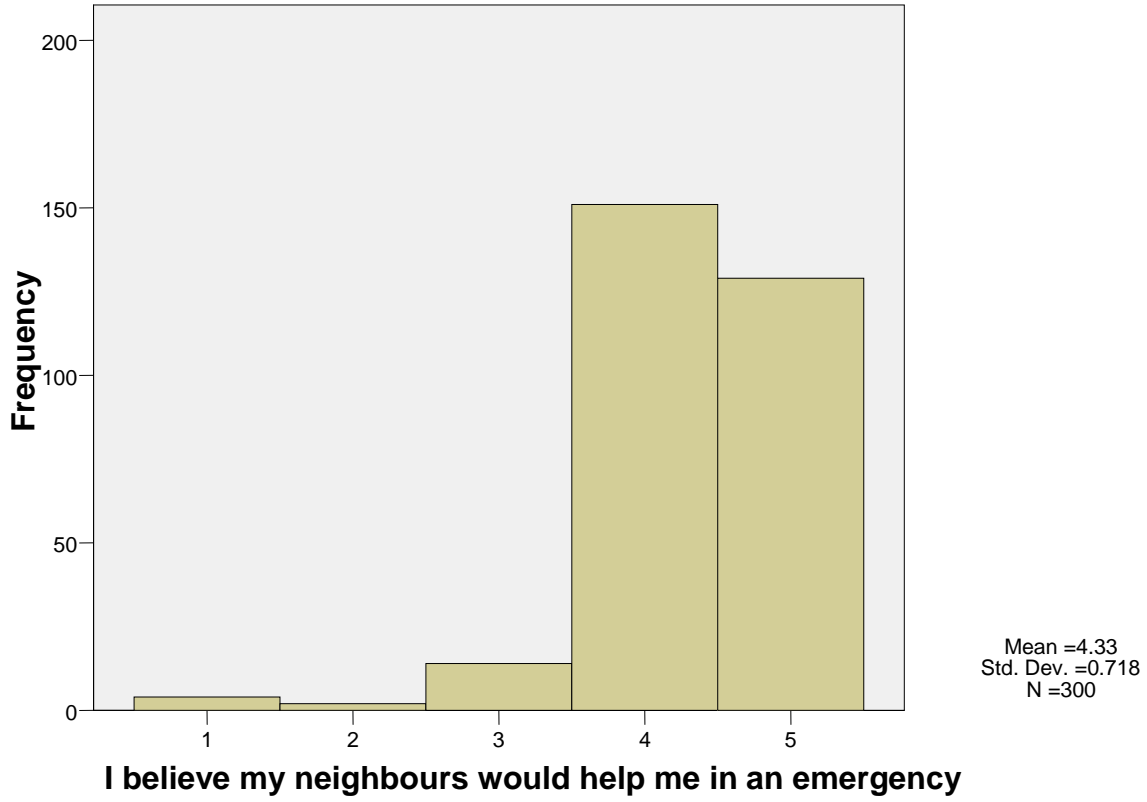
Histogram



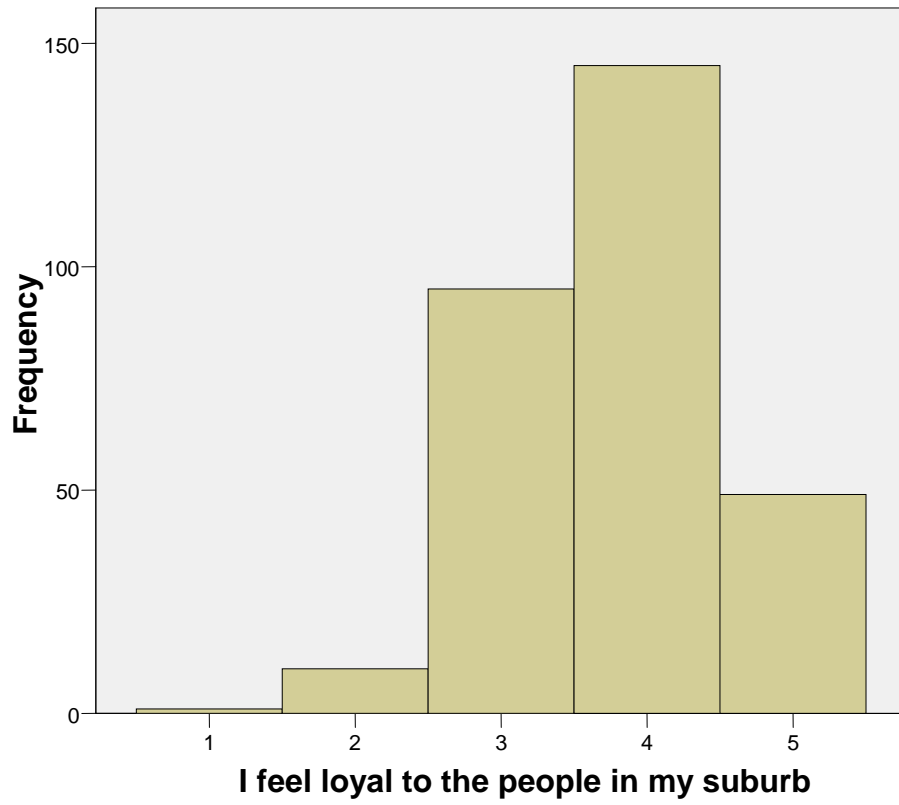
Mean =3.4
Std. Dev. =0.862
N =300

I think I agree with most people in my suburb about what is important in life

Histogram

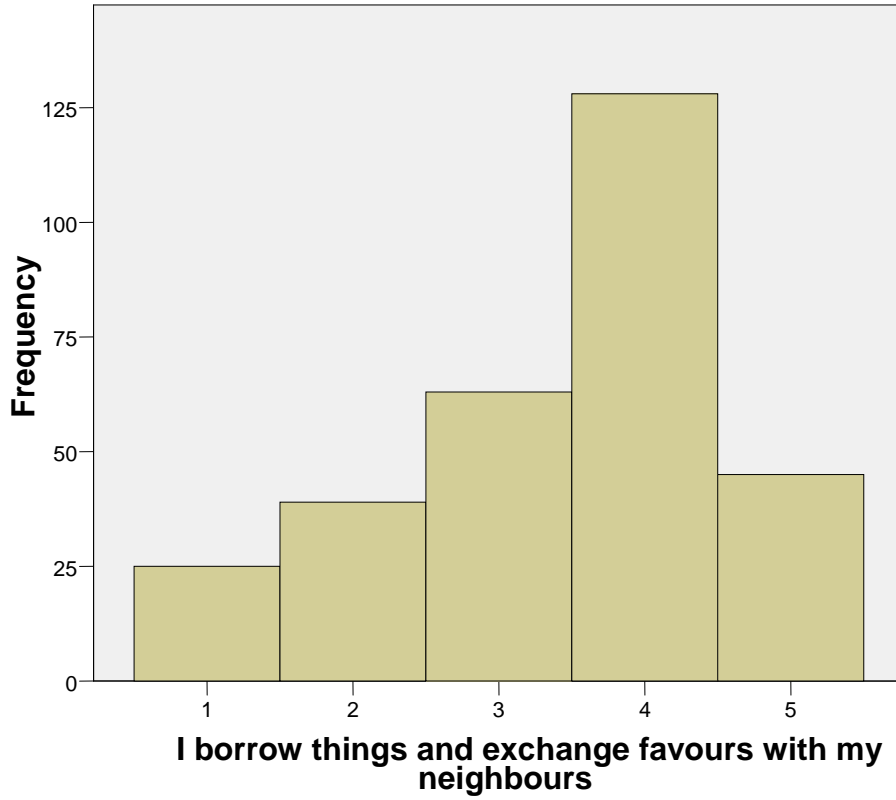


Histogram



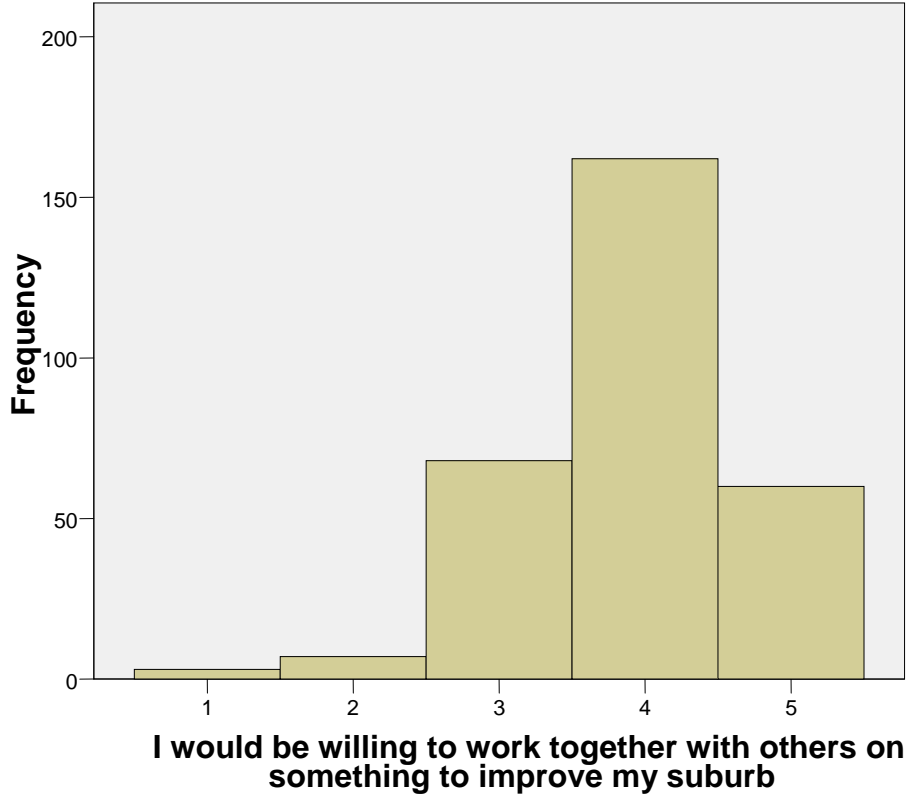
Mean =3.77
Std. Dev. =0.77
N =300

Histogram



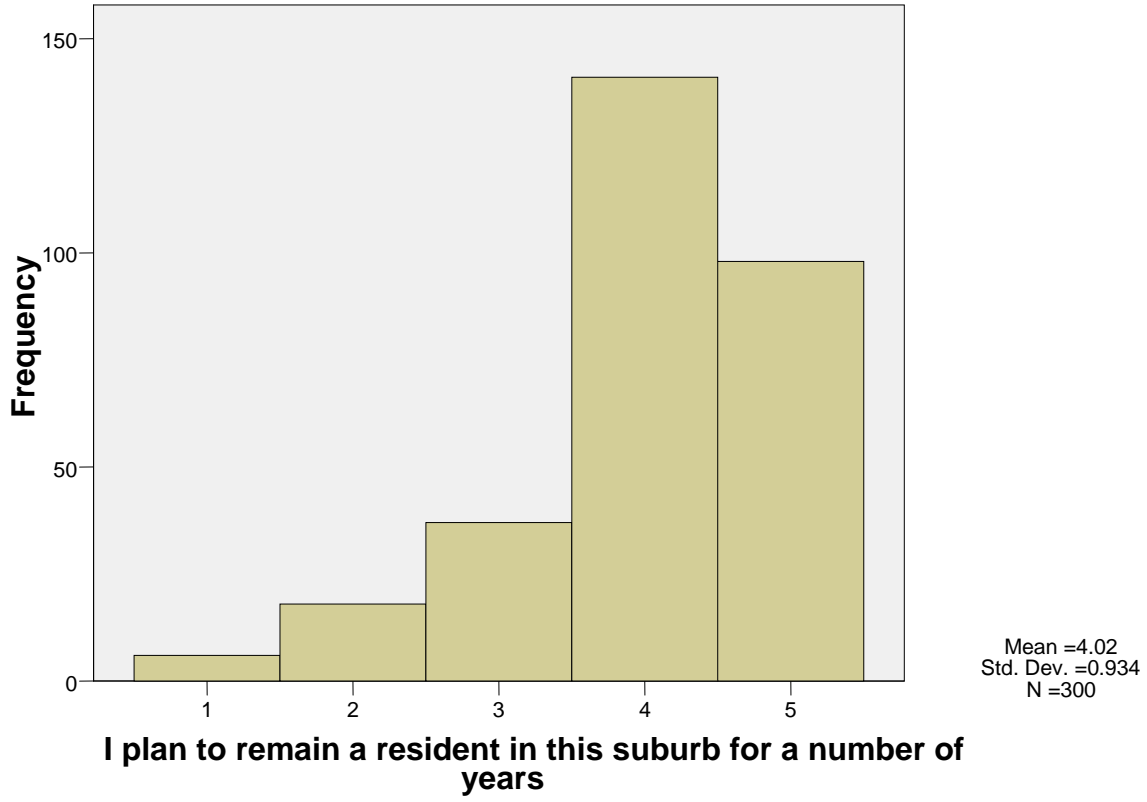
Mean =3.43
Std. Dev. =1.144
N =300

Histogram

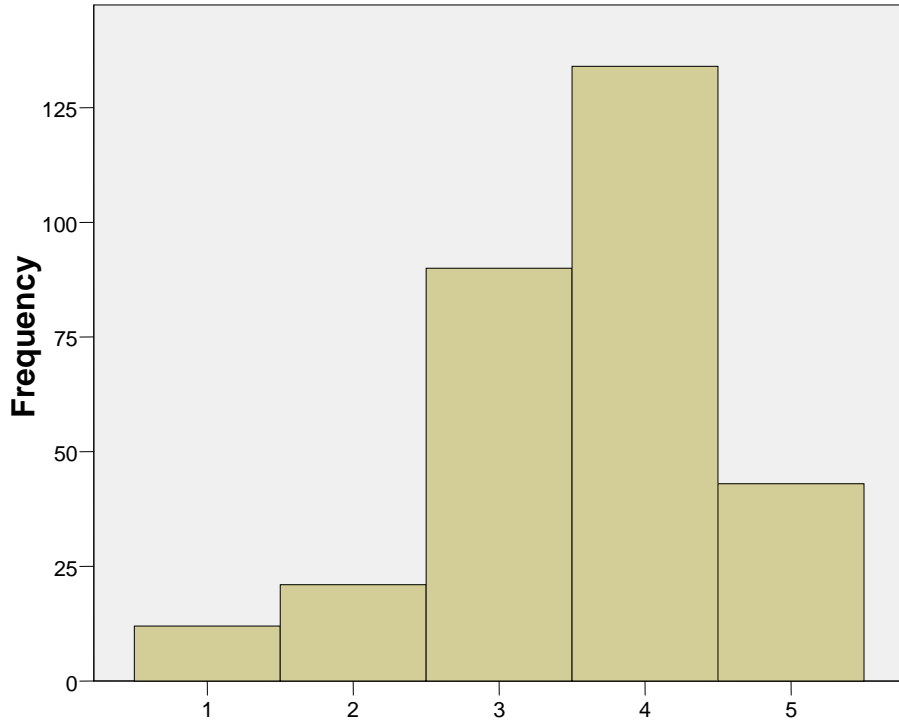


Mean =3.9
Std. Dev. =0.775
N =300

Histogram



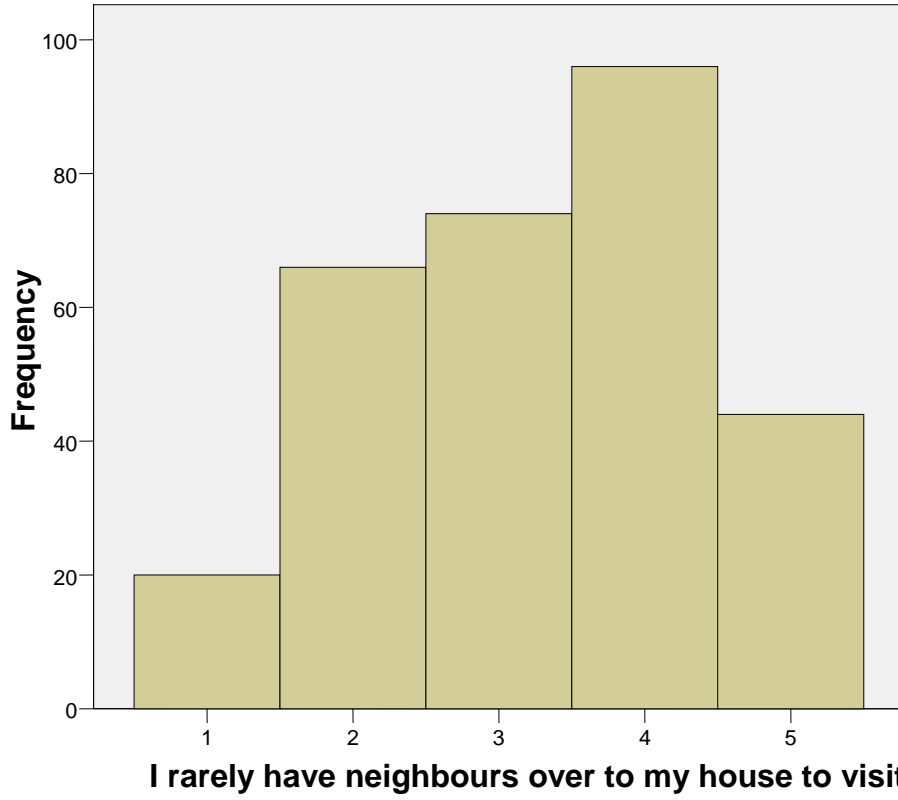
Histogram



Mean =3.58
Std. Dev. =0.955
N =300

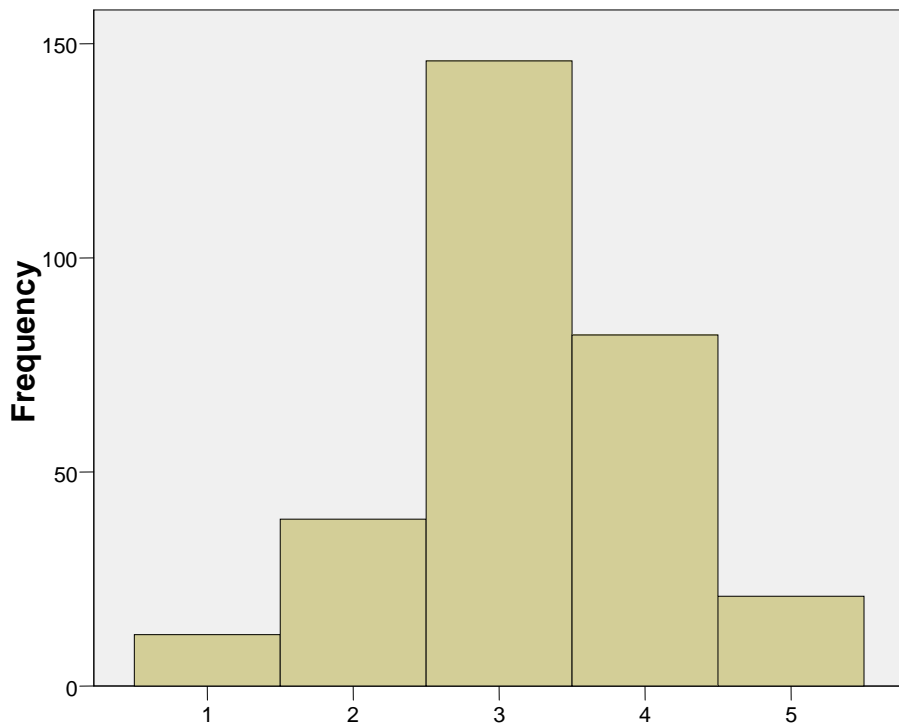
I like to think of myself as similar to the people who live in this suburb

Histogram



Mean =3.26
Std. Dev. =1.153
N =300

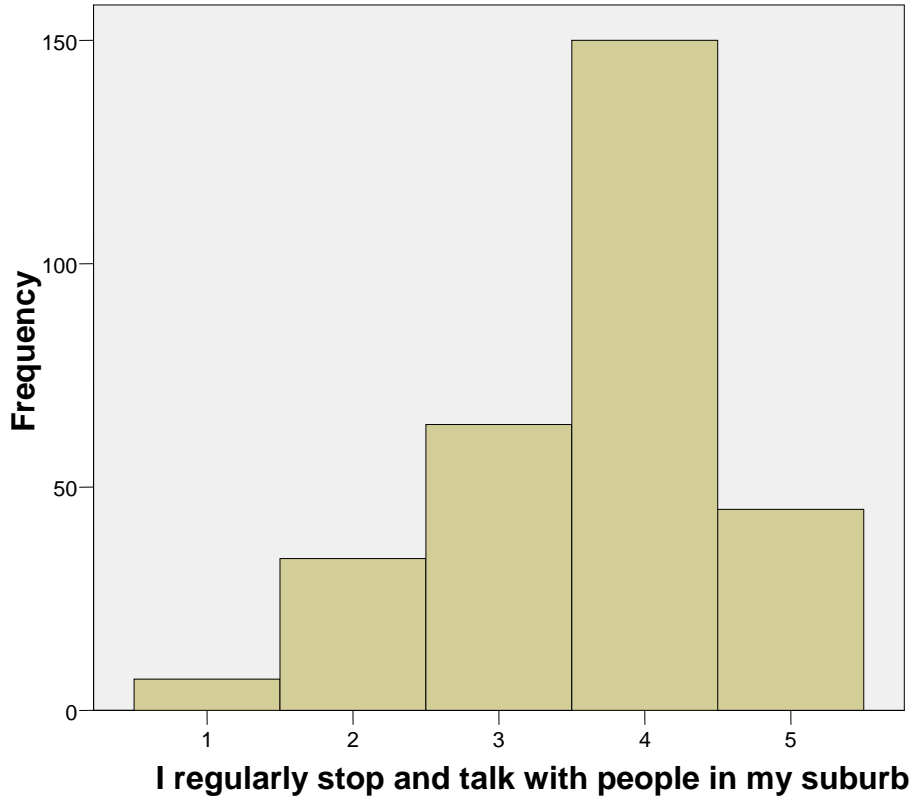
Histogram



Mean =3.2
Std. Dev. =0.897
N =300

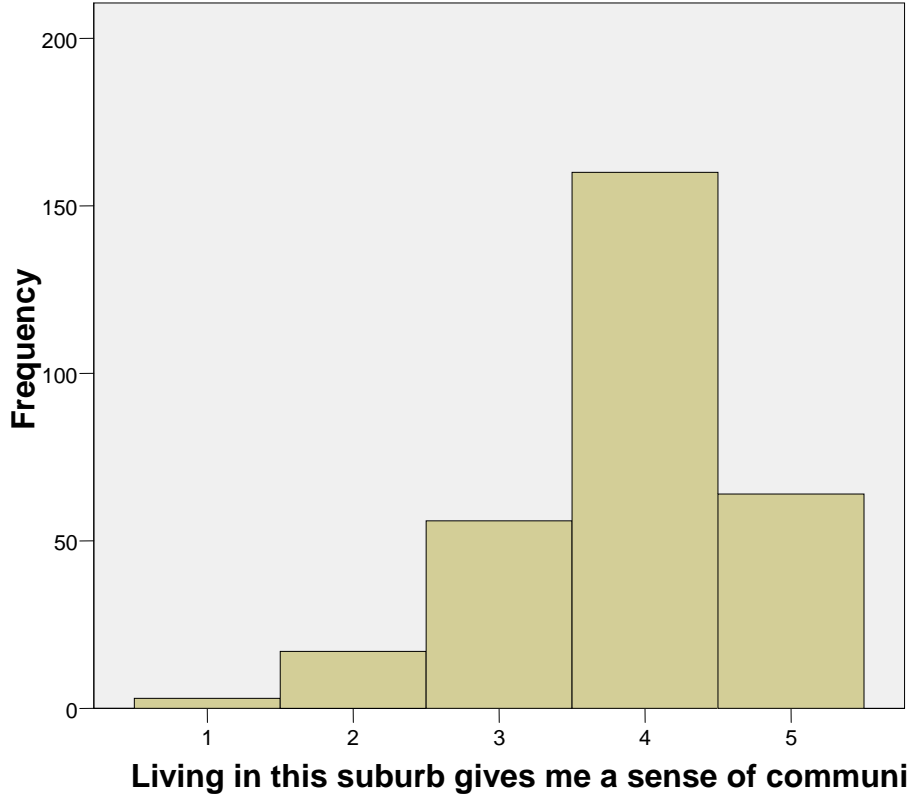
A feeling of fellowship runs deep between me and other people in this suburb

Histogram



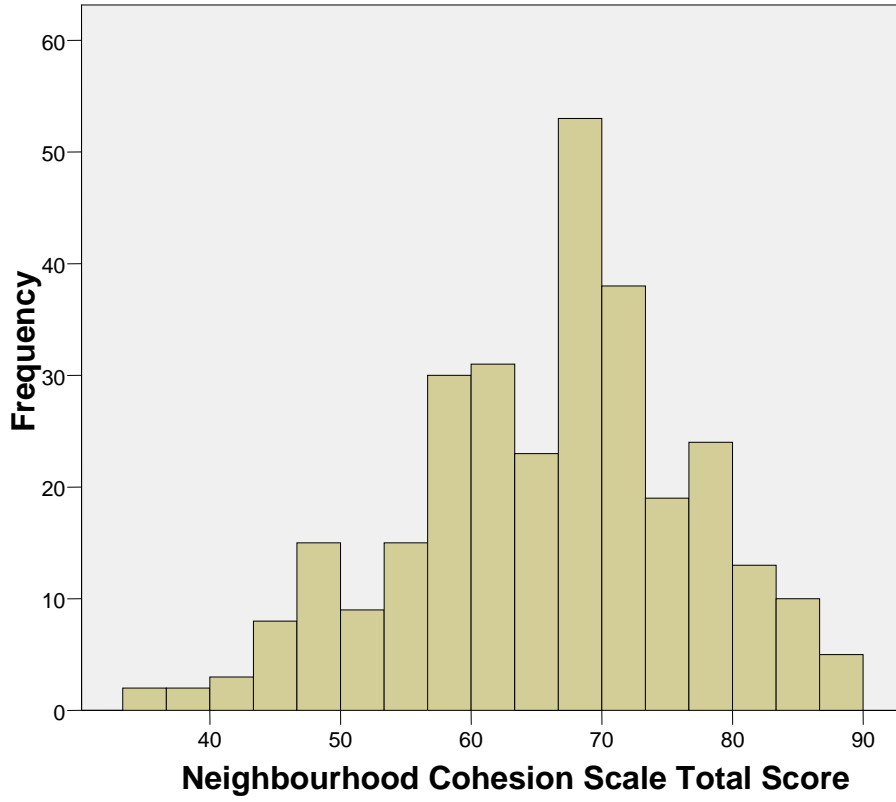
Mean =3.64
Std. Dev. =0.949
N =300

Histogram



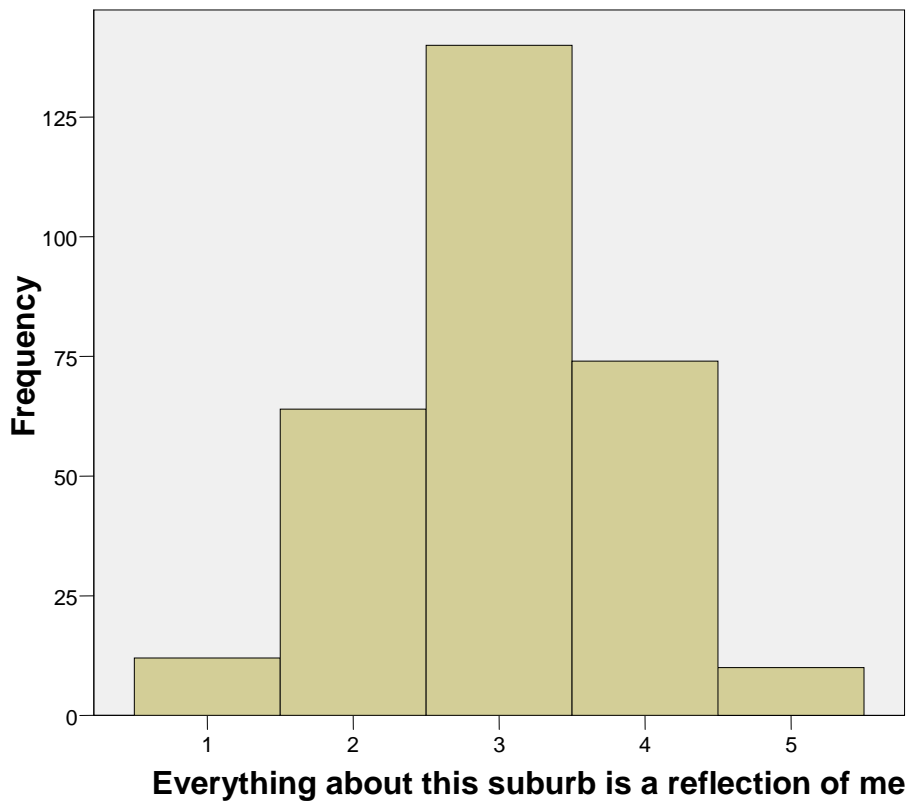
Mean =3.88
Std. Dev. =0.84
N =300

Histogram



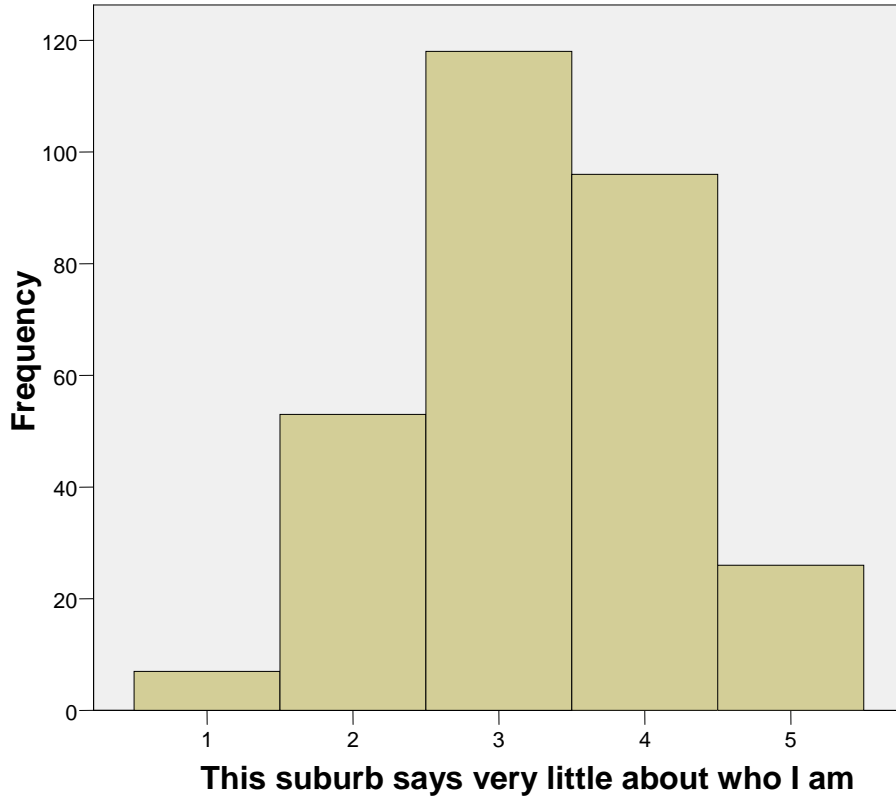
Mean =66.21
Std. Dev. =10.927
N =300

Histogram



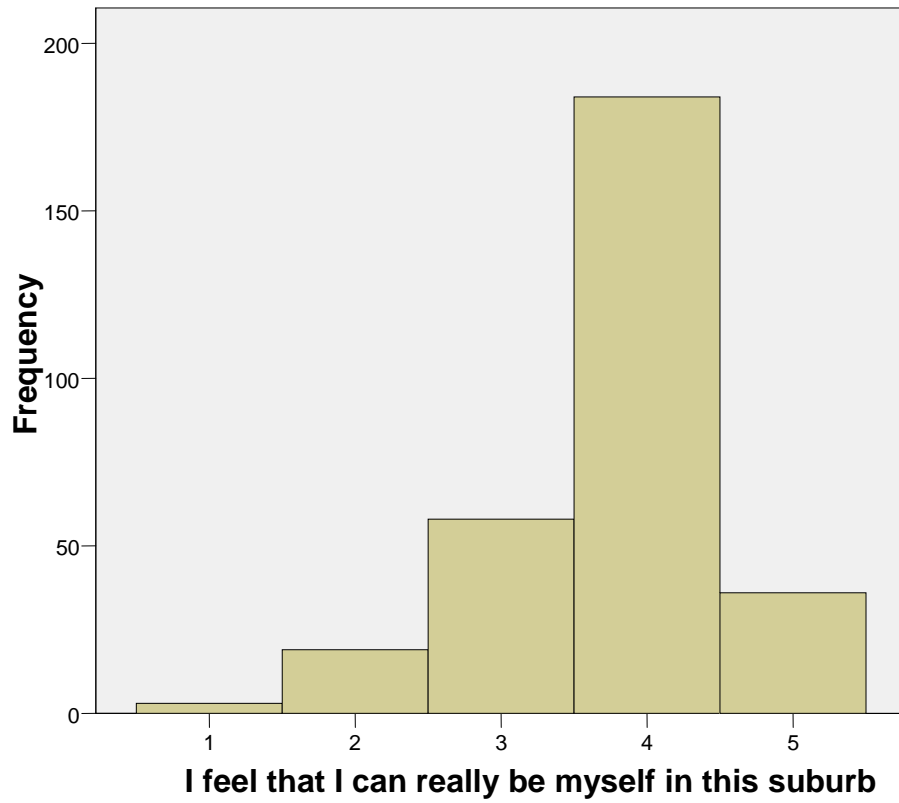
Mean =3.02
Std. Dev. =0.869
N =300

Histogram



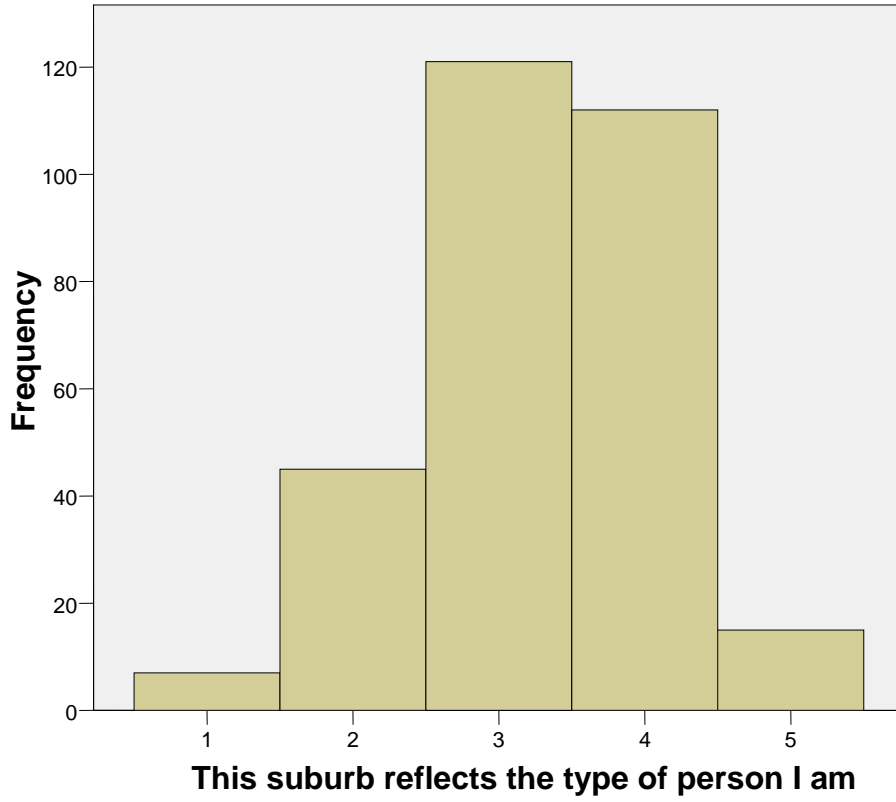
Mean =3.27
Std. Dev. =0.931
N =300

Histogram



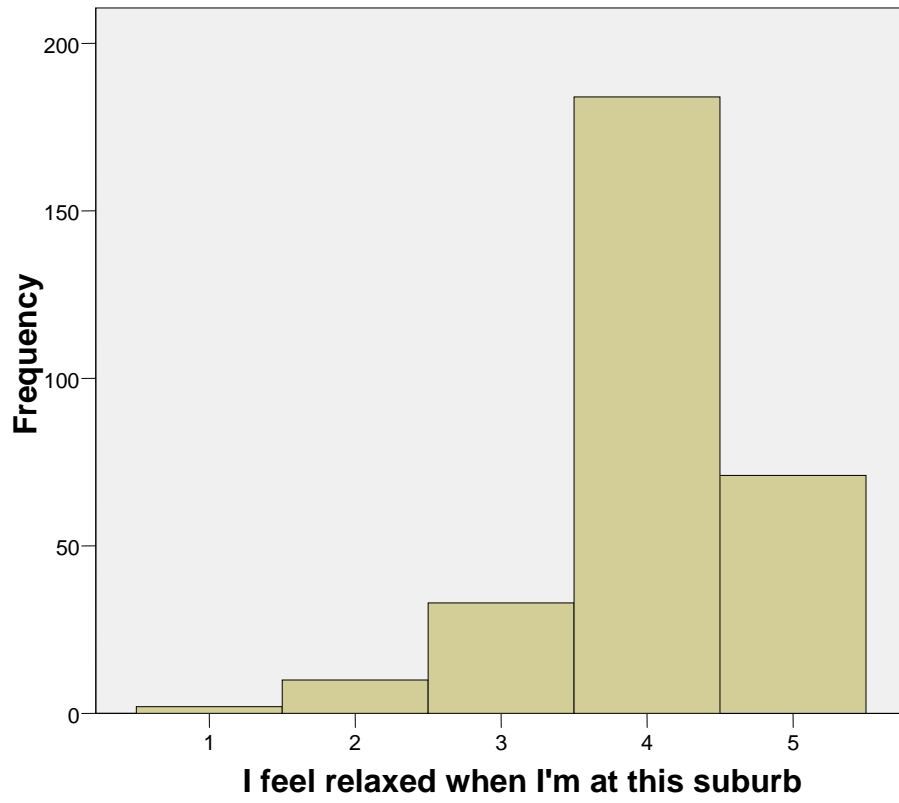
Mean =3.77
Std. Dev. =0.778
N =300

Histogram



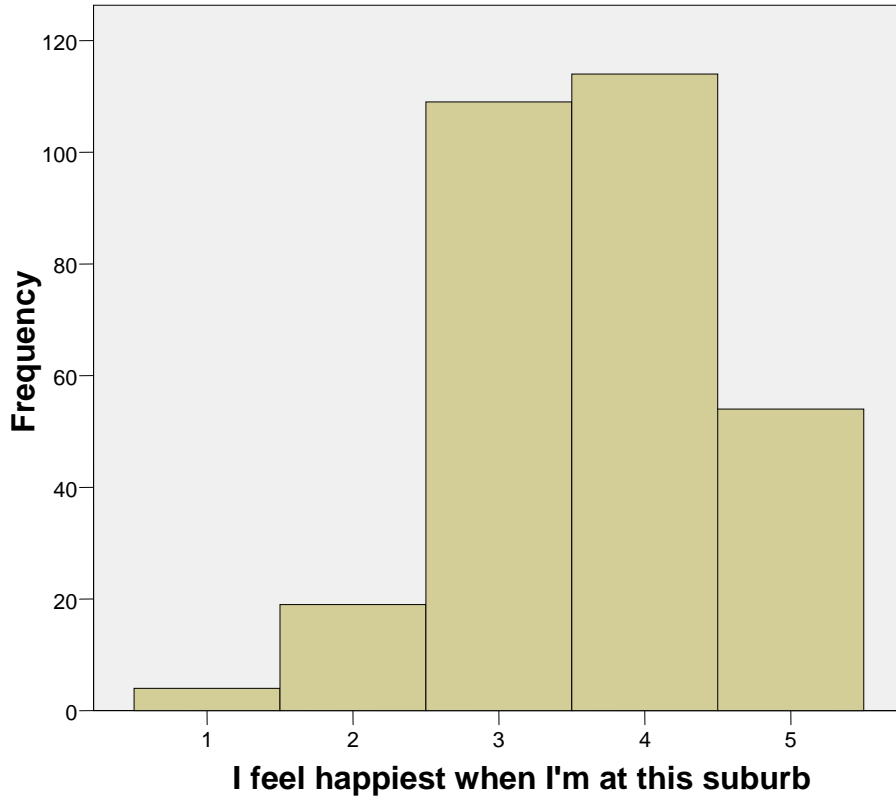
Mean =3.28
Std. Dev. =0.862
N =300

Histogram



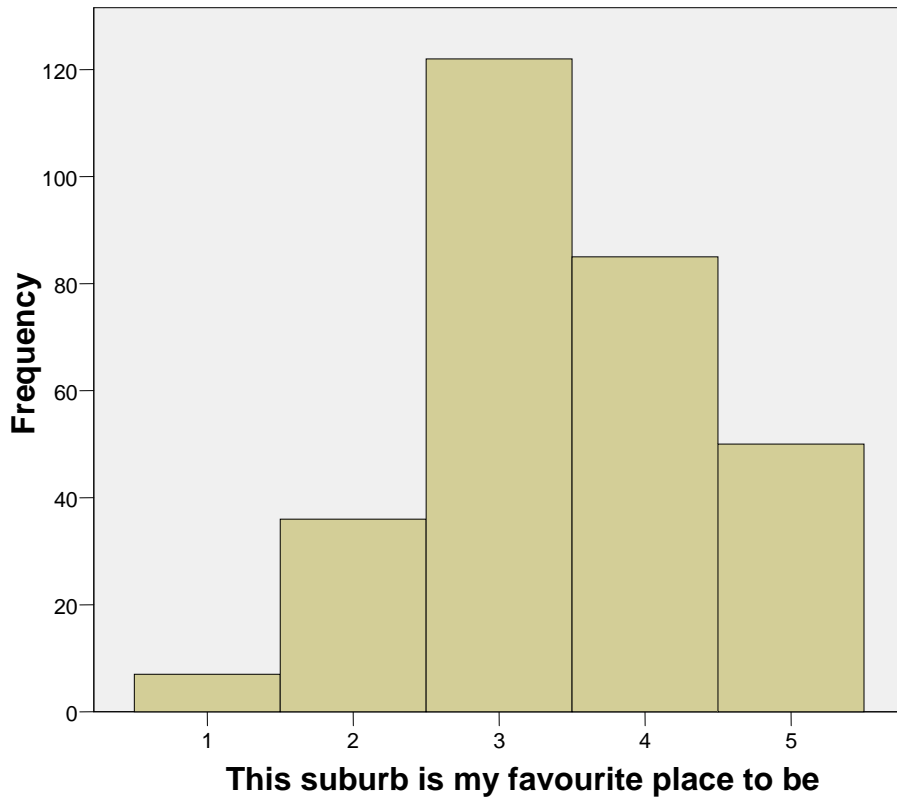
Mean =4.04
Std. Dev. =0.735
N =300

Histogram



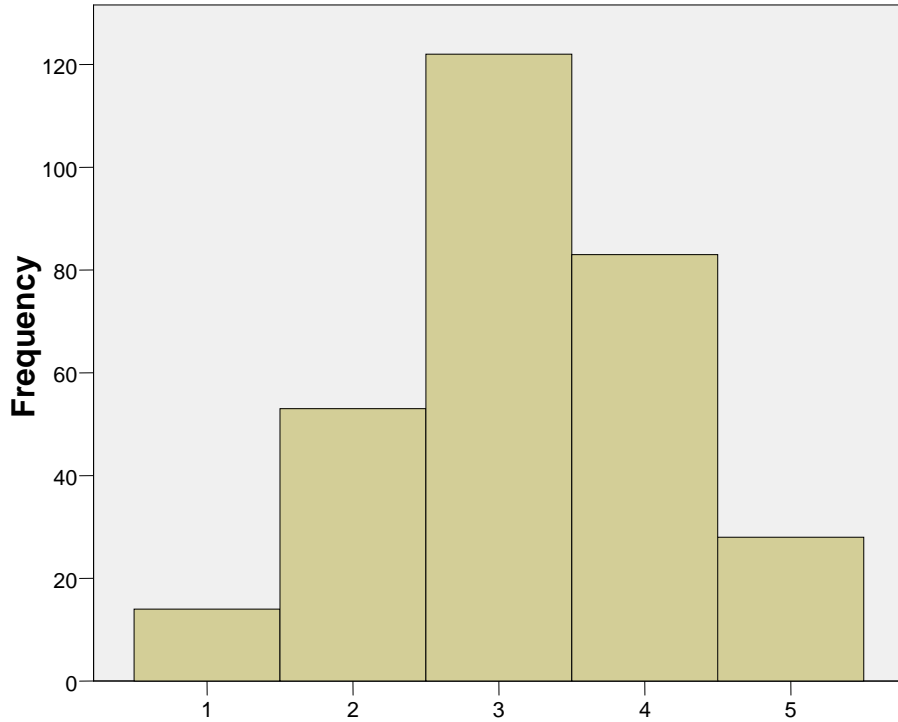
Mean =3.65
Std. Dev. =0.893
N =300

Histogram



Mean =3.45
Std. Dev. =0.982
N =300

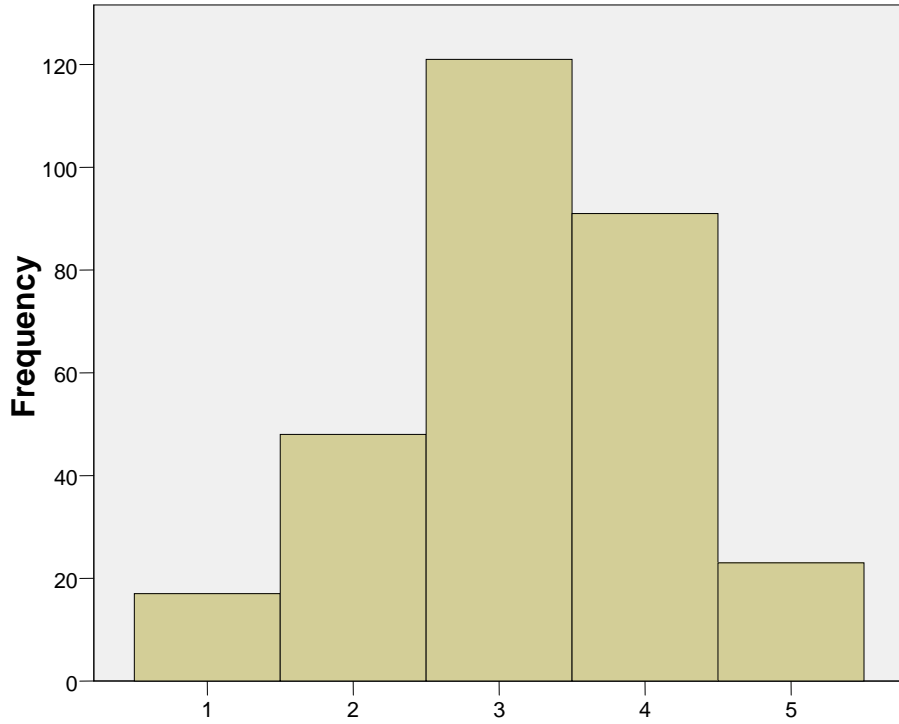
Histogram



Mean =3.19
Std. Dev. =0.99
N =300

I really miss this suburb when I'm away from it for too long

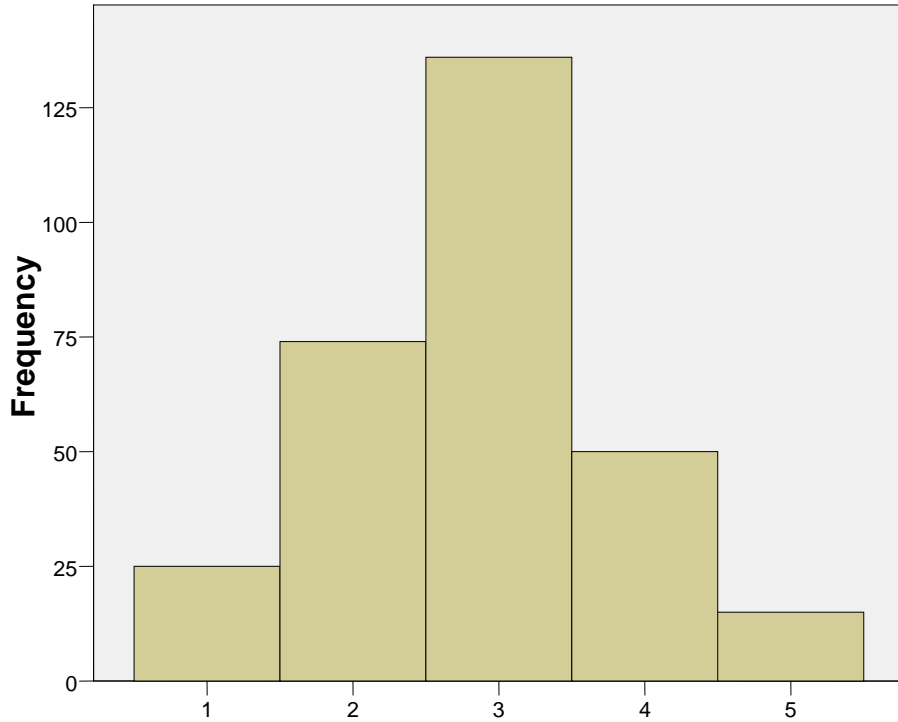
Histogram



Mean =3.18
Std. Dev. =0.983
N =300

This suburb is the best place for doing the things I enjoy the most

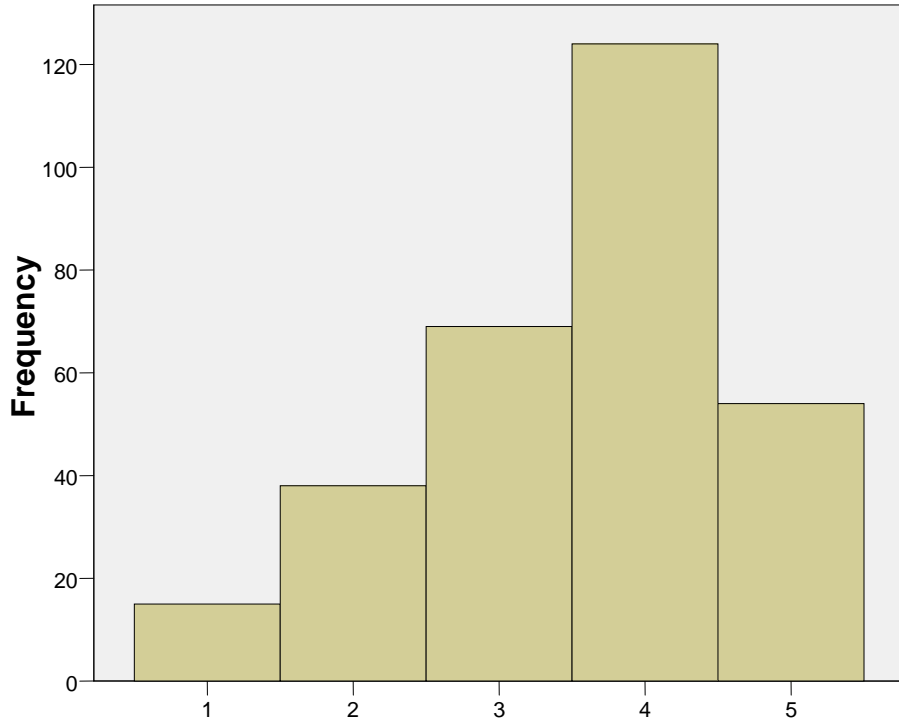
Histogram



Mean =2.85
Std. Dev. =0.963
N =300

**For doing the things that I enjoy the most, no other place
can compare to this suburb**

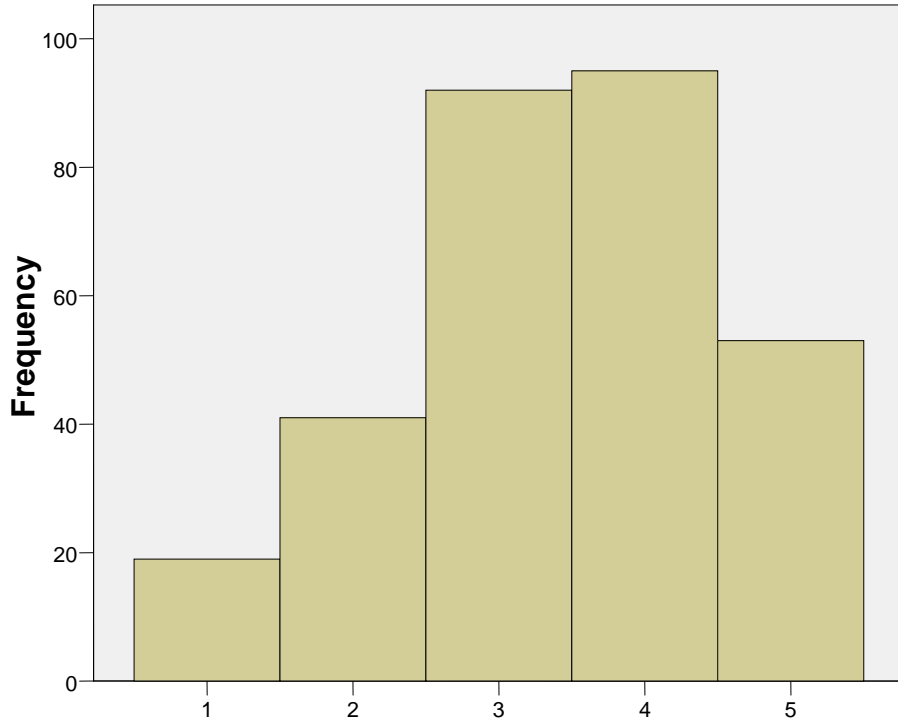
Histogram



Mean =3.55
Std. Dev. =1.079
N =300

This suburb is not a good place to do the things I most like to do

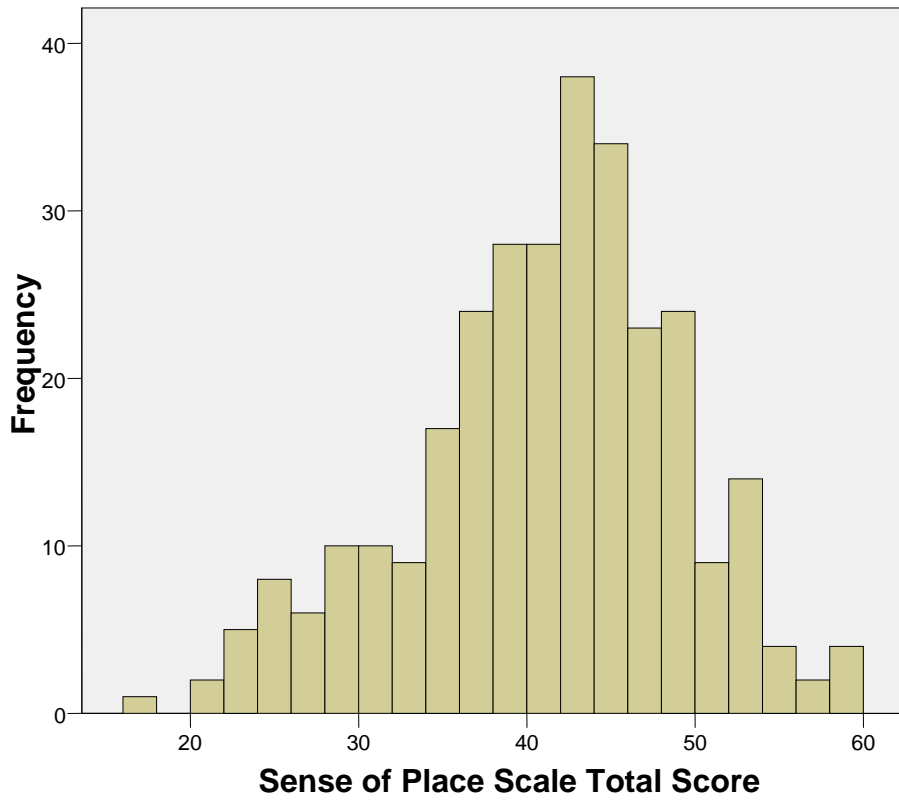
Histogram



Mean =3.41
Std. Dev. =1.119
N =300

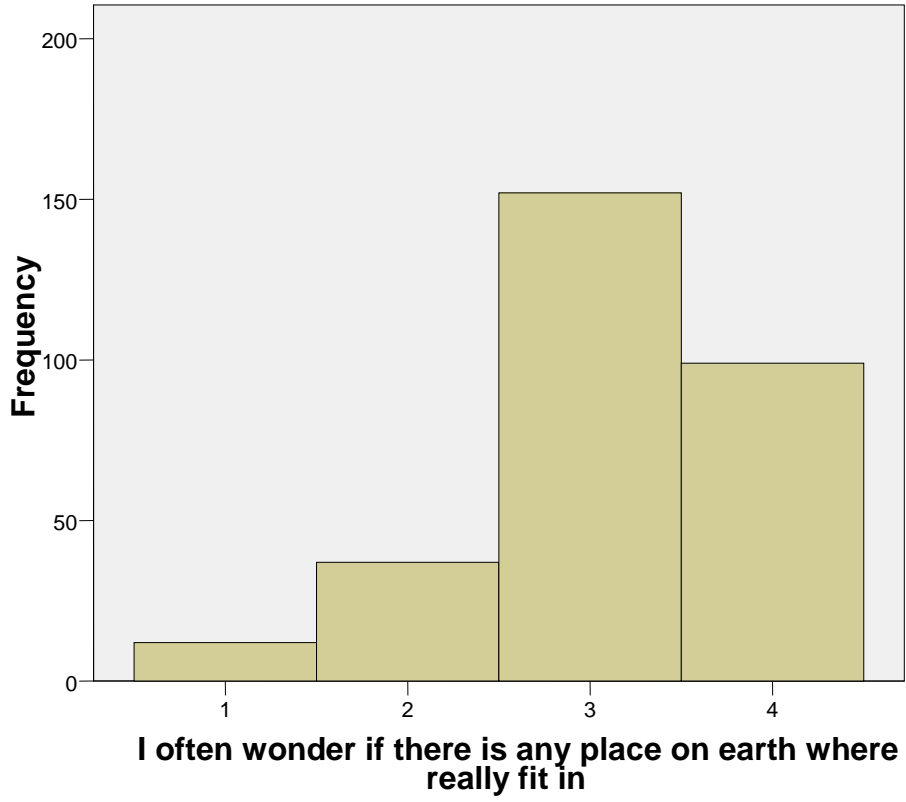
As far as I am concerned, there are better places to be than this suburb

Histogram



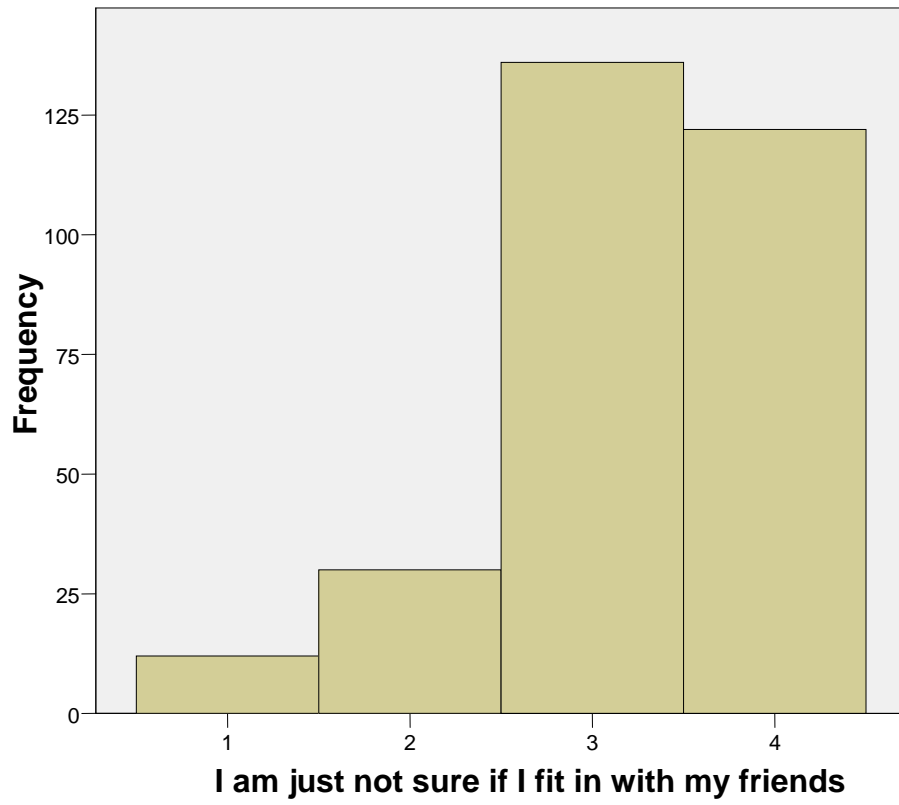
Mean =40.66
Std. Dev. =7.945
N =300

Histogram



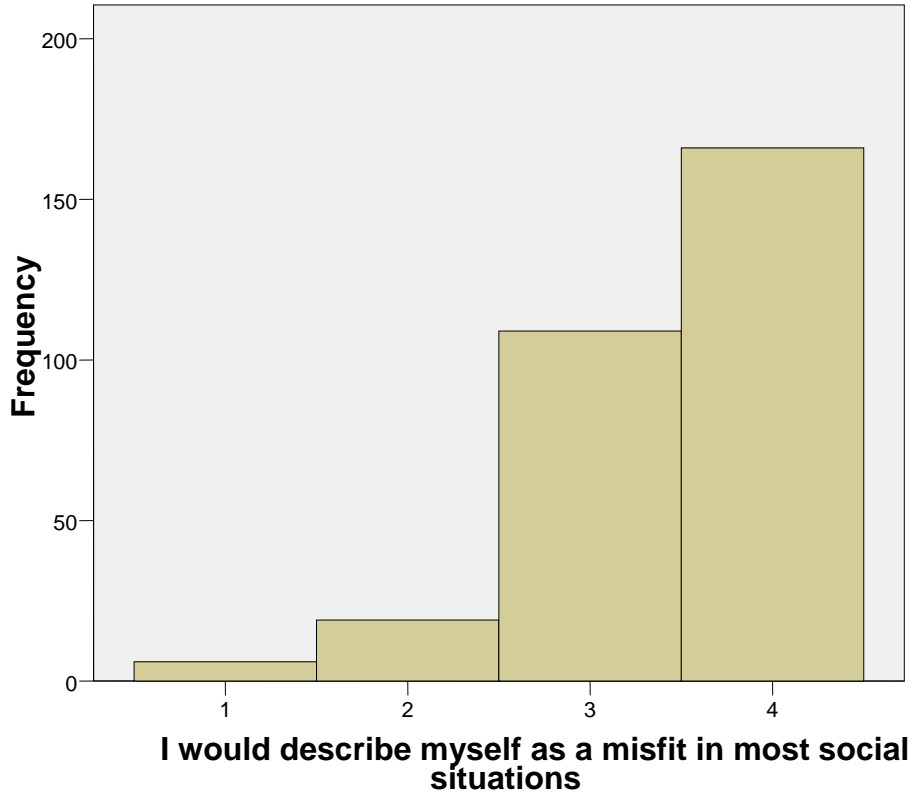
Mean =3.13
Std. Dev. =0.774
N =300

Histogram



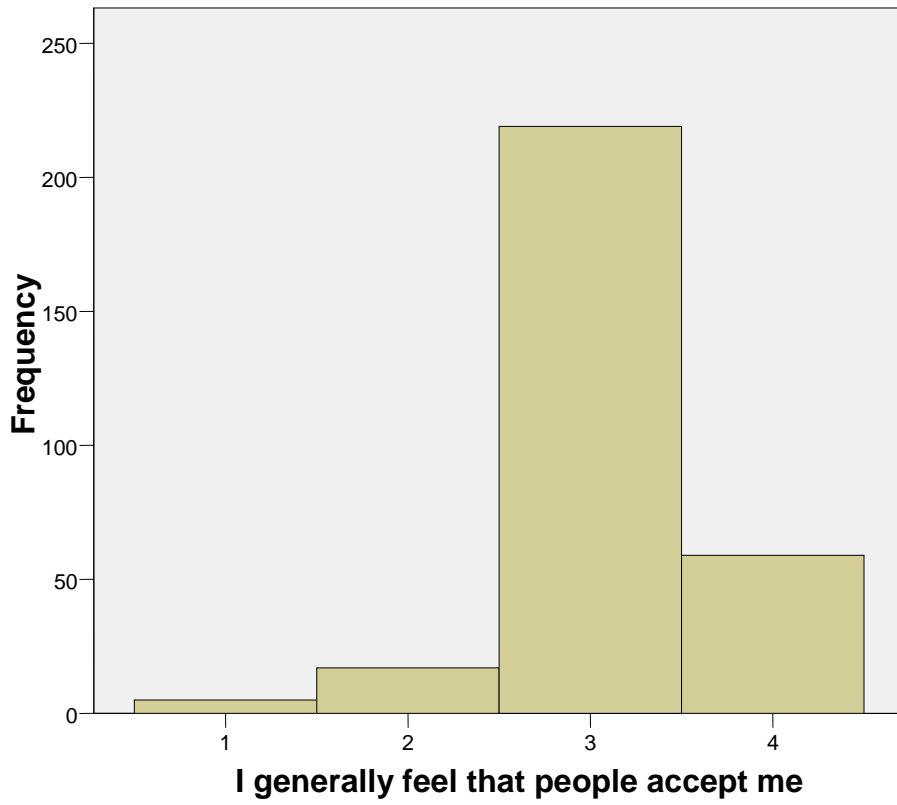
Mean =3.23
Std. Dev. =0.786
N =300

Histogram



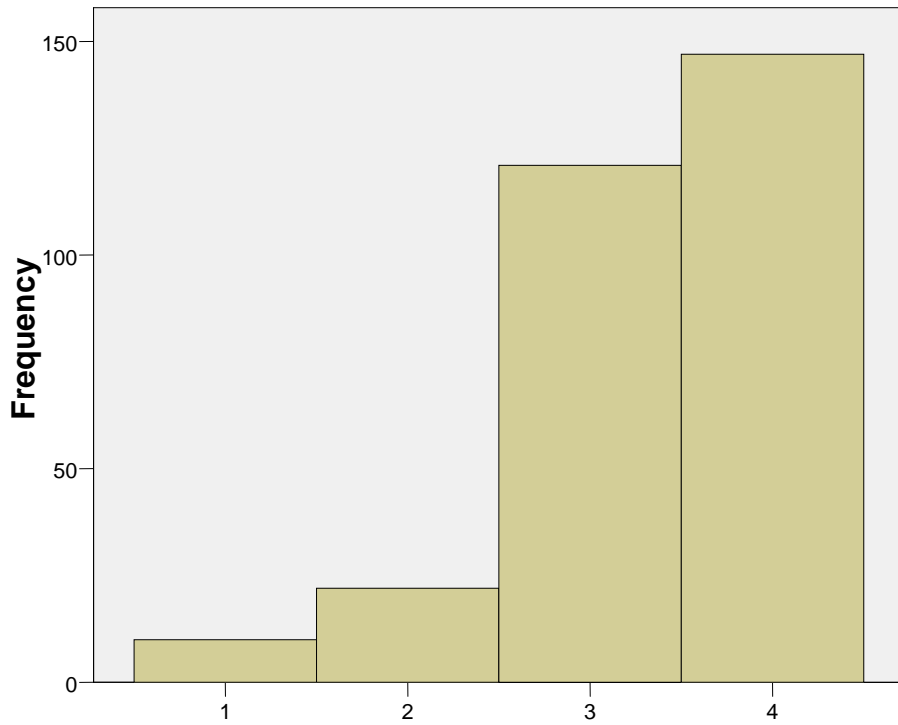
Mean =3.45
Std. Dev. =0.704
N =300

Histogram



Mean =3.11
Std. Dev. =0.556
N =300

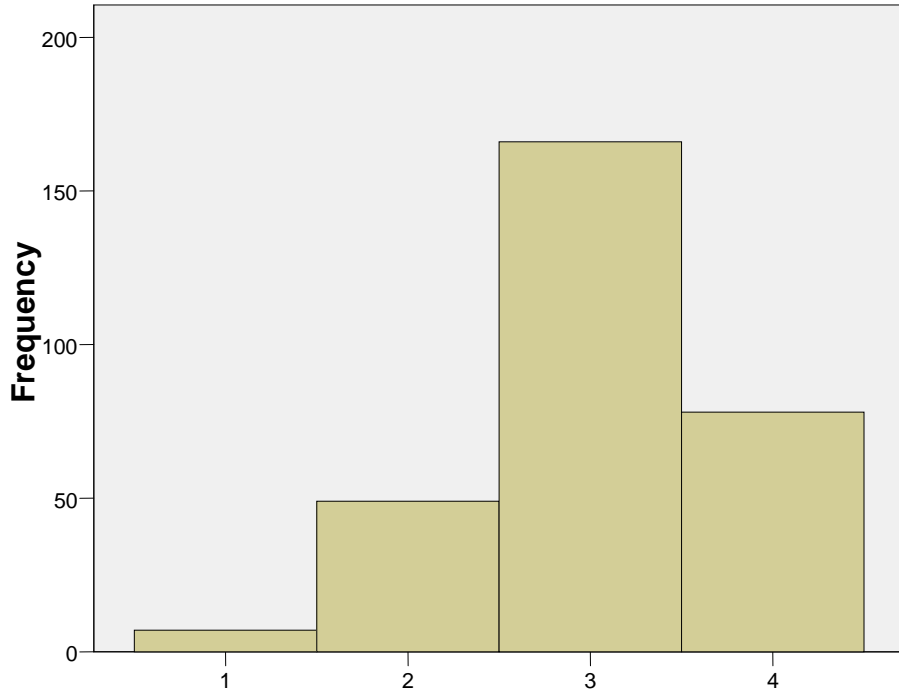
Histogram



Mean =3.35
Std. Dev. =0.759
N =300

I feel like a piece of a jigsaw puzzle that doesn't fit in the puzzle

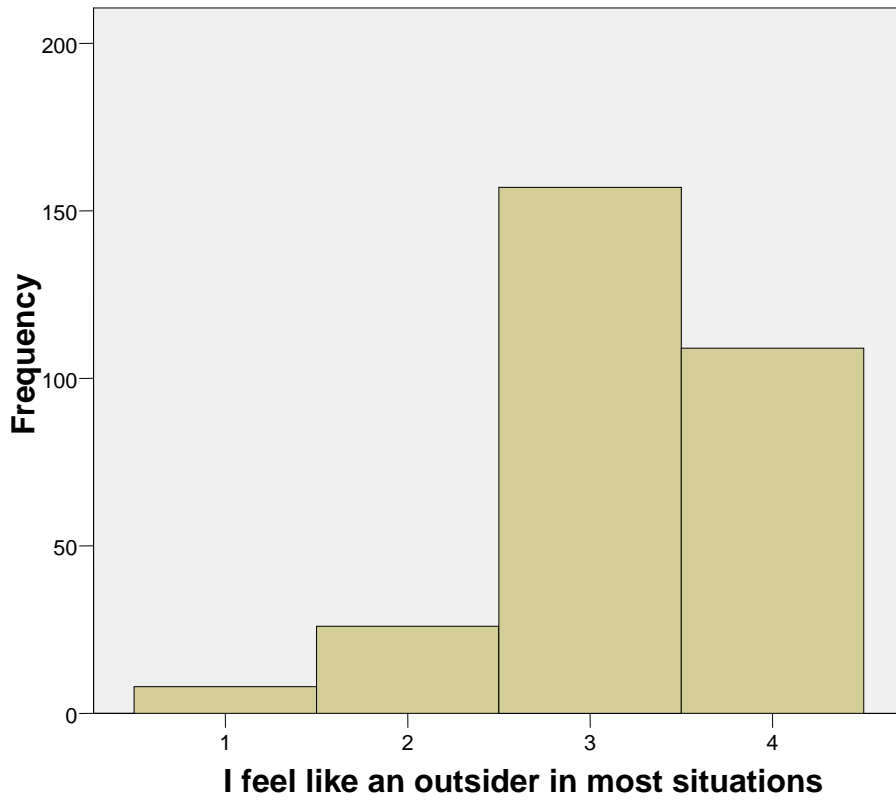
Histogram



Mean =3.05
Std. Dev. =0.718
N =300

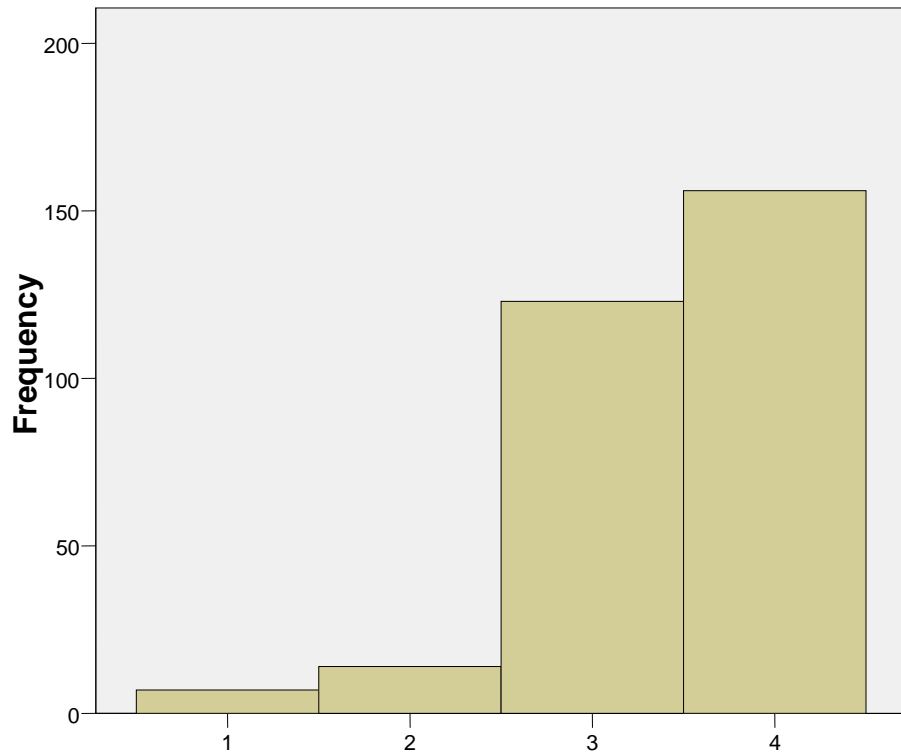
I would like to make a difference to people or things around me, but I don't feel that what I have to offer is valued

Histogram



Mean =3.22
Std. Dev. =0.713
N =300

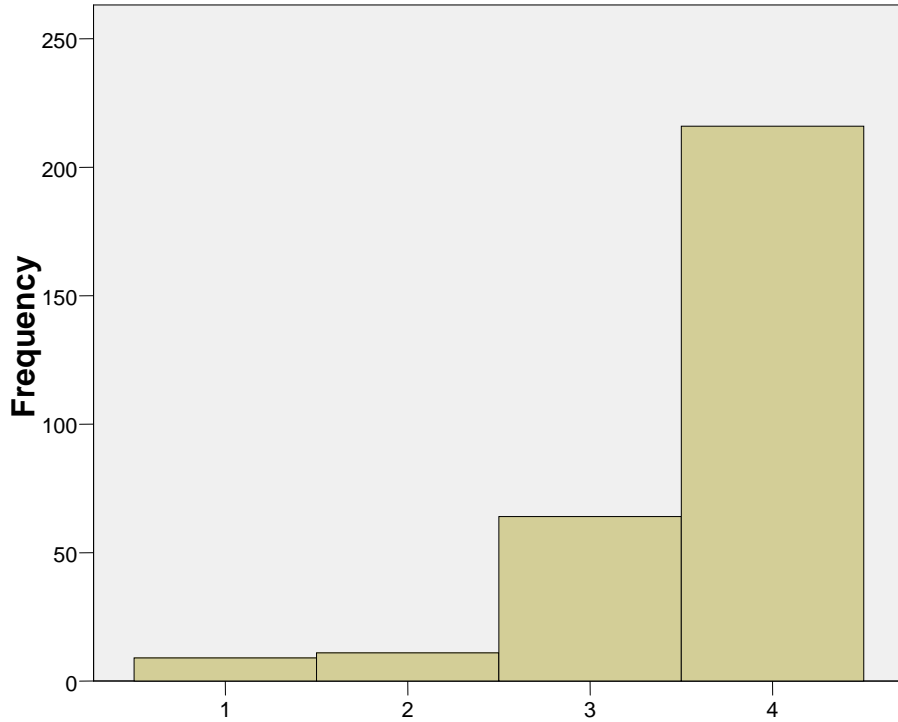
Histogram



Mean =3.43
Std. Dev. =0.692
N =300

I am troubled by feeling like I have no place in the world

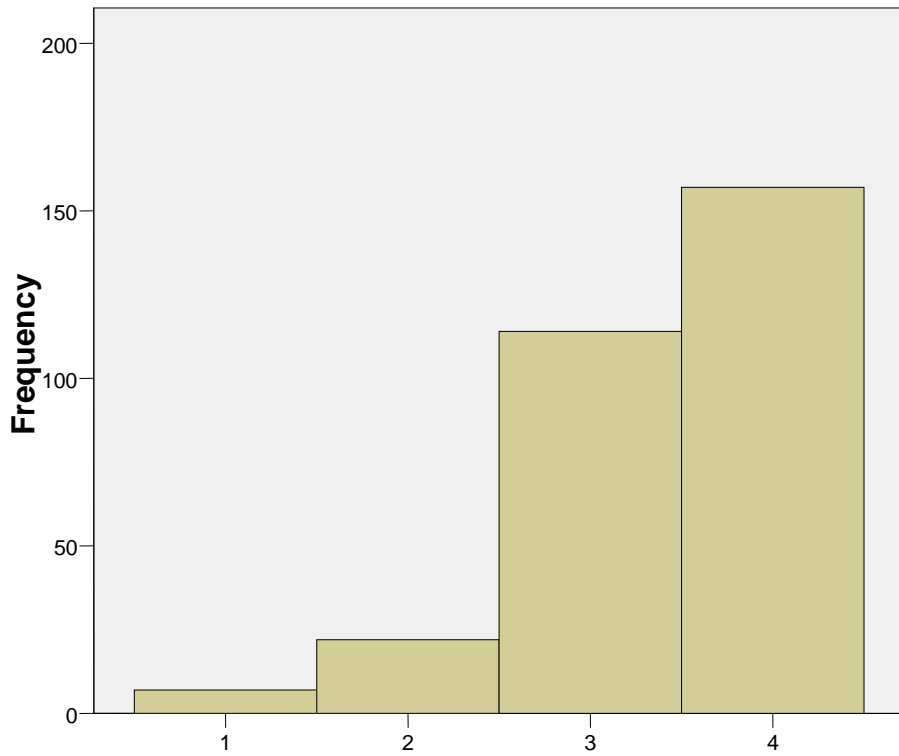
Histogram



Mean =3.62
Std. Dev. =0.7
N =300

I could disappear for days and it wouldn't matter to my family

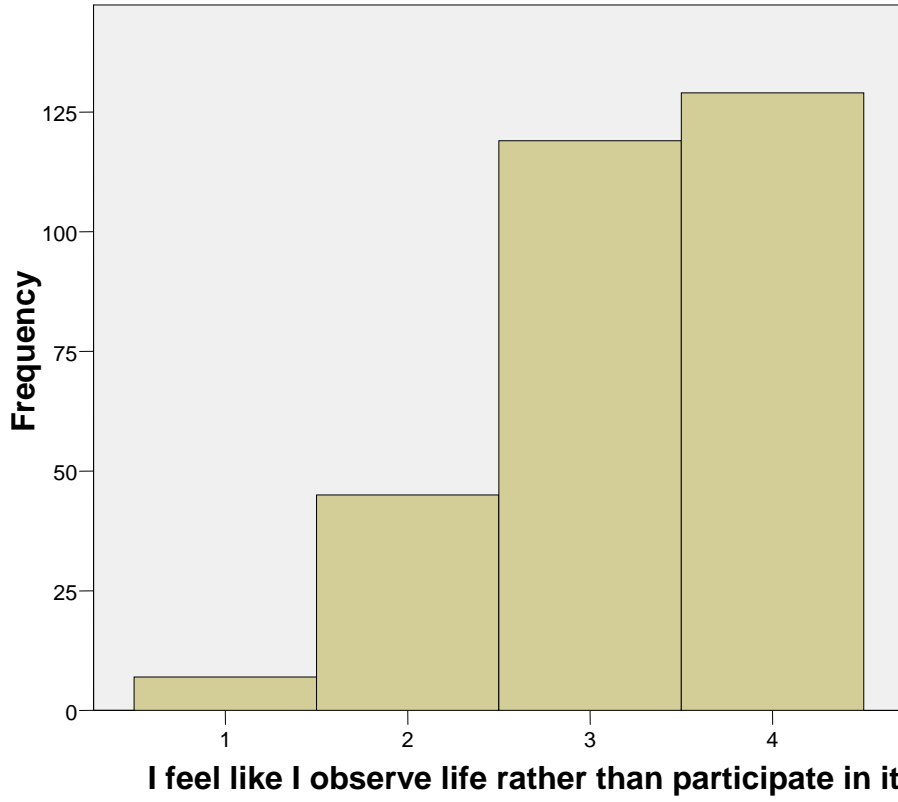
Histogram



Mean =3.4
Std. Dev. =0.727
N =300

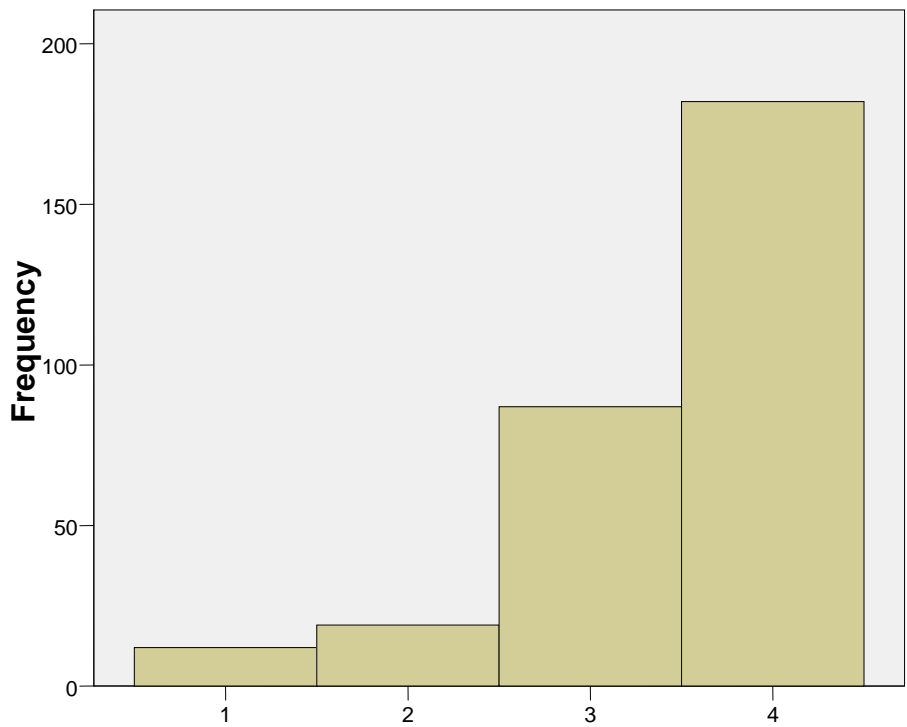
In general, I don't feel a part of the mainstream of society

Histogram



Mean =3.23
Std. Dev. =0.788
N =300

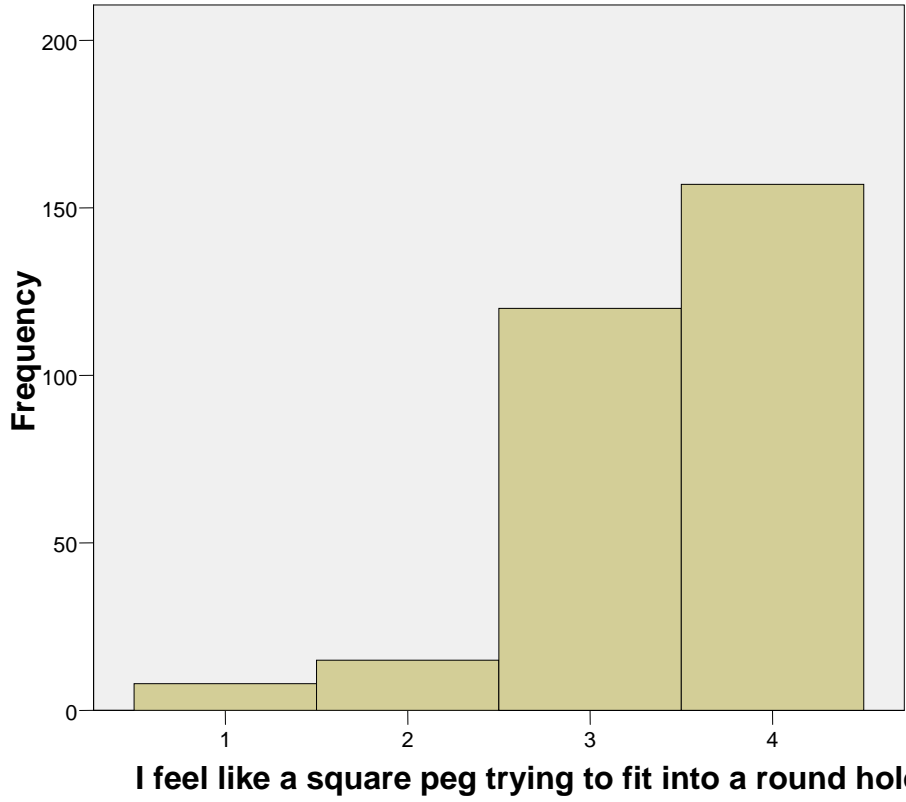
Histogram



Mean =3.46
Std. Dev. =0.786
N =300

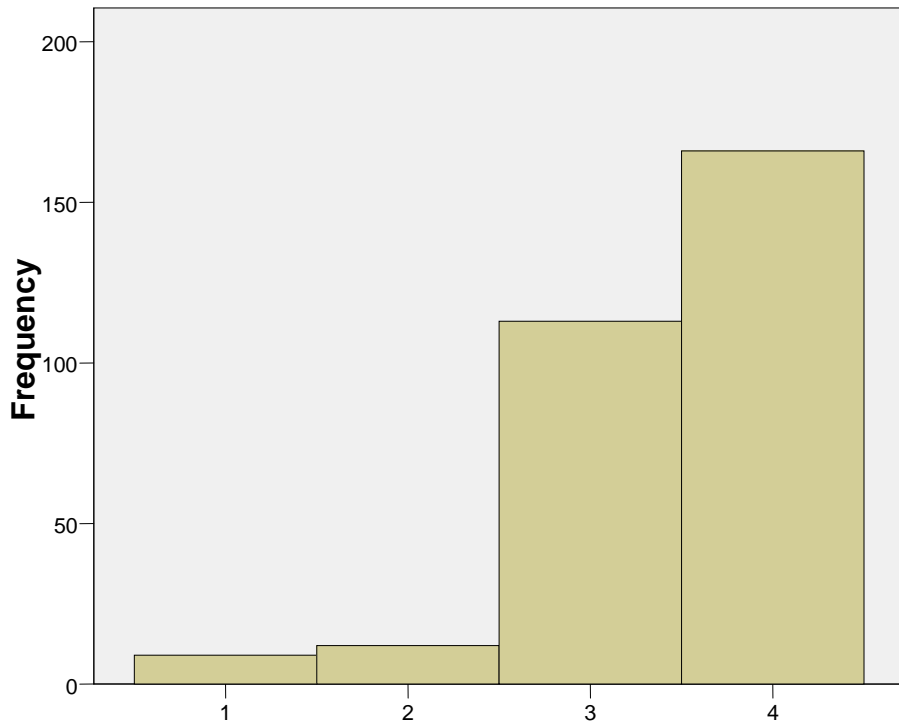
If I died tomorrow, very few people would come to my funeral

Histogram



Mean =3.42
Std. Dev. =0.711
N =300

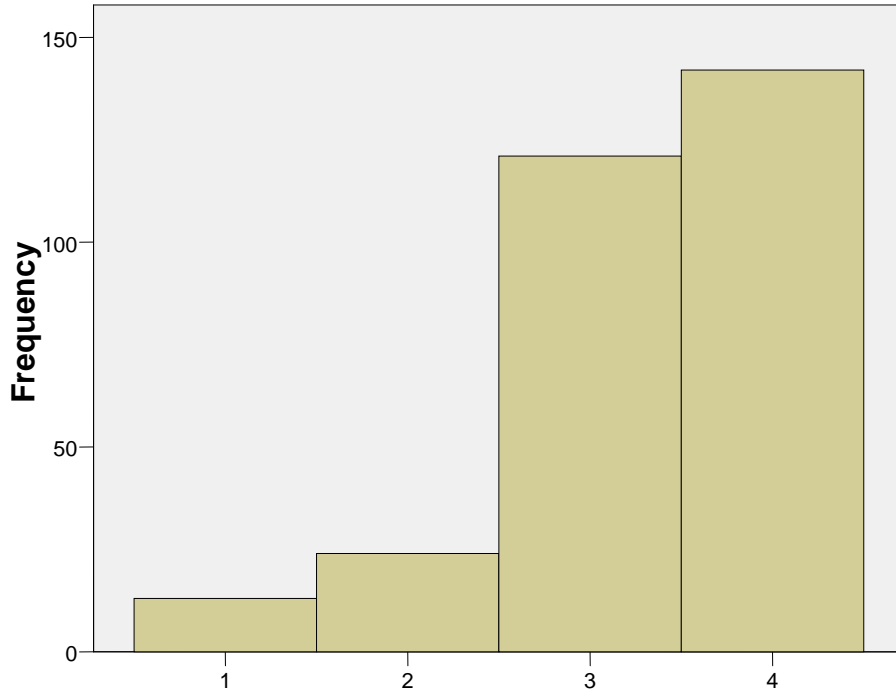
Histogram



Mean =3.45
Std. Dev. =0.714
N =300

I don't feel that there is any place where I really fit in this world

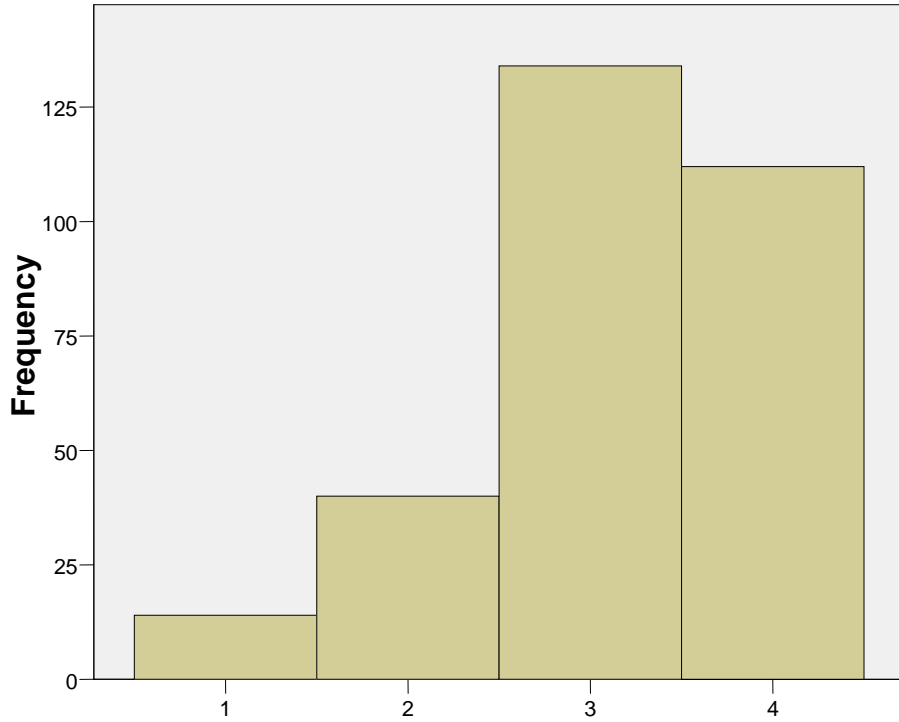
Histogram



Mean =3.31
Std. Dev. =0.797
N =300

I am uncomfortable knowing that my background and experiences are so different from those who are usually around me

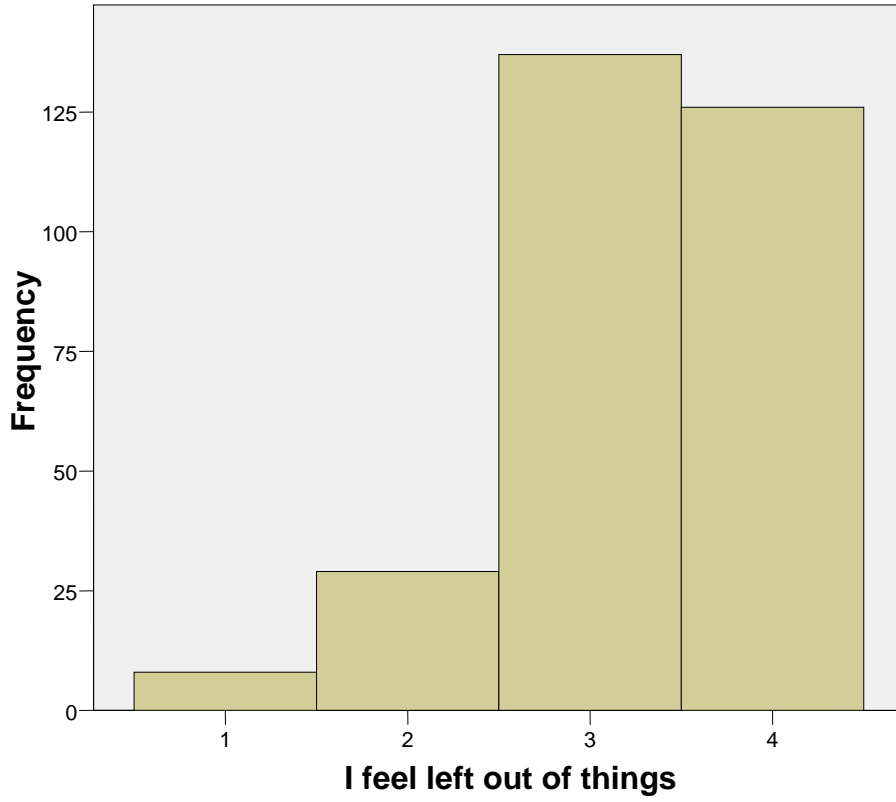
Histogram



Mean =3.15
Std. Dev. =0.821
N =300

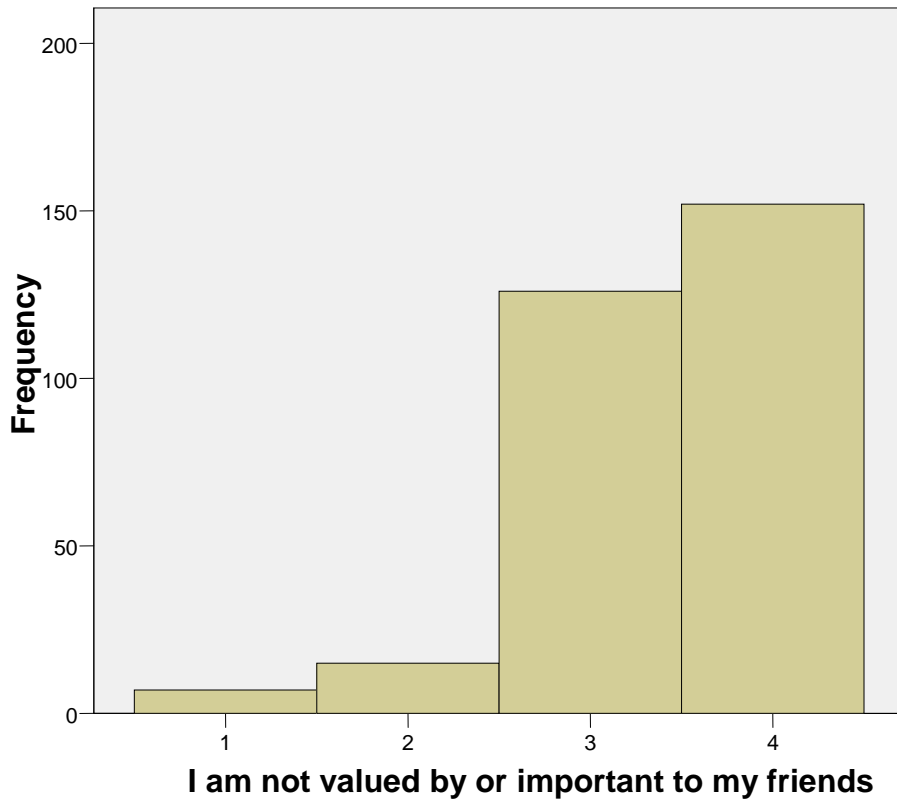
I could not see or call my friends for days and it wouldn't matter to them

Histogram



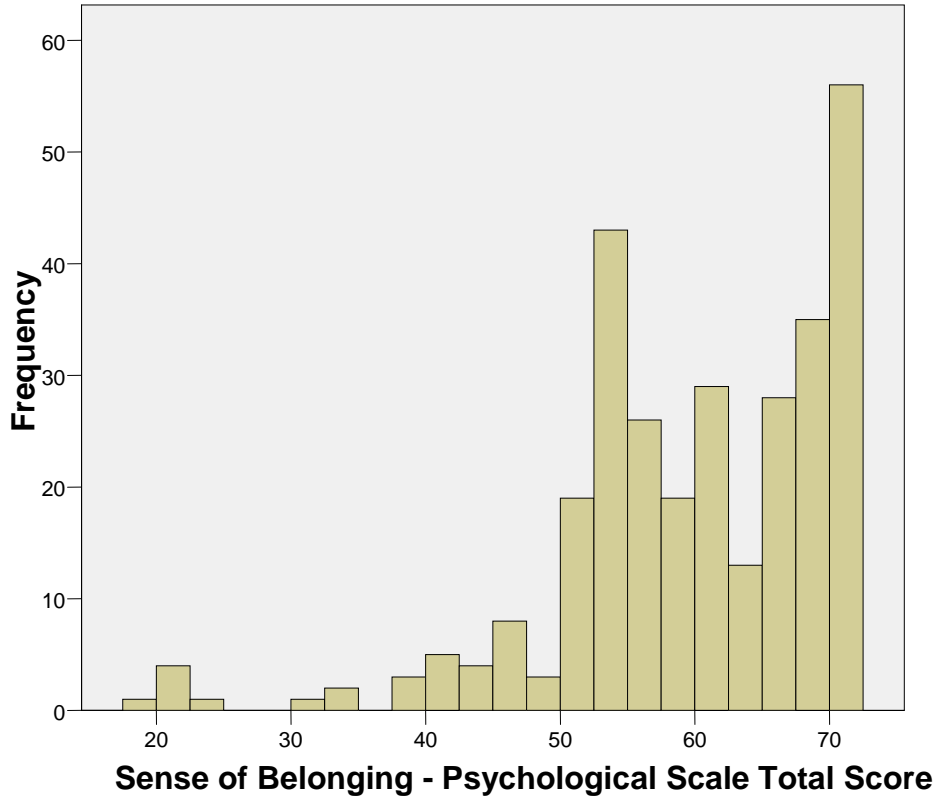
Mean =3.27
Std. Dev. =0.743
N =300

Histogram



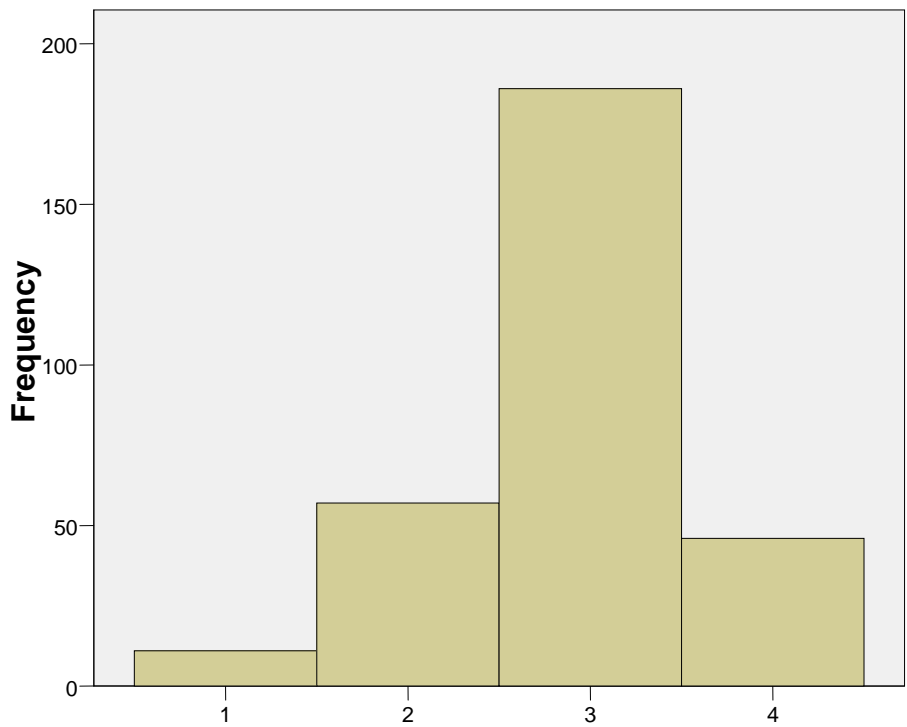
Mean =3.41
Std. Dev. =0.695
N =300

Histogram



Mean =59.69
Std. Dev. =10.391
N =300

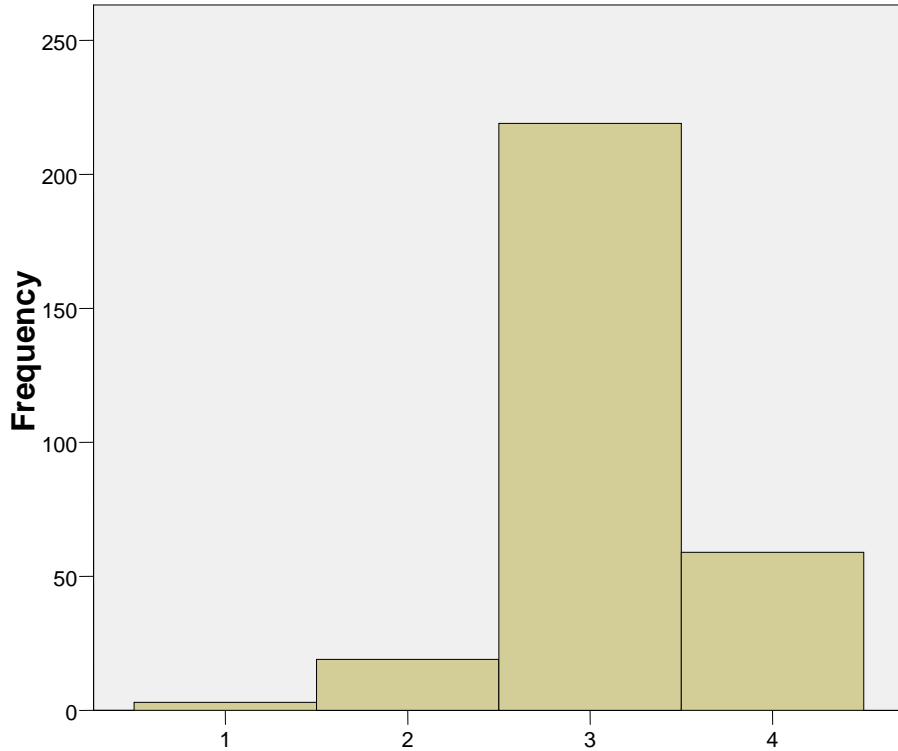
Histogram



Mean =2.89
Std. Dev. =0.692
N =300

It is important to me that I am valued or accepted by others

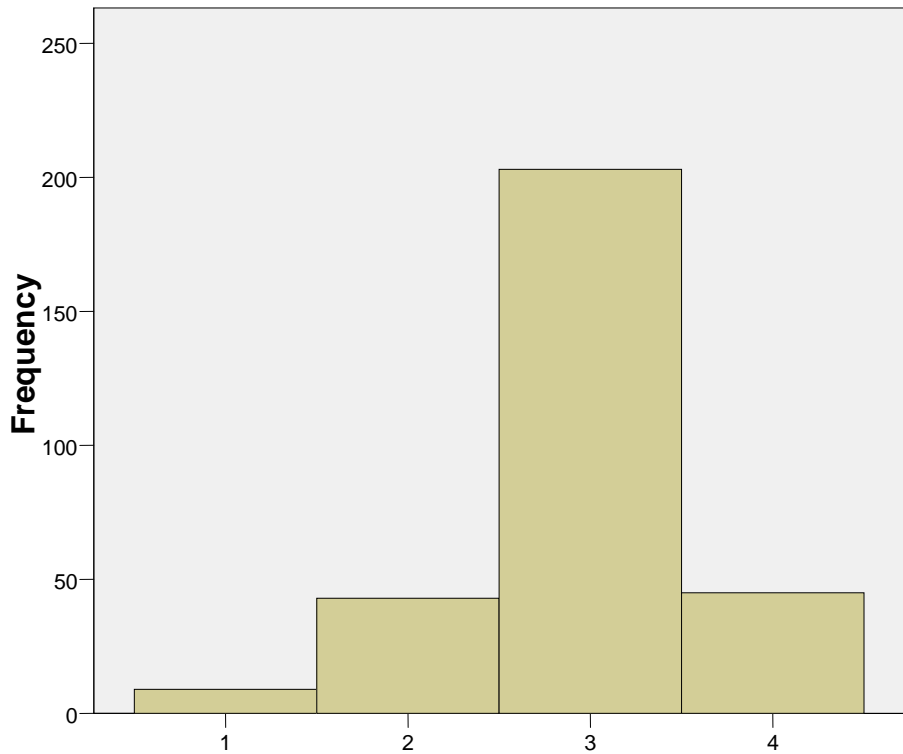
Histogram



Mean =3.11
Std. Dev. =0.537
N =300

In the past, I have felt valued and important to others

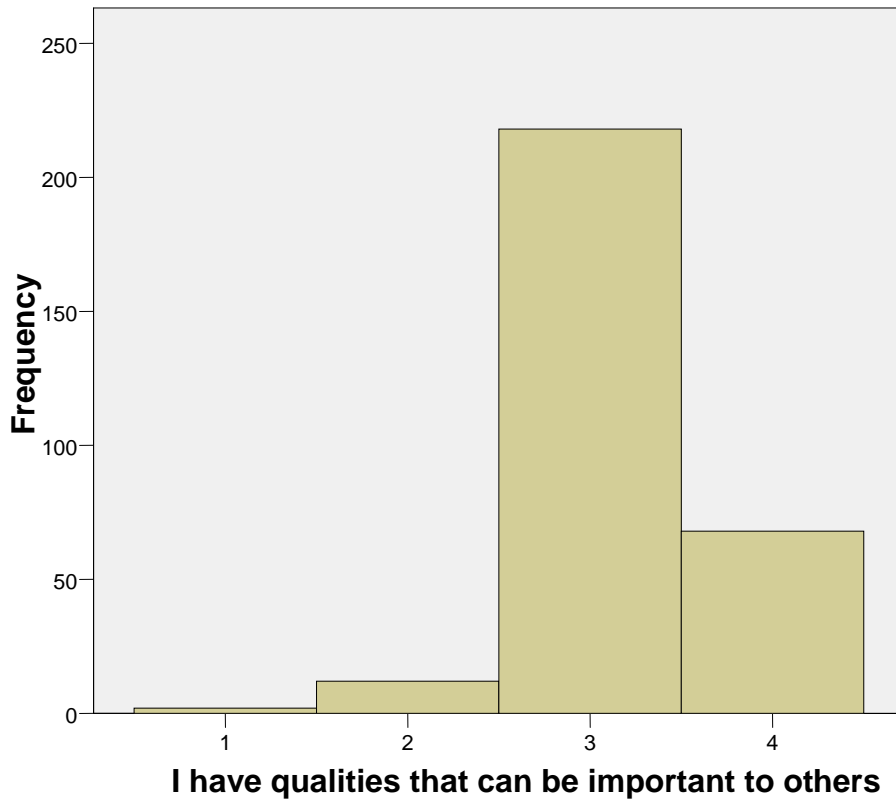
Histogram



Mean =2.95
Std. Dev. =0.642
N =300

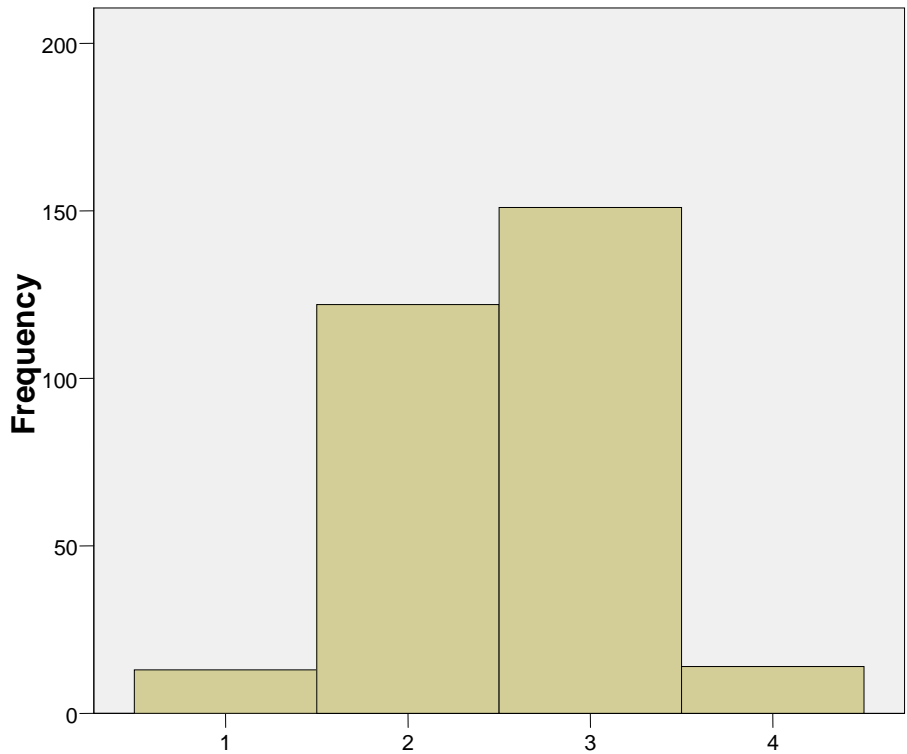
It is important to me that I fit somewhere in this world

Histogram



Mean =3.17
Std. Dev. =0.514
N =300

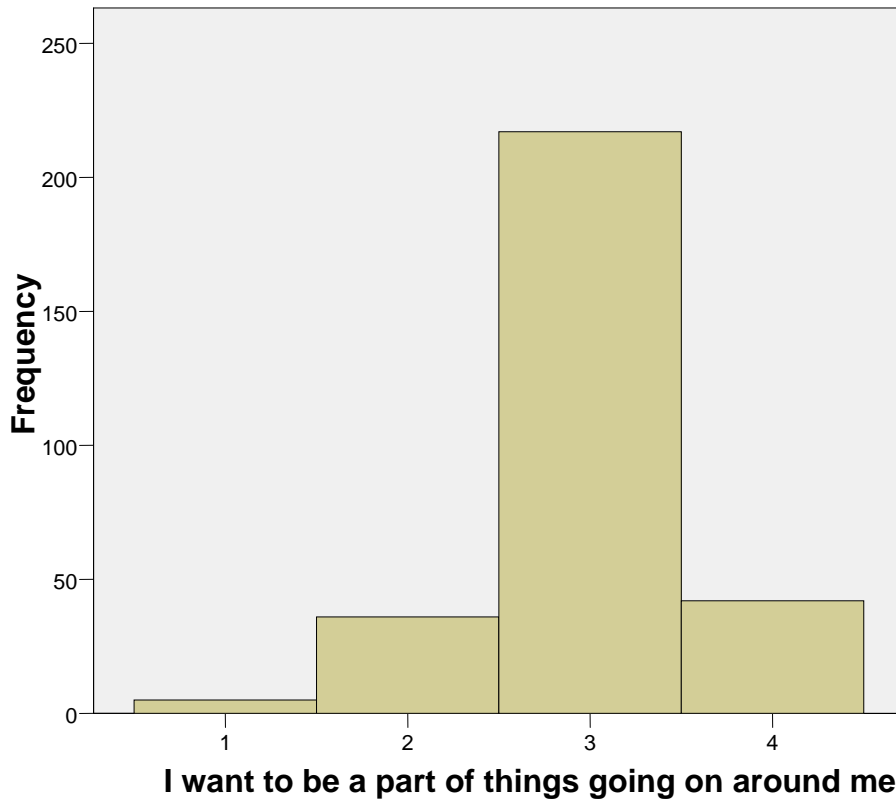
Histogram



Mean =2.55
Std. Dev. =0.655
N =300

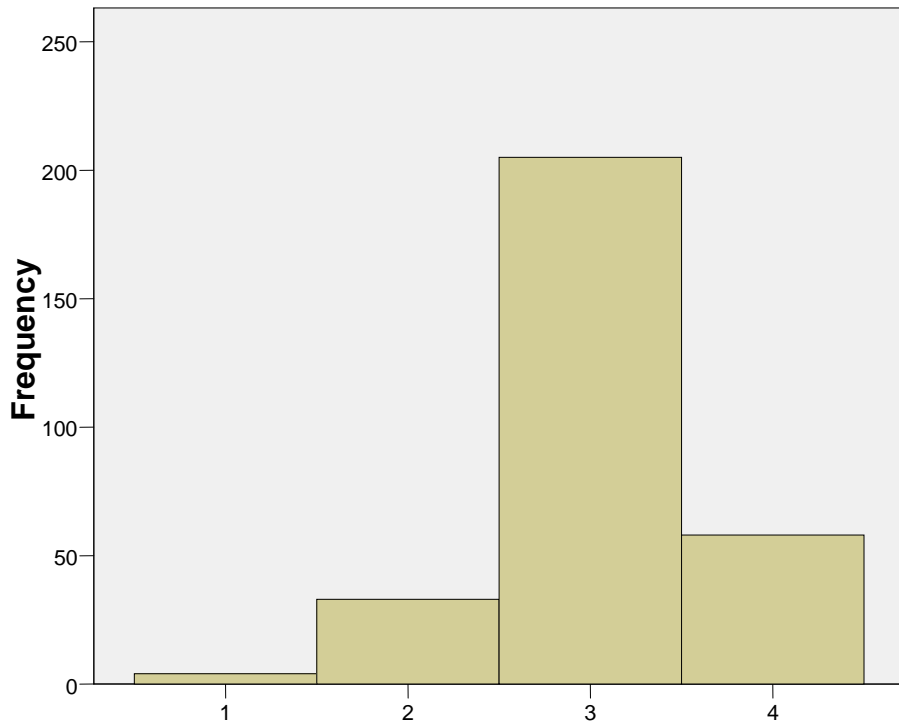
I am working on fitting in better with those around me

Histogram



Mean =2.99
Std. Dev. =0.572
N =300

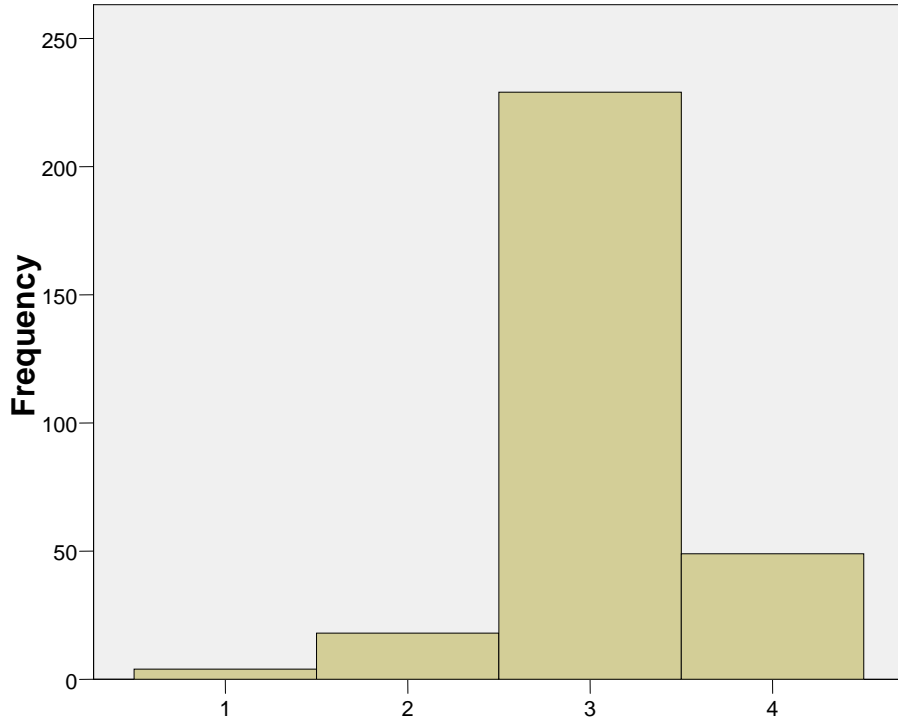
Histogram



Mean =3.06
Std. Dev. =0.596
N =300

It is important to me that my thoughts and opinions are valued

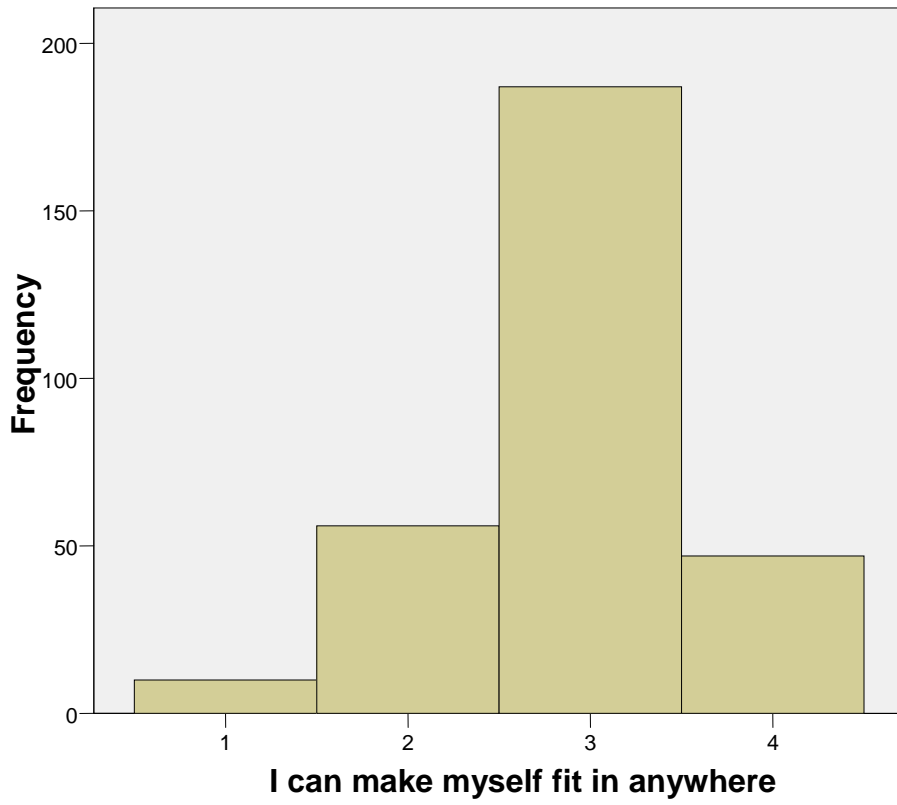
Histogram



Mean =3.08
Std. Dev. =0.521
N =300

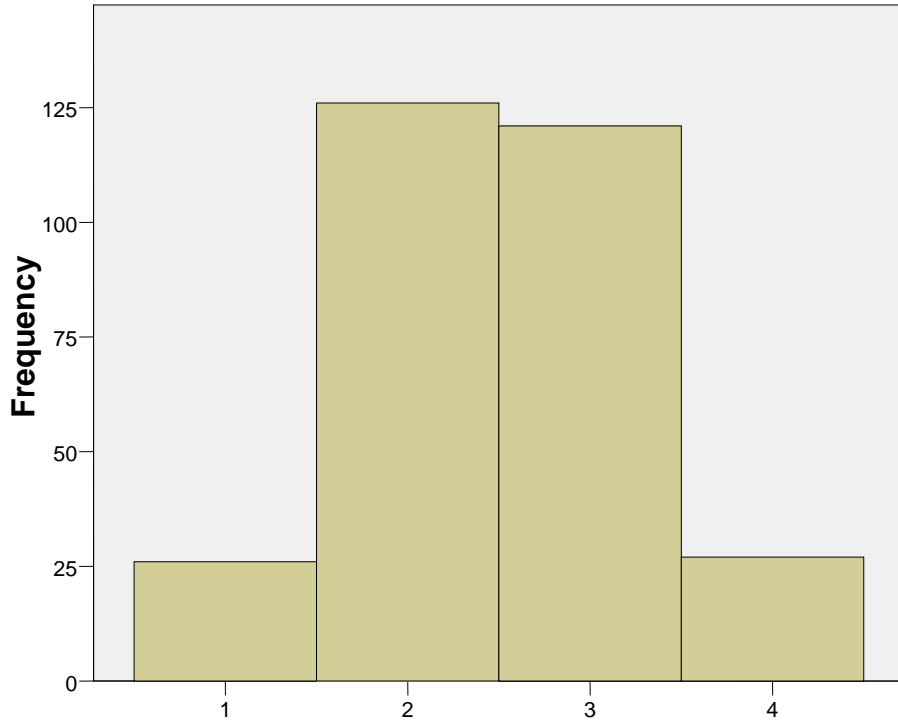
Generally, other people recognise my strengths and good points

Histogram



Mean =2.9
Std. Dev. =0.685
N =300

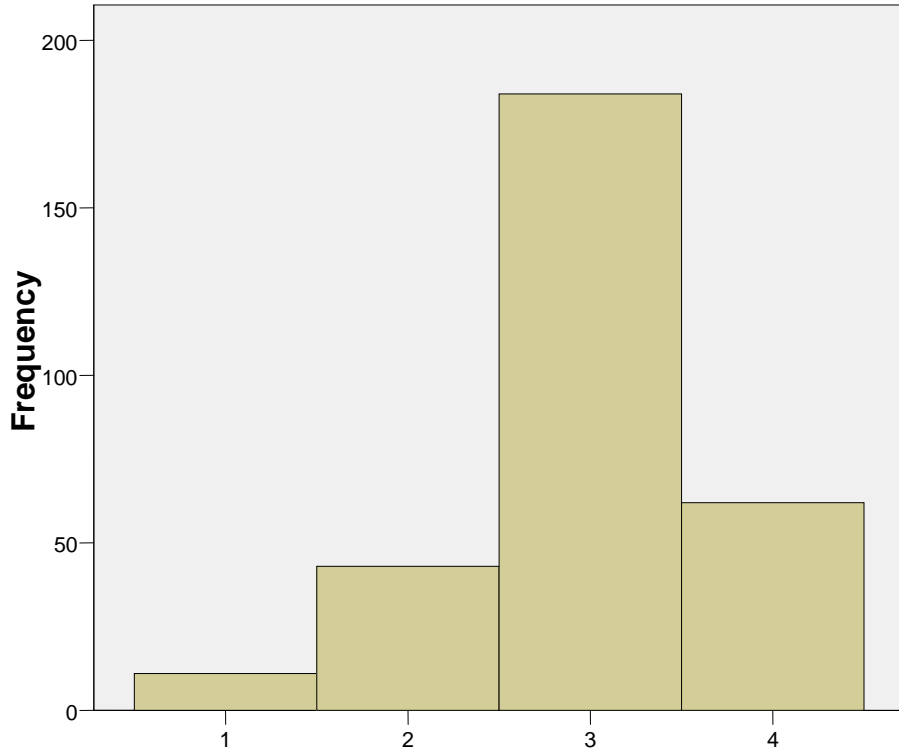
Histogram



Mean =2.5
Std. Dev. =0.778
N =300

All of my life I have wanted to feel like I really belonged somewhere

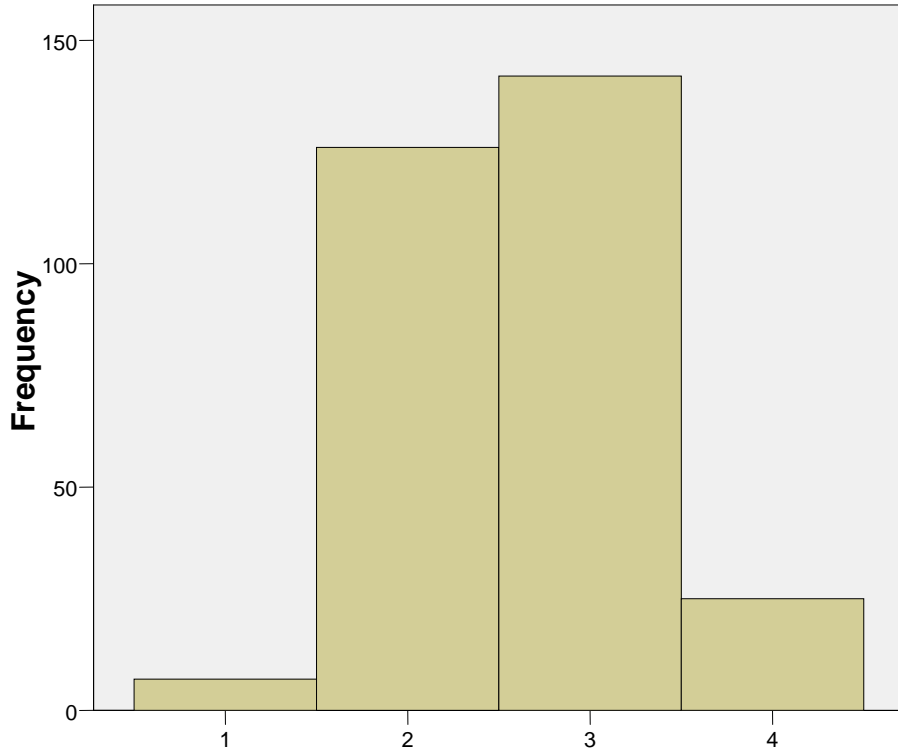
Histogram



Mean =2.99
Std. Dev. =0.706
N =300

I don't have the energy to work on being a part of things

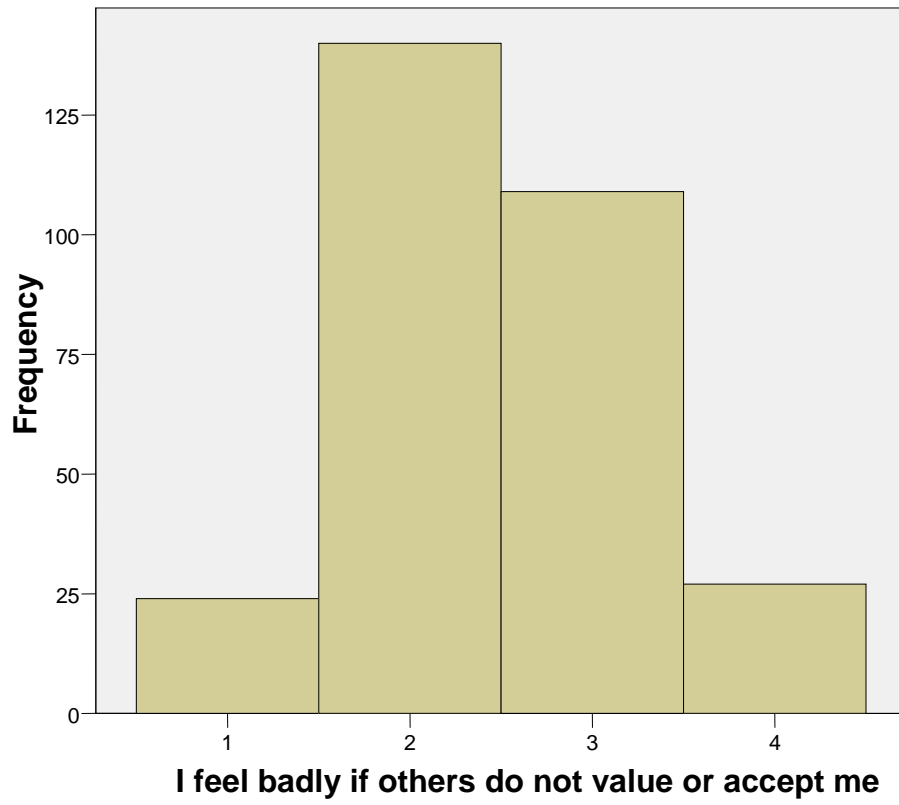
Histogram



Mean =2.62
Std. Dev. =0.672
N =300

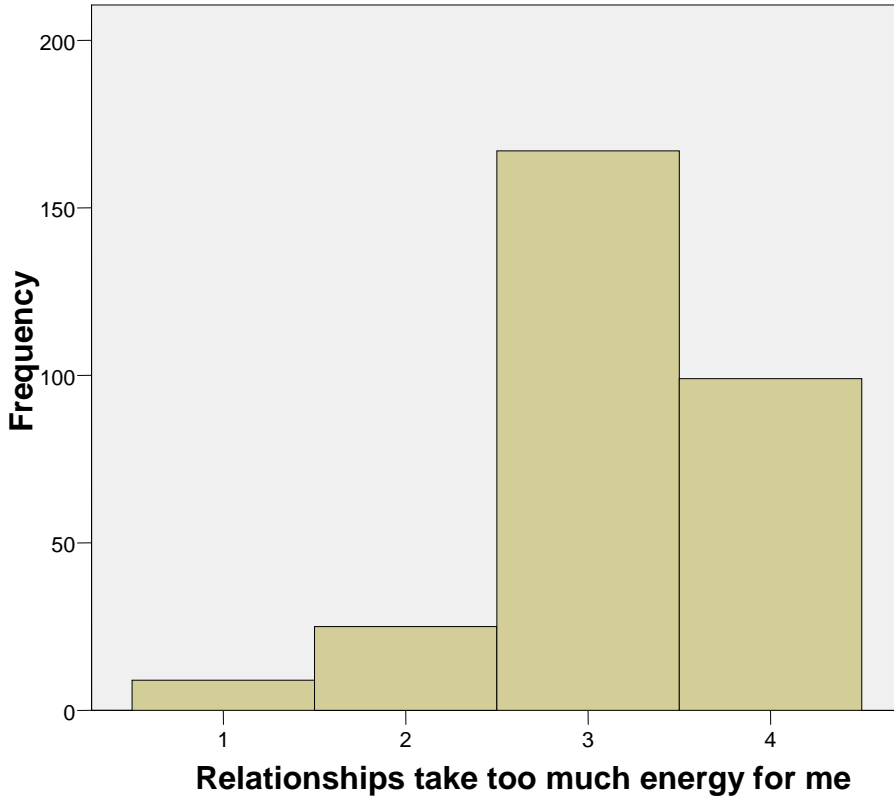
Fitting in with people around me matters a great deal

Histogram



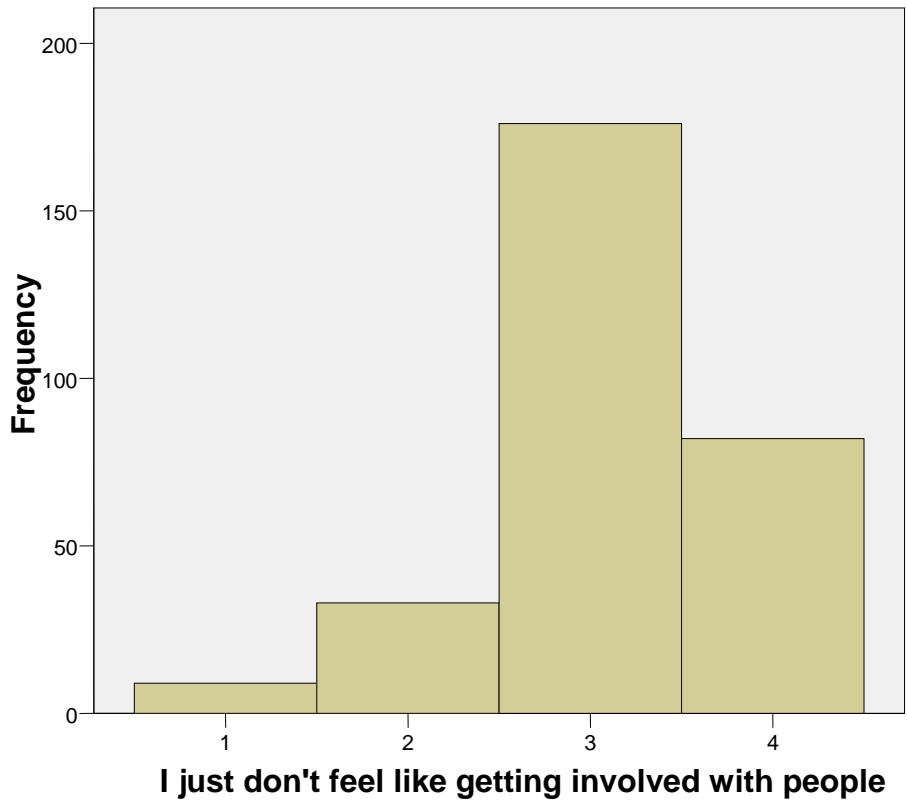
Mean =2.46
Std. Dev. =0.769
N =300

Histogram



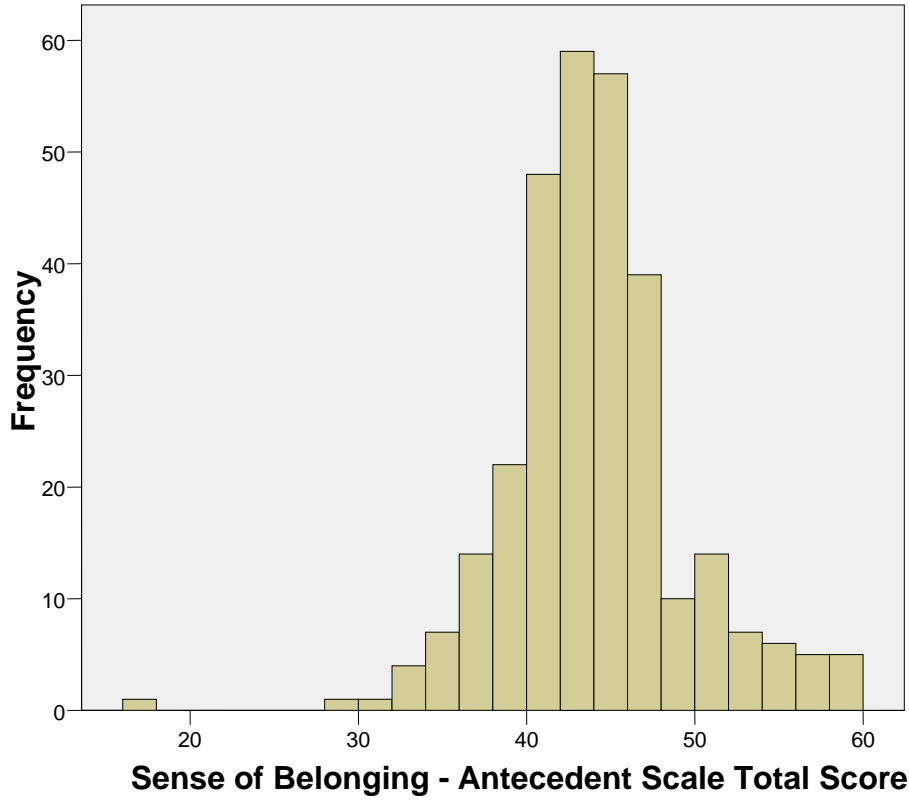
Mean =3.19
Std. Dev. =0.707
N =300

Histogram



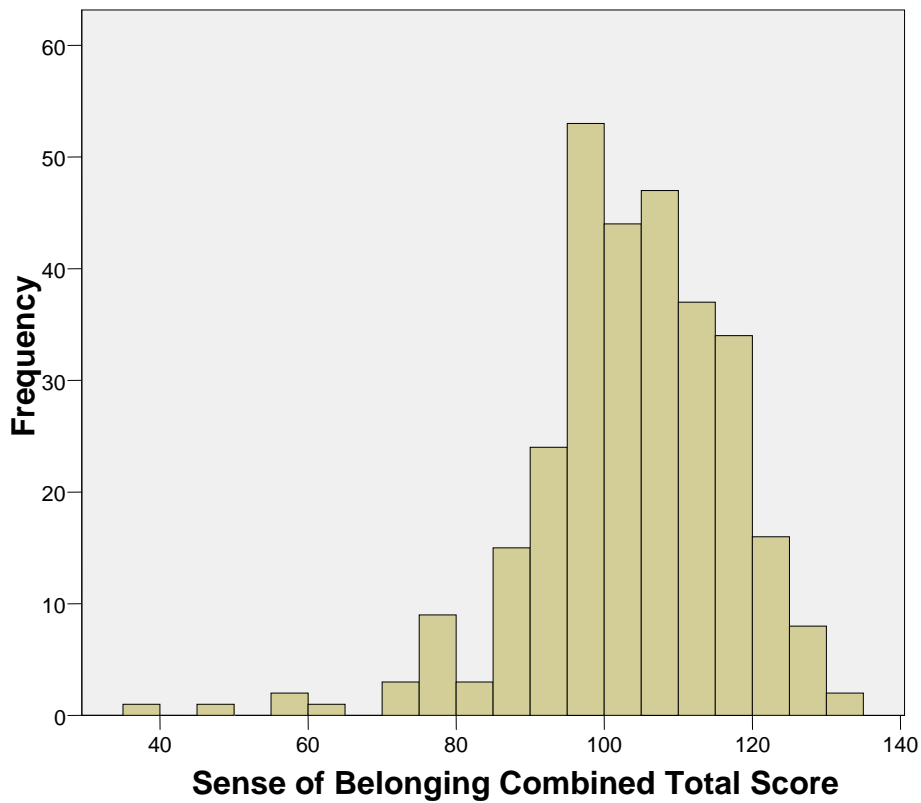
Mean =3.1
Std. Dev. =0.703
N =300

Histogram



Mean =43.56
Std. Dev. =5.304
N =300

Histogram



Mean =103.25
Std. Dev. =13.47
N =300

Appendix AC
Total Variance Explained Table

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	21.867	24.297	24.297	21.496	23.884	23.884	12.441	13.823	13.823
2	11.229	12.477	36.774	10.898	12.109	35.993	12.312	13.680	27.503
3	4.487	4.986	41.760	4.048	4.498	40.492	5.703	6.337	33.840
4	4.122	4.580	46.340	3.709	4.121	44.612	4.294	4.771	38.611
5	3.006	3.340	49.680	2.635	2.928	47.540	3.961	4.401	43.012
6	1.982	2.202	51.882	1.615	1.795	49.335	2.691	2.990	46.002
7	1.820	2.022	53.905	1.423	1.582	50.916	1.816	2.018	48.020
8	1.565	1.739	55.643	1.157	1.285	52.201	1.783	1.981	50.001
9	1.485	1.650	57.293	1.098	1.220	53.421	1.763	1.959	51.960
10	1.434	1.594	58.887	1.038	1.153	54.575	1.084	1.205	53.165
11	1.402	1.558	60.445	.980	1.089	55.664	1.065	1.184	54.349
12	1.313	1.459	61.904	.875	.973	56.636	1.047	1.164	55.513
13	1.225	1.361	63.265	.820	.911	57.547	.999	1.110	56.623
14	1.186	1.318	64.582	.786	.873	58.420	.996	1.107	57.730
15	1.118	1.243	65.825	.719	.799	59.219	.988	1.098	58.827
16	1.082	1.202	67.027	.679	.754	59.973	.866	.962	59.789
17	1.058	1.176	68.203	.653	.725	60.698	.818	.909	60.698
18	.999	1.110	69.312						
19	.966	1.074	70.386						
20	.906	1.006	71.393						

Appendix AD
Varimax Rotated Factor Loadings

Item	Factor																	h^2
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
I don't feel that there is any place where I really fit in this world	.870																	.787
I feel like a square peg trying to fit into a round hole	.855																	.773
I feel left out of things	.834																	.845
I feel like an outsider in most situations	.829																	.748
In general, I don't feel a part of the mainstream of society	.826																	.738
I am troubled by feeling like I have no place in the world	.822																	.726
I am not valued by or important to my friends	.799																	.715
If I died tomorrow, very few people would come to my funeral	.793																	.694
I feel like a piece of a jigsaw puzzle that doesn't fit in the puzzle	.791																	.711
I am just not sure if I fit in with my friends	.785																	.685
I feel like I observe life rather than participate in it	.770																	.657

Item	Factor																	λ^2
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
I am uncomfortable knowing that my background and experiences are so different	.755																	.615
I would describe myself as a misfit in most social situations	.725																	.621
I could not see or call my friends for days and it wouldn't matter to them	.713																	.645
I could disappear for days and it wouldn't matter to my family	.706																	.610
I often wonder if there is any place on earth where I really fit in	.704																	.610
I would like to make a difference to people or things around me	.672																	.550
I generally feel that people accept me	.487								.334									.432
I can make myself fit in anywhere	.406								.403									.410
Overall, I am very attracted to living in this suburb		.822																.804
I feel like I belong in this suburb		.726																.706
In general, I am satisfied with living in this suburb		.716																.652
This area has a good feeling about it		.698																.677
I plan to remain a resident in this suburb for a number of years		.678																.652
Given the opportunity, I would like to move out of this suburb		.678																.682
This suburb is a wonderful place in which to live		.663																.651

Item	Factor																	h ²
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
People should be proud to say they live in this suburb		.661																.622
I feel relaxed when I'm at this suburb		.656														.343		.733
This suburb is my favourite place to be		.643				.441												.716
I feel happiest when I'm at this suburb		.642				.385										.310		.771
This suburb is a beautiful place to live		.633																.575
This suburb is a good place for families		.628															.336	.654
This area is an interesting place to live		.592															.336	.632
Living in this suburb gives me a sense of community		.579	.485															.684
I am satisfied with the quality of housing in this suburb		.577														-.306		.537
There is a feeling of pride in this community		.576																.537
This suburb is a good place for children to grow up in		.575														.483		.679
This suburb has a lot of good things going for it		.529																.536
This suburb is a pleasant place to walk		.507																.452
This suburb is one of Western Australia's most attractive places		.491								.320								.475
This suburb is a comfortable, relaxing place to live		.441		.338						.396								.635

Item	Factor																	λ^2
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
I feel that I can really be myself in this suburb		.391					.370									.385		.540
There just isn't enough privacy in this area		.370		.329														.440
I visit my neighbours in their homes			.796															.703
I borrow things and exchange favours with my neighbours			.741															.687
The friendships and associations I have with other people in my suburb mean a lot to me			.682															.595
I rarely have neighbours over to my house to visit			.660															.558
I regularly stop and talk with people in my suburb			.609															.566
A feeling of fellowship runs deep between me and other people in this suburb			.600															.589
If I needed advice about something I could go to someone in my suburb			.527								.328							.507
I feel loyal to the people in my suburb		.321	.516															.527
I like to think of myself as similar to the people who live in this suburb		.399	.461															.597
If the people in my suburb were planning something I'd think of it as something "we" were doing			.399															.398
I would be willing to work together with others on something to improve my suburb			.346															.357
This suburb is a disgrace to Western Australia				.656														.604

Item	Factor																	λ^2
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
This suburb is a terrible place for children		.361		.595														.585
Life is really dreary in this suburb				.584														.601
Living in this suburb is unpleasant		.428		.571														.605
They should knock the whole place down and start again		.347		.569														.551
It's ridiculous to think people really like living in this area				.562														.525
It is dangerous to live in this suburb		.327		.531														.439
The environment in this suburb is bleak and depressing				.450							.378							.558
This suburb is a boring place				.416														.469
People don't care about this suburb and it's no wonder				.314														.328
Fitting in with people around me matters a great deal					.739													.603
It is important to me that I fit somewhere in this world					.674													.542
It is important to me that I am valued or accepted by others					.660													.513
I feel badly if others do not value or accept me					.641													.499
I am working on fitting in better with those around me					.621													.473
It is important to me that my thoughts and opinions are valued					.601				.425									.642

Item	Factor																	\underline{h}^2
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
I want to be a part of things going on around me					.572													.553
All of my life I have wanted to feel like I really belonged somewhere	-.310				.474													.419
This suburb is the best place for doing the things I enjoy the most		.449				.761												.831
For doing the things that I enjoy the most, no other place can compare to this suburb		.381				.690												.695
This suburb is not a good place to do the things I most like to do						.508												.544
I really miss this suburb when I'm away from it for too long		.476				.502												.547
This suburb says very little about who I am							.605											.565
Everything about this suburb is a reflection of me		.390					.598											.679
This suburb reflects the type of person I am		.460					.547											.651
I just don't feel like getting involved with people	.441							.719										.790
I don't have the energy to work on being a part of things	.405							.603										.614
Relationships take too much energy for me	.410							.585										.680
Generally, other people recognise my strengths and good points	.379								.596									.625
In the past, I have felt valued and important to others	.389								.570									.613
I have qualities that can be important to others					.365				.506									.590

Item	Factor																	h ²
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
This suburb is a very clean place		.325								.464								.419
The quality of life in this suburb is low				.383							.565							.612
I think I agree with most people in my suburb about what is important in life			.458									.527						.630
I believe my neighbours would help me in an emergency		.325	.426										.499					.638
As far as I am concerned, there are better places to be than this suburb		.425				.398								.449				.697
% of variance	23.88	12.10	4.49	4.12	2.92	1.79	1.58	1.28	1.22	1.15	1.08	.973	.911	.873	.799	.754	.725	60.7