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# Understanding the impact of tenure status on the overall life satisfaction of BNG housing subsidy beneficiaries

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**2020**
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# UNDERSTANDING THE IMPACT OF TENURE STATUS ON THE OVERALL LIFE SATISFACTION OF BNG HOUSING SUBSIDY BENEFICIARIES

UNIVERSITY OF WITWATERSRAND

MSc DEVELOPMENT PLANNING

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DATE: 14 JULY 2020

# UNIVERSITY OF WITWATERSRAND

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A Research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, Johannesburg in partial fulfilment of the requirements of the Master's Degree in Development Planning.

## Declaration

I, Frederick Beckley declare that this research report is my own unaided work. It is being submitted for a Master's degree to the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to any other University.

Mr. FKV Beckley

(Signature of Candidate)

**14TH DAY OF JULY, 2020**

# Acknowledgements

I would like to thank my parents Alfred Beckley and Thandiwe Beckley for their continuous support through all the years of my studies. You have shown me what it means to support someone till the very end; I always want to make you proud. I want to extend my gratitude to my cousin Makhehle Mpako for being there for me throughout my hardships and challenges throughout the completion of my research report.

I would like to my thank my supervisor Aly Karam, who has pushed me to be the best in all what I do, he believed in me even when I did not believe in myself. Without his support this research report would have not been possible. I would also like to thank Sarah Charlton, who served as an agent for CUBES, as part of the Narratives of Home Project with the Urban Forum Centre, Durban University of Technology, which have enabled me to cover my fees for the year. Lastly, I extend my gratitude to the Gauteng City Region Observatory (GCRO) for supplying with the data for my research and IQ Business for funding my MSc Development Planning degree.

Lastly, I would like to thank my colleagues and close friends for the support and encouragement through the challenges experienced during the compilation of this research report. To: Karabo Makete, Tupa-Omkumo Iyambo, and Namhla Tantsi, your motivation, encouragement, and words of wisdom carried me through the difficult times. Thank you.

# ABSTRACT

The high levels of in migration to the Gauteng province has led to an increase in the demand for housing in post-Apartheid South Africa. The government has faced numerous housing and socio-economic challenges with regards to the urban poor. Tracking the magnitude of state-provided housing in its mandate to better the well-being of citizens is of significance at various scales. Programmes such as the Reconstruction and Development Programme (RDP) have provided housing for the urban poor in order to better the well-being of recipients. For the purposes of the study the betterment of one's life is considered to be the overall satisfaction an individual has with their life. The overall perception of an individual's well-being is influenced by various predictor variables within different spheres of life, which include social, political and economic domains. Therefore, understanding how of tenure status affects RDP housing recipients perception of their overall well-being is the main focus of the study. This paper defines tenure status as the legal ownership of land occupied by South African citizens (Cambridge, 2019). The definition poses various questions but it accommodates the dynamics of land transfer in South African communities.

Overall life satisfaction is defined in two ways: the degree to which an individual is healthy, comfortable, and able to participate in or enjoy life events (Jenkinson, 2016); and a sociological category designating all possibilities offered to the individual by society in order to organise their existence based on their own needs and desires (Bucur, 2017). Various studies refer to the term quality of life and overall life satisfaction interchangeably and this study will do the same. The data used to predict overall life satisfaction is obtained from the GCRO's (Gauteng City-Region Observatory) Quality of Life survey conducted bi-annually. The study area considered is the Gauteng province and excludes the other areas included in the Gauteng City-Region.

The multinomial logistic regression model is used to determine the probable effects of the predictors of overall life satisfaction. The five quality of life surveys have been considered in order to trace the significant variables across time. The results of the five models run include subjective and objective domains. Tenure status is considered to impact the overall life satisfaction of individuals; nonetheless the model identifies an insignificant impact of RDP housing on overall life satisfaction.

Keywords: Overall life satisfaction, subjective domains, objective domains, multinomial logistics regression, RDP housing

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# CHAPTER 1

# UNPACKING THE IMPACT OF SUBSIDIZED HOUSING ON OVERALL LIFE SATISFACTION

## 1.1 Introduction

The Quality of Life surveys that have been conducted in Gauteng have documented an improvement in the quality of life (de Kadt et al., 2018). The 'Quality of Life' (QoL) is a term often associated with human well-being that is firmly supported by the Quality of Life survey that Gauteng City Region Observatory (GCRO) undertakes to monitor and evaluate the satisfaction of the citizens with provincial government and service provision (Culwick, 2018). The factors which influence the quality of life vary across different scales and geographical locations, therefore making it difficult to determine the exact attributes contributing to the overall well-being of citizens (Culwick, 2018). The study narrows down the broad investigation to explore the impact of subsidized-housing on the recipient's perception of their overall life satisfaction.

Overall life satisfaction has become integral in the analysis of determining the efficacy of interventions (Palesch and Gross, 1996). Amongst the challenges that communities are faced with such as high crime rates, poor service delivery, increased protests, economic concerns and high levels of unemployment, the overall the quality of life of people in Gauteng has improved (from the 2011 Quality of Life survey to the 2017/2018 Quality of Life survey – see annexure A). The challenges impact various domains in people's lives such as safety levels, satisfaction with the government, social cohesion and economic benefits (de Kadt et al., 2018). The overall change in the quality of life index over time has increased between 2011 and 2017/18 from 6.02 to 6.30, respectively; the quality of life index is calculated out of 10. This is true for the whole sample but there might be differences within the sample.

In accordance with social development, the quality of life is assessed by implementing various dimensions which include housing (de Kadt, Parker and Culwick, 2018). The housing indicators reflecting the quality of life can be assessed by relating quality of housing, quality of housing environment and housing cost burden indicators. These can be part of the challenges that Reconstruction and Development Programme housing (RDP housing) recipients face, thus altering the perceptions of the recipients overall well-being. The question then arises, what is the impact of RDP on the recipient's life as a whole (Culwick, 2018). This research aims at investigating the impact of RDP housing on the

recipient's overall life satisfaction. This will be done quantitatively by determining the dependent variable and understanding the key determinants that will inform the model that will highlight the overall contributing factors. Therefore the study will seek to inform public policy and legislation regarding the impacts associated with state provided housing.

## 1.2 Purpose/Rationale

South African policymakers have goals, objectives, and strategies directed towards the economic and social development of South Africans which are detailed within various plans and frameworks such as the National Development Plan 2030 (NDP) and the Integrated Development Plan (IDP). The aim of the IDP is to achieve certain goals and objectives at the local scale, these goals include the development and improvement of the well-being of citizens. The detailed information regarding the state of well-being of the citizens in different geographical locations is obtained through a series of bi-annual surveys conducted by the Gauteng City-Region Observatory (GCRO). The surveys inform policymakers on the progress, challenges, and opportunities prevailing at different localities (de Kadt et al., 2018). Planning professionals are enlightened on shortcomings and prevailing triumphs with regards to failed and prosperous plans and strategies targeted towards urban and rural populations (Culwick, 2018).

This empirical study reflects on the responses of the dwellers by investigating and documenting the dynamics associated with different contexts in Gauteng. The study will enable professional bodies such as the local government and policymakers to make better informed decisions with regards to sustainable housing delivery and hopefully better quality of life. The professionals will be able to conceptualize better and improve policy and development plans or programs, through developing context-based solutions. This study will help to refine and distinguish multiple facets of an often unqualified and limited portrayal of state housing benefits. Furthermore, this study will contribute to the understanding and provide clarity on the effect of state-provided housing. The main contribution of this literature is to explore how an individual's perception of their self-assessed overall well-being is affected by state-provided housing.

## 1.3 Problem Statement

The housing delivery programs have delivered houses for the citizens since the enactment of a new government and have shifted from quantity to quality in delivery. Despite some successful housing delivery programs in South Africa. The fundamental differences in analytical approaches, such as classical and liberal-neoclassical approaches, to housing policy, may be the underlying reasons why government policies, population growth (including migration, urbanization, and demographics), municipal administrative issues, political and economic variables, are hindering factors to state-housing delivery. This impacts the individual's perception of their overall well-being. Most published work on housing programs deals with the theoretical basis and the effect of state-provided housing programs on the poor is often unclear (Salcedo, 2010). Predominantly, housing program failures in South Africa are caused by corruption and mismanagement, while some due to poor quality housing, some by poor location of housing projects and some by minimal involvement of stakeholders and beneficiaries in housing projects (Manomano, Tanga and Tanyi, 2016). The shortcomings in the programs inevitably impact the lives of recipients and with that, the satisfaction with their overall well-being is altered (Msindo, 2017).

In April 2019, South Africa marked 25 years of the transition to democracy. Yet there is still a huge gap in the housing delivery market. Housing and land are the two most frequent issues cited as contributing to the dissatisfaction of South Africa's poor population. There have been numerous protests against the poor living conditions amongst the marginalised population in Gauteng such as protests in Pennyville, Soweto and marches to the City of Johannesburg municipality offices by communities in the south of Johannesburg in 2013. While recent political parties have adopted land into their manifestos, the need for acceptable housing has been of intense demand since the rise of democracy. Therefore, considering the increased demand and backlogs of state provided housing, the need for housing calls for the analysis of the impact of state provided housing on the overall perception of the recipient's well-being and satisfaction.

## 1.4 Location of the Research

**Gauteng Province – (Municipalities)**




*Figure 1.1: Map showing the localities (municipalities) in Gauteng that will be considered in the study and fall part of the Gauteng-City Region (Done by: Miriam, 2019).*

The GCRO, due to their confidentiality and privacy policy, does not provide the exact locations of interviewees but will provide the enumerated locations of respondents within Gauteng. The interviews were conducted in the 529 wards in Gauteng (de Kadt et al., 2018). This serves as a limitation because the analysis will be unable to track the overall life satisfaction of the individual recipients who may have been repeatedly interviewed in the QoL survey from 2009 – 2018. These repeated respondents result in double counting of and inaccuracies when the data is analysed. The actual locations would be significant to determine whether the overall life satisfaction is dependent on location. Yet the municipalities will be used to investigate the impact of location on overall life satisfaction. The data of the study has been provided under strict policies associated with the GCRO and on attainment an agreement was made between the GCRO and me. The data does not provide the exact location of the respondents. This is aligned with the GCRO's privacy policy, in attempt to protect the respondents. Furthermore, the GCRO's has requested to receive a copy of the research report on completion. The research ethics clearance was obtained from the Wits Ethics committee through the School of Architecture and Planning (see Annexure A).

## 1.5 Research Question

The main research question for the study is:

**What is the impact of RDP Housing on the recipients' overall life satisfaction?**

### 1.5.1 Sub-Questions:

1. Which of the domains contribute most to the respondents overall life satisfaction?
2. What are the key determinants of overall life satisfaction in the study?
3. What is the state's contribution to an individual's overall life satisfaction?

## 1.6 Literature Review

This section of the report covers the related literature on the topic. The literature will serve as a theoretical basis to define and critically describe the overall life satisfaction. The literature will then highlight key concepts which will assist with the understanding of the attributes affecting overall life satisfaction. After unpacking the literature on overall life satisfaction, I will unpack the notion of state provided housing under the Reconstruction and Development Programme (RDP) and the subsequent programs. The paper will highlight key concepts and challenges associated with the program and unpack the associated benefits. I will then draw up a conceptual framework which will deliver the main indicators which are used to quantify overall life satisfaction.

### 1.6.1 Overall Life Satisfaction

The concept of overall life satisfaction is increasingly interchanged in literature with the quality of life. The term is one which is used widely across various fields of study such as economics, geography, philosophy, literature, medicine, and sociology. The concept is also commonly used in everyday life with every individual assigning different individualities with respect to their essentials and ambitions (Bucur, 2017). For the purpose of this study, overall life satisfaction will be used interchangeably with the quality of life and will be suggested to have two definitions: a sociological category designating all possibilities offered to the individual by society in order to organise their existence based on their own needs and desires (Bucur, 2017); and the degree to which an individual is healthy, comfortable, and able to participate in or enjoy life events (Jenkinson, 2016).

Through understanding the definitions above it is easy to distinguish that there is no, unanimity; rather, humans have made it possible to define this concept through a subjective perspective (Kerce, 1992). The human's perspective is influenced by numerous factors, such as environmental and individual systems of values (Bucur, 2017). Such factors influence the perception and interpretation of their overall well-being, through various theoretical languages.

Overall life satisfaction can be closely associated with more or less good or satisfactory characteristics of the human being, which includes concepts such as happiness, quality of life, and current environmental conditions, at a given time (Upadhyay and Hyde, 2006). International studies, such as the work of Anir Upadhyay and Richard Hyde associate the quality of life primarily with human well-being (Upadhyay and Hyde, 2006). The paper offers a premeditated reconstruction of the quantification of overall life satisfaction, the justification is based on the fact that quality of life and sustainable development share common components to access well-being (Upadhyay and Hyde, 2006).

The Upadhyay and Hyde (2006) paper argues that the inclusion of environmental factors provides a new measure of the quality of life approach, in such a way that the local and social quality of life is measured in terms of sustainability. Essentially the environmental quality of life examines the people-environment congruity and high levels of congruity are associated with a better quality of life (Upadhyay and Hyde, 2006). The case study examined in the paper is an Ecovillage in Currumbin where objective features (such as natural environmental condition, built environment condition, availability of services and facilities and economic activities) and subjective features (assessed though neighbourhood attachment questionnaire) were investigated (Upadhyay and Hyde, 2006). The results of the study concluded that a combined approach to the evaluation of the quality of life is a true reflection of the living standards and level of satisfaction one has with ones living conditions and life as a whole (Upadhyay and Hyde, 2006).

Studies by Campbell, Converse, and Rodgers (1976) have highlighted that there is not necessarily a strong relationship between affluence and subjective quality of life. The same can be said about overall life satisfaction. As much as it is assumed that the acquiring of goods and services serves as a tool with which individuals enhance their feelings of well-being (objective approach), this is not always the case (Kerce, 1992). This is why there is a subjective approach and it is considered when evaluating the quality of life. Subjective quality of life assessment simply refers to investigating the perceptions of well-being and how people feel about their lives (Kerce, 1992). This study will seek to

understand using a combination of these approaches (subjective and objective) to determine the effect of state-provided housing on the quality of life of recipients.

### 1.6.2 The Reconstruction and Development Programme (RDP)

The Reconstruction and Development Program is part of South Africa's profound transformation at different levels of government and society at large. Government is committed to effectively addressing the problems of poverty and the general gross inequality present in all aspects of society (Parliament, 1994). The RDP sought to address aspects of society which include: Basic service provision, developing our human resources, building the economy, democratizing the state and society. Through basic service delivery, there are proposals, strategies, and policies which the state is expected to communicate and develop with society (Parliament, 1994). The term RDP was established in order to reconstruct and develop South Africa societies which experienced the worst of the apartheid system.

The priority areas include jobs, land, housing, water, electricity, telecommunications, transport, and a clean and healthy environment, and nutrition, health care, and social welfare. In this way, the RDP (program) sort to reconstruct the family and community in the country (Parliament, 1994). Through programs and proposals collectively agreed upon by the state and civil society in its entity, there are those associated with housing and provision of land. The concept of RDP housing is a phrase repeatedly used in the chapter to refer to the housing structures provided through the programme. It is of significance to note that the RDP was abandoned a couple of years after it had started and other government programmes overtook the functions/objectives of RDP. This study will unpack the intended objectives/priority areas of the RDP considering and associating them with the housing program and how overall life satisfaction has been affected within the period of 2011 – 2018.

The perspectives of society and the state are equally significant in order to further understand the road to sustainable growth and development practice amongst policymakers in South Africa (Charlton, 2013). The study will source from the perspectives or responses in the Quality of Life survey as representative of the affected population and unpack literature which will give perspectives of the state on state-provided housing. The interpretation will provide results which will determine the effect of state-housing on the overall perception of an individual's well-being.  This places emphasis on the arguments

presented in literature, which significantly advocate for a combined approach in understanding the overall life satisfaction (Casale and Posel, 2010).

## 1.7 Research Methods

Over the years, the mathematical model has proven to be a tool for scientific research, for the analysis of reality (Bucur, 2017). This has enabled various experts to verify the consistency of ideas and scientific theories, in order to explain, explore new concepts and establish new relationships between phenomena, socio-economic activities, and processes (Bucur, 2017). The proposed research method for this study is quantitative analysis by analysing secondary data. This type of research is referred to as applied research because it seeks to obtain information and draw conclusions on phenomena in order to help make decisions to optimize the policy development research field (Bucur, 2017).

The data would be analysed according to a time series method where data will be analysed over time and compared in order to evaluate the change in overall life satisfaction over time, in relation to state-provided housing (RDP). The mathematical model, the multinomial logistic regression model, will help bring clarity about the housing programs effect. The model will explore the numerous indicators and the varying extent to which state-provided housing impacts the recipient's perception of the overall well-being. The data will be sourced from the GCRO (Gauteng City-Region Observatory) quality of life survey. The equation below identifies the dependent variable (Overall Life satisfaction) and the independent variables (subjective and objective indicators) respectively:

***[Overall Life satisfaction = Subjective indicators + Objective indicators]***

## 1.8 Structure of Research Report

The compilation of the paper will consist of 6 chapters which include the following: Chapter two which will unpack the literature related to the subject matter and develop a theoretical framework to establish significant variables used to predict overall well-being. The conceptual framework will be attached to identify key concepts; Chapter three will consist of a review of the research methods of analysis and unpack the necessary logistics of statistical methods and why the multinomial logistic regression is best for this particular study and detail the dynamics of the study area; chapter four provides the descriptive

statistics of the study area; chapter five provides the results from the statistical analysis and the chapter six will respond to the sub questions and the main question of the study. The concluding section will provide a comprehensive overview of the study, considering some limitations and discussing some significant outputs/results.

## 1.9 Conclusion

The chapter provides a description around the dynamics of overall life satisfaction and outlines the significance of the topic in relation to the context of Gauteng. The purpose is to feed into development policy and hopefully influence the overall outlook on the impacts of subsidized housing in Gauteng. The chapter identifies its contribution to development planning literature and social science studies by undertaking this empirical study based on the perceptions of citizens and state officials. Furthermore, the study looks into RDP housing owners and programmes thereafter, primarily because this will inform citizens and scholars of the effectiveness/benefit of government programmes directly. Understanding the impact and progress of government initiatives and programmes allows for the restructuring and refinement of delivery models and systems.

The report expects to find out the positive or negative impact of RDP housing on the recipients' perception of their overall life satisfaction. The statistical model (Multinomial Logistic Regression) used in the research methods of the study, will provide results with statistical variables. The goodness-of-fit, likelihood ratio and parameter estimates results should identify the significant impact that RDP housing has on life satisfaction. There are other indicators which will be included to understand the relationship of the subjective and objective to overall life satisfaction. It can be expected that some indicators in this context may not have a recognisable impact on the overall life satisfaction of the recipients of RDP housing (Bucur, 2017).

# CHAPTER 2

# NAVIGATING THROUGH LITERATURE

## 2.1 Introduction

This section will explore the various conceptualizations of the overall life satisfaction, suggested in the literature. The chapter will draw from literature to understand the introduction of happiness or satisfaction related concepts and how they moved into urban studies. The chapter will draw on the methods of measurement and various approaches taken to quantify overall life satisfaction. The lessons from developed and developing countries will be explored to obtain a comprehensive understanding of the various definitions of life satisfaction. Furthermore, the chapter will explore the various theories and thoughts around subsidized housing and the objective and subjective indicators involved in the quantification of life satisfaction.

## 2.2 Conceptualizing the Overall Life Satisfaction

The concept of 'quality of life' was introduced to the medical discipline in the 1960's through interest in the health and wellness of individuals or populations (Camifield, 2013). This is based on the impacts of the war on people's health and homes. The quality of life has been interchangeably used in social science with the concept of overall life satisfaction (Kubiszewski, Zakariyya and Constanza, 2018). The concept of quality of life or overall life satisfaction has always been associated with interpreting the well-being of humans and their standard of living. Urban contexts have been continuously transformed and faced with immense pressures from the population, which are related to urbanization, migration, informal settlements, socio-economic deprivation and extensive inequalities in health and well-being over the years. The concept of happiness or life satisfaction has emerged as significant in urban studies (Papachristou and Rosas-casals, 2018).

Life satisfaction or sometimes referred to as happiness or subjective happiness or overall well-being or quality of life is profoundly defined across various disciplines and there are various concepts discussed as indicators in order to quantify and define the overall life satisfaction. The article by Kubiszewski et.al (2013), based in Australia, discusses the overall life satisfaction as a broader term than economic production and living standards or a measure of a countries GDP (Gross Domestic Product). Overall life satisfaction includes a full range of factors that contribute to what is valued by individuals and their

subjective perceptions towards their lives, which reaches far beyond material aspects (Eurostat, 2017).

Kubiszewski et.al (2013) places emphasis on how life satisfaction should be measured through evaluation and consideration of the economic, social and environmental indicators which contribute to the individual's daily life. Overall life satisfaction in this paper is defined as being the general well-being of individuals (objective well-being) and the perceptions they have of towards their living conditions (subjective well-being). The concept is closely associated with the concept of sustainable development and satisfactory accommodation or housing (Streimikiene, 2015). Contrary to social science studies on quality of life the paper by Theofilou (2013) defines the 'quality of life' as generally a multifaceted concept which emphasizes the self-perception of an individual's current state of mind. The ideology behind the interdisciplinary nature of quality of life and life satisfaction primarily stems from numerous domains which need to be considered in order to develop a comprehensive interpretation of the state of well-being of an individual (Theofilou, 2013).

Considering the various definitions of the overall life satisfaction, this paper extends the definition of overall life satisfaction in two ways: the extent to which a person is healthy, comfortable, and is able to participate in societal activities or take pleasure in life's events (Jenkinson, 2016); and a sociological category which acknowledges all options offered to the individual by society in such a way that the individuals existence is organized based on their own needs and desires (Bucur, 2017). These definitions provide an idealistic mixed approach to the interpretation and investigation of life satisfaction of the individual. Overall life satisfaction considers the humans perspective and in doing so understands that the human's perspective is influenced by numerous attributes which range from the urban environment to individual systems of values (Bucur, 2017). The aspect of life satisfaction that analyses the perception of the individual is sometimes flawed because individual perceptions are always different in some way or the other. This is primarily because of a lack of information, personality traits, cultural factors and an individual's limited ability to process information (Kubiszewski et.al, 2018). Significantly the individual perceptions are integrated into the overall perception one has regarding the significance of system outputs or project deliverables.

### 2.2.1 Theories and Thoughts about the Overall Life Satisfaction

Quality of life is theorized in most literature as being composed of life satisfaction, happiness, and optimism (Moller, 2004). Life satisfaction is the human's rationalized perspective of their life and happiness being an emotional interpretation of the individuals' well-being (Gaibie and Davids, 2009). This study will consider the overall life satisfaction as a component of the quality of life in order to attain a comprehensive understanding of the contributing factors to an individual's well-being.

Objective and subjective perspectives are equally important in order to make accurate deductions on the improvement or deterioration of the well-being of individuals or society (Kerce, 1992). Significantly, a paper by Gaibie and Davids (2009) investigates a change in the quality of life (QOL) of South Africans based on the primary objectives introduced with the concept of post-apartheid democracy. The paper considers the concept of racial segregation, severe inequality between racial groups and legacy of apartheid and traces how South Africa's democracy mandated to overcome the legacies of apartheid (Gaibie and Davids, 2009). Fundamentally, the paper explores the objective inequalities such as infrastructure provision, basic service delivery, sanitation, and housing, whilst conceding the need for a subjective understanding of the living conditions between the haves and have-nots (ibid). The investigative tools used in the study emphasize the need for a mixed approach in quantifying overall well-being of individual's or societies.

Nonetheless, overall life satisfaction is closely associated with the subjective well-being of individuals in society. Studies such as that conducted by Upadhyay and Hyde (2006) emphasize that quality of life is primarily based on humans well-being. Assessing the subjective well-being of individuals provides the following insight: 1) serves as a useful tool for monitoring government efficacy in efforts to provide the basic services for individuals or communities; and 2) it is useful in order to understand the attitudes or feeling of citizens about the country (Gaibie and Davids, 2009). Kubiszewski et.al (2013) identifies indicators in three groupings when estimating the individual's well-being: adjusted economic indicators which include social and environmental aspects; indicators which measure the overall life satisfaction or quality of life through social surveys and; composite indicators which consider a broad scope and bring together a multitude of aspects.

An interesting study was conducted by Ronald Inglehart identifying how a change in public values has a powerful impact on social and political realities (Loubser and Steenekamp, 2012). The study by Loubser and Steenekamp (2012) proves a relationship between life satisfaction and the importance of living in a democracy. The argument by Inglehart

(1994), states that there is a direct relationship between a country's democracy and life satisfaction. The data provided identifies countries where people have had high levels of life satisfaction, adopted democratic systems earlier and maintained them for longer periods than countries where satisfaction is lower (Loubser and Steenekamp, 2012). The study stemmed from an inquiry on how populations' well-being could have a relationship with the development of political systems. Considering how South Africa attained democracy in 1994, it would be of significance to investigate the contribution that has been brought by democracy to the countries level of well-being.

### 2.2.2 A Global Comparison

The various contexts in which individuals live in propose numerous questions about the relevance of the life satisfaction measures, causing researchers to reflect on the normative assumptions and measurement techniques (Camifield, 2013). The overall life satisfaction of individuals has primarily become part of development processes because of their ability to assist in the assessment, planning, monitoring and evaluation of development projects or initiatives (Camifield, 2013). Therefore, this section explores the various life satisfaction measures employed between developed and developing countries and provides significant indicators applicable in the context of South Africa.

The main types of measurement used in developing countries, as discussed by Camifield (2013) include the following: Global Happiness Questions which are used in Barometer surveys - surveys which test/show the development of a particular situation – capturing the degree of happiness and satisfaction of life as a whole. The quantification of the survey data on satisfaction is produced through 1 – 10 point scales, however, the analysis to determine satisfaction has high error variances against true variances. This will have negative implications for the degree of satisfaction obtained (Camifield, 2013). This type of measurement is used to determine the impact of political conflict and generate the impacts of globalization; Satisfaction with Life Scale provides an indication of the individuals' satisfaction with life as a whole. This type is used in countries such as India, Ethiopia, South Africa and Zambia (Camifield, 2013). Both these methods are considered to be time-consuming in critiques on administering the procedures.

There seems to be increased focus in studies on the overall life satisfaction than there is on satisfaction with particular domains (Margolis et.al, 2018). There are two reasons why this may be so: 1) domain satisfaction requires a trade-off between comprehensiveness and efficiency. The assessment of satisfaction with all domains of life encompassing all the domains affecting overall life satisfaction would be a strenuous challenge. The cost of

the approach would be high and thus having some domains having to be excluded, which inherently jeopardises the degree of comprehensiveness (Margolis et.al, 2018) and; 2) the second reason involves the scoring of the domains into an overall life satisfaction score. This challenge arises when one presumes that not all domains are weighted equally in summation because satisfaction with family may be more significant to overall life satisfaction than satisfaction with leisure activities (Margolis et.al, 2018).

The practical setting of measuring life satisfaction proves challenging when considering the capturing, meaning, function, and unexperienced societal experiences which have significance to locals. Explicit conceptual foundations of the measures will increase the degree of accuracy related to interpreting and translating the outcome (Camifield, 2013). Developing countries face immense pressures from various sectors such as low literacy rates, unfamiliarity with emotive feelings and experiences, which compromise data accuracy. Quality of life measurements usually emerge from cultural and normative specific elements in life experiences (Camifield, 2013). Evidence provided in the study by Camifield (2013) identifies two major problems associated with the difference between developing and developed countries. The empirical study looks into the concepts of ethnocentricity and translation (Ibid) as significant problems associated with the application and interpretation of measurements in developing countries.

Ethnocentricity relates to how researchers may take an indicator in a developed country like England and apply the same indicator (without weighting adjustments) in a developing country, like South Africa, assuming applicability and adaption to a similar degree (Camifield, 2013). The translation, conceptualization, and interpretation of life satisfaction indicators can be easily mistranslated therefore being misunderstood by the respondent. Translation associated with well-being, happiness and satisfaction are highlighted in literature conducted in Cambridge social science studies, thus having pivotal discrepancies in outcomes

The process of choosing key indicators at the local level of the community is predominantly associated with the character of the economic status of the community. The context will provide real problems and priority areas which will form the unit of analysis and improvement. The Greenwood (2001) paper discusses relevant indicators by interpreting various indicator projects. The focus of projects has numerous implications for measuring the quality of life (ibid). Therefore, the standard of living – associated with income bracket and Gross Domestic Product (GDP) - will influence the indicators used in various contexts i.e. developing and developed countries.

### 2.2.3 Reflections on Past Studies

Considering the definitions of life satisfaction applicable in this paper, this section will explore the relevant concepts and units of measurement. By drawing primarily from various developed countries, developing countries and empirical studies based on the overall life satisfaction significant considerations can be derived to make the deductions of the study more expansive.

When people are asked to describe their lives, they will do so in terms of their life as a whole or refer to a particular domain in their life experiences. The domains of life are related to the activities, roles, experiences, and relations people encounter (Kerce, 1992). The aspects of life primarily addressed are dependent on the extent of inclusion of the individuals' life experiences and the degree of applicability i.e. where the general population is concerned. Considering Flanagan's (1978) attempt to determine life domains empirically, based on data collected across different regions of the country, the life domains examined are relevant to this study. His study covered diverse races, ages, backgrounds, and regions; he identified five general categories which had 15 life satisfaction domains (Flanagan, 1978). The five categories are: physical and material well-being; relations with other people; social, community and civic activities; personal development and fulfilment; and recreation (Kerce, 1992).

Studies based in the 1970s provide evidence that there are lower levels of satisfaction in aspects/domains of life that have less object ambiguity (Campbell, 1976). This means that some domains will prove to contribute unequally to the determination of satisfaction. There will be several domains identified and explored in the context of the study primarily based on the extent of urbanization, urban-rural migration and urban pressures on the environment and the economy. Most literature in the 21$^{st}$ century is focused on subjective well-being and has increasingly introduced the concept into various disciplines. This has allowed the scope of measurement for overall life satisfaction to expand to include level of satisfaction with work, leisure, health, financial situation, housing, neighbourhood, and relation to family members, the social and physical environment and aspects of self-fulfilment (Kerce, 1992).

Zack and Charlton (2003) conducted a study which provides significant insight on the degree of satisfaction amongst residents in subsidized housing provided by the government, across South Africa. The study did not measure any determinants of satisfaction other than satisfaction with the dwelling. The study further deduced that the residents were nonetheless satisfied with their new housing because they were better off in their current housing than they were in their previous ones (Zack and Charlton, 2003).

This study identifies the significance of a formal dwelling to the well-being of the recipients of subsidized housing as compared to their previous dwellings. The qualitative study serves as evidence of the continuity/expansion of the happiness indicator in social sciences. Location significantly appears as a factor which affects the level of satisfaction individuals have with their dwellings (Zack and Charlton, 2003). Furthermore, the study by Simons, et.al (2014) emphasizes this point, through investigating the satisfaction of residences with their housing in Johannesburg. This study identifies the main contributing factors to dissatisfaction with housing as: mortgage payments, higher commuting costs and limited access to services and facilities (ibid). Considering that the degree of satisfaction with the dwelling is compromised by the above attributes, the overall life satisfaction maybe impacted by the same attributes. This will be a point of inquiry which will be discussed in chapter 6 of this paper when exploring the results of the analysis.

Haybron (2001) argued for the essence of subjective well-being to be included in the quest of interpreting the overall quality of life (Haybron, 2000). Authors such as Martha Nussbaum (2008) admit that the inclusion of subjective states matters and thus it is believed that the perspective of happiness highlights one pivotal element of human experience (Angner, 2012). The paper by Loubser and Steenekamp (2017) recognizes two aspects of well-being: cognitive-evaluation factor relating to life satisfaction and affective evaluation which relates to the happiness aspect. The ideal approach to categorizing measures of overall life satisfaction does not ignore the objective indicators rather studies foster the combination of approaches of indicators such as the economic welfare measures (Kubiszewski et.al, 2013).

Overall life satisfaction is explored beyond the idea of the standard of living and GDP output which is primarily based on individual income and provides a broadened sense of well-being. The GCRO collects data on the quality of life using 58 indicators within a range of questions which measure the subjective and objective well-being. These indicators are categorized into 10 dimensions which are scored from 0 - 1 (using yes or no questions) and are then added together to get a score out of 10 (Culwick, 2016). The 10 dimensions are global life satisfaction, family, community, health, dwelling, infrastructure, connectivity, work, security and socio-political. Deepened insight on these indicators provides greater detail on aspects of well-being and deprivation which guide policymakers and development plans (Parker and de Kadt, 2019).

This study will consider the 10 dimensions of the quality of life as predictors to overall life satisfaction. Considering how the concept of quality of life and overall life satisfaction are continuously interchangeably used in literature. This research will consider the subjective

and objective indicators of the quality of life in determining the overall life satisfaction. The inclusion of the dwelling ownership as an indicator is so that the model is able to respond to the main research question.

## 2.3 Social Housing

This section of the paper will provide various thoughts and theories of the concept of subsidized housing in the world and trace its origins from World War One. The adaptation of subsidized housing will be aligned with why and how the concept was introduced in South Africa. Through exploring housing policy at different scales of governance and the discussion will bring to light different policy on subsidized housing. This will enable the identification of the numerous categories and primarily focus on the Reconstruction and Development Programme (RDP). Lastly, the section will provide concluding remarks on the relationship between Quality of Life (QoL) and subsidized housing and how housing contributes to the Quality of Life.

### 2.3.1 The Beginning

South Africa's housing development is mandated by the constitution. Section 26 of the Constitution of the Republic of South Africa mandates everyone's right to access to adequate housing (Tissington, 2011). This is read in conjuncture with the Housing Act of 1997, approved policies, and chapter 8 0f the National Development Plan (NDP). According to the constitution, it is the governments' duty and responsibility to work in a progressive manner to ensure that all South Africans get secured tenure, housing, basic services, and infrastructure (Republic of South Africa, 1996). There are numerous measures the government can apply to fulfil the social housing obligation facing the country; these include legislation, administration, and finances. Subsidized housing is different from private or rental accommodation because of subsidization by the state (Rust, 2016).

South Africa since the rise of democracy in, 1994 has been actively engaging towards addressing the housing challenges, severe housing shortages and poor living conditions in response to the ills of apartheid. The national government produced a housing program which included the provision of low-income housing. The subsidy was generated to ensure that land, housing, water services, and sanitary infrastructure were provided for the previous oppressed population, which was predominantly black (Fuller Housing Centre, 2014). About 2.8 million houses were built by the year 2010 but the country still faced housing deficits which continued to haunt government in 2014 the housing backlog was

estimated at 2.1 million (ibid). The housing department has built 195 549 houses between 2014/15 till 2015/16 and the country saw 80.1% of people living formal dwellings by the year 2017. At the same time, about 13.6% of the population lives in Reconstruction and Development (RDP) or state-subsidized housing (Fuller Housing Centre, 2014). Yet in the face of some successes, the housing market is faced with immense challenges ranging from severe housing shortages, lack of affordability to fragmented housing policy and insufficient land.

### 2.3.2 Tracing the Law

During the dawn of democracy in South Africa, the National Housing Forum (NHF) alongside the Botshabelo Housing Accord (BHA) on the 27th of October 1994, serves as the foundation of the White Paper on Housing of 1995 (Phago, 2010). The BHA discussions had immense implications for the acceptance of a framework of principles for the departure towards guiding fair and equitable housing policy and strategies (ibid). These principles were able to aid the development of housing policy and development while the country was in transition.

Following these discussions, The Constitution of the Republic of South Africa Act 108 was enacted. The Constitution is considered the supreme law of the land and all housing development, legislation and policy are bound to it. The significant components in relation to housing include:

- The right to have access to adequate housing
- Legislative and other measures (policy) are the states responsibility, with available resources (The Constitution 1996, Section 26).

The Housing Act was enacted as the supreme law of housing; the legislation overrides all previous housing law and further includes:

- Sets the responsibilities of the three spheres of government for housing provision
- The role of the minister in producing the National Housing Code as well as national housing policy
- Bounds all relevant parties involved with the housing act to adhere to housing policies
- This act sets provisions for the South African Housing Fund, regarding allocation and management

The Prevention of Illegal Eviction (PIE) Act of 1998 has amendments which provide for the fairness and reasonability of the process of evictions of people who have unlawfully occupied land and houses. It is a criminal offense to evict without adhering to the formal correct processes.

The Housing and Development Agency (HDA) Act 23 of 2008 was established in order to:

- Identify, hold and develop and release state-owned land for residential and community development
- To ensure that land management is progressive in the development of land and property acquisition in order to ensure sustainability within human settlements

The Social Housing Act 16 of 2008 is the primary piece of legislation for social housing sectors which are expected to align with the 1997 Housing Act. This act is mandated to do the following:

- Development and promote sustainable social housing environments
- Determine the key roles of the different spheres of government involved in social housing
- Provides guidance for the establishment of the Social Housing Regulatory Authority (SHRA) and establishing the responsibilities of the regulatory body for all Social Housing institutions
- Provision of constitutional acknowledgment to all Social Housing Institutions

### 2.3.4 Policies

The Republic of South Africa has drafted numerous policies since the effectiveness of the government's housing development mandates. Inclusive of the policies drafted is the Reconstruction and Development Programme (RDP), Growth, Employment and Redistribution (GEAR) Strategy (1996), the Accelerated and Shared Growth Initiative – South Africa (AsgiSA) (2006), which are the responsibility of different spheres of government. The above show a continuous reconstruction of initiatives to address the betterment of citizens. More recently, the City of Johannesburg has an Inclusionary Housing Policy (2019) which stipulates the incentives, regulations, and mechanisms of achieving inclusive and sustainable housing obligations at a local level. South Africa's policy is flexible and adapts to the changing needs of society (Republic of South Africa, 1994). Primarily housing is a provincial responsibility but this section elaborates on policies across various scales. Below are brief descriptions of the major policy documents which guide the government's housing agendas.

Considering South Africa's profound transformation at different levels of government and society the Government of National Unity has committed under the 1994 Reconstruction and Development Programme (RDP) to address the problems of poverty and inequality evident in South African society. The achievement of the policies objectives requires interdisciplinary attention inclusive of society all groups and communities (Republic of South Africa, 1994). The government fully committed to a macro-economic policy which will promote the RDP as an integrative and coherent growth and development strategy (ibid). The RDP (policy) was primarily introduced into the country to combat the ills of the apartheid government. Poverty and degraded quality of life was just the tip of the immense socio-economic challenges the democratic government had to address. Cheap labour, poor housing conditions, poor working conditions and employment segregation were amongst the issues that the government had to respond to during the change in the country's political system (Republic of South Africa, 1994).

The New Housing Policy and Strategy for South Africa White Paper (1994) is a housing framework that points out the starting point of all housing policy in South Africa. It includes the following: housing as a basic human right; the role of the state; advocates for people-centred development and freedom of choice. It further ensures that the overall approach of government includes the following (Department of Housing, 1994):

- the stability of housing environments
- promotion and support for the housing process
- mobilization of housing finance
- making available the subsidies for housing
- land acquisition and redistribution

The primary values and principles of the White Paper are still relevant in today's society and guiding all human settlement developments in policy and implementation.

Soon after the New Housing Policy and Strategy, the National Housing Code of 2009 was enacted. In accordance with the Housing Act, the minister is expected to publish what is known as the National Housing Code, also known as 'The Code'. The Code provides significant administrative guidelines and suggestions regarding the implementation processes of housing delivery (National Housing Code, 2009). It is in no way a replacement for any form of legislation. The Urban Development Framework of 1997 recognizes the significance of cities and towns in providing for people's needs to housing within a sustainable development context. The framework seeks to ensure that urban development is planned and implemented within a participatory, integrated and environmentally

sustainable manner, in order to ensure a general improvement in the quality of life of people living in urban areas.

The Social Housing Policy for South Africa of 2003 advocates for the improvement in the rental housing sector. The policy is inclusive of the subsidization of social housing projects for people renting accommodation and is for medium to low-income groups. The policy has numerous principles which must be adhered to, such as (Department of Housing, 2003):

- improvement and restructuring of the inner-city through integrated housing development
- It must be responsive to local housing demand through well managed rental housing provision
- It must develop housing which is of decent quality and ensure quality living environments
- Deliver housing which accommodates low income to poor groups
- Must support economic development in the medium to low-income communities through sustainable projects
- Encourage the involvement of the private sector.

The introduction of the Comprehensive Plan for Sustainable Human Settlements of 2004 was at the dawn of a review of governments' achievements in housing from 1994 to 2004. The plan was for the development of sustainable human settlements and had a strategy named Breaking New Ground (BNG) which is a ten-year strategy for housing policy frameworks. The policy served as a further step forward for sustainable housing in that it attempted to detail the necessities associated with housing ownership. Therefore, the house was no longer considered as a single structure rather embodied with numerous critical aspects such as creating jobs and housing by building capacity and empowering communities through knowledge sharing, communication, and awareness on aspects of housing delivery. This policy adheres to the participatory principles suggested by the Urban Development Framework. Provincial government has legislative and executive powers which are concurrent with national government. The provincial human settlements department is responsible for providing a Provincial Spatial Development Framework (PSDF) which is used to guide Integrated Development Plans, investment and infrastructure plans at the local level (Gov.za, 2019).

The inclusionary housing policy which came into action, in Johannesburg, as of the 23rd of May 2019 is a housing program that seeks to mandate developers to dedicate a certain percentage of their housing developments to low – middle-income households or accommodate those who cannot afford the new developments (City of Johannesburg,

2019). The policy is rooted in numerous other policy documents such as the Spatial Planning and Land Use Management Act (SPLUMA) of 2013, the National Development Plan (NDP) of 2030 and the Integrated Urban Development Framework (IUDF). The IUDF mandates for the formulation of inclusionary housing policy which subsidizes or incentivizes developers for the inclusion of low – middle-income housing developments (Harrison and Todes, 2015).

The IUDF was developed on the basis of a number of objectives the city has for social housing and it is linked to the City of Johannesburg's legislative mandates. The framework utilizes various planning tools which are aimed at responding to spatial inequalities. The inequalities are primarily based on the spatial design implemented by the apartheid regime. Many of the city's poor citizens still live far from economic opportunities and social amenities, many of which were formally segregated 'townships' (Culwick, 2018). The city has seen little to no mixture of housing typologies both in terms of income and race (ibid). Therefore, this policy seeks to ensure the increased supply of lower-income housing, the creation of mixed-income residential areas within developments in the city and ensure affordable housing in well-located areas to ensure access to economic opportunity and facilities.

### 2.3.5 DISCUSSION

Considering the literature above concerning the various dimensions, definitions, contexts and explorations of the overall life satisfaction, it is significant to tie things together in order to bring clarity to the relationship between housing and overall life satisfaction. The basis of the discussion will stem from critical thought on the impact certain aspects of social housing have on the well-being of subsidized-housing recipients.

A study by Charlton and Meth (2017) provides evidence of the varied impacts of RDP housing from the recipient's perspective in Durban and Johannesburg and explaining how lived experiences of RDP housing are mixed across various contexts. The study identifies that the individual's well-being is considered to have improved in the case of comparing informal settlement structures and the RDP housing structure. Recognizing how subsidized housing improves the recipient's protection from harmful weather conditions, secures tenure, improves sanitation and access to energy essentially proves the significance of housing to the well-being of recipients (Charlton and Meth, 2017).

Improved privacy, due to attaining a formal structure, has been identified to be subject to household age dynamics (Charlton and Meth, 2017). This has implications for the Inclusive

Housing Policy of the City of Johannesburg which does not indicate any considerations for the recognition of this aspect of privacy. Nonetheless, the house also provides a legacy which can be passed down from generation to generation which inherently creates a better sense of belonging for the recipients. The legitimacy of the housing delivery procedures also relieves community members of the anxieties pertaining to public service delivery (Charlton and Meth, 2017). This further emphasizes the impact of governance on the overall life satisfaction as identified in the nine dimensions of the *Stiglitz-Sen-Fitoussi* Commission (European Union, 2017).

Understanding that the impacts of housing vary across contexts will facilitate policy development and deliver policy makers from generalized assumptions on the impact of social policy and social housing. There are three main dimensions which should be included when interpreting the relationship between housing and overall life satisfaction. See the table in Annexure A for further detail on the indicators under the dimensions of housing quality, housing environment and housing expenditure burden (Streimikiene, 2015). The next section discusses the conceptual framework.

### 2.3.6 Conceptual Framework

Drawing from the literature, there are concepts associated with objective and subjective perspectives in determining the overall life satisfaction. The combined approach in determining the status of the overall quality of life is emphasized across different studies within this chapter. Therefore, below is an indication of the most significant indicators which will be used in the study and will be considered as determining or influencing the individual's overall life satisfaction.

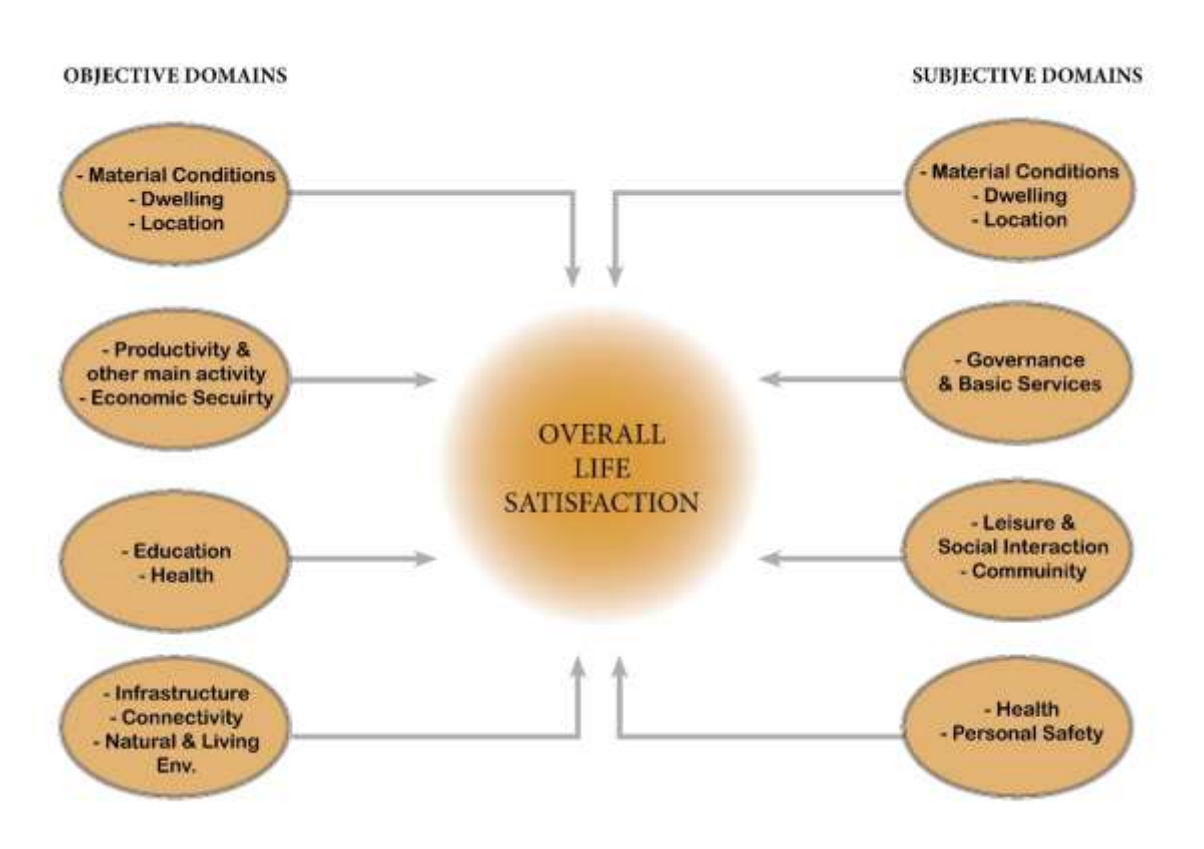



*Figure 2.1: Conceptual framework showing the various concepts/dimensions outlined in the literature relating to the overall life satisfaction in this study*

Drawing from previous studies on overall life satisfaction (quality of life), the conceptual framework above serves to identify the significant domains which contribute to an individual's overall evaluation of their well-being. The domains/dimensions included in figure 2 provide a framework of the objective and subjective perceptions/determinants of how overall life satisfaction will be measured in this study. The **objective domains** represent the physical conditions and assets which contribute to how people meet their needs and experience **subjective** life satisfaction (Kubiszewski et.al, 2018).

The aspects under the objective domains have a significant overlap and interaction with subjective domains. Karam (1993) conducted a study to identify the relationship between neighbourhood satisfaction and housing and the propensity to move. The study contributes to this paper through identifying that dissatisfaction with **material conditions** (such as unit size) contributes to the overall perception of the individual's well-being. The study by Zack and Charlton (2003) significantly identifies the interaction and perception the individual's **dwelling** with their well-being.

Through exploring the satisfaction recipients of subsidized housing have with their formal structures, the relationship between a having formal structure (dwelling) and **location** is

evoked (Zack and Charlton, 2003). This relationship is expressed through the respondent's dissatisfaction with the location of subsidized housing. Furthermore, the respondents overlooked the locational dissatisfaction and deemed their well-being better off than their previous setting due to the formal dwelling. The concept of **connectivity** (referring to access to various modes of transportation) is closely linked with **infrastructure** (road networks and distances travelled) provision and location. The degree of connectivity is primarily based on the quality and status of infrastructure provided around the individual's dwelling location. Significantly, if one struggles to mobilize to access goods and service then their ability to satisfy their material needs impact their degree of overall life satisfaction (Kubiszewski et.al, 2018).

The basis of measuring quality of life in literature of 20$^{th}$ century focused on the objective indicators such as **productivity** and **economic security** which were measured as productivity in society, individual and household income, respectively. This indicator still deems itself relevant in determining overall life satisfaction because it impacts the individual's satisfaction domains; which include adequate access to **education** and **health** care services. The study by Kubiszewski et.al (2013) groups education and health (physical and mental) under human capital when quantifying the overall determinants of life satisfaction. The other objective determinants include built capital and natural capital, which are respectively linked to: the state of the surrounding neighbourhood infrastructure (services) and the benefits humans extract from eco-systems (**natural environments**) (Kubiszewski et.al, 2018). This quality of the natural environment has links to how individuals perceive the **personal safety** in their previous and current locations.

The **subjective domains** in the study by Kubiszewski et.al (2013) significantly incorporate into one variable the subjective domains examined in this study. He refers to the subjective domains as social and cultural capital (Kubiszewski et.al, 2018). Social and cultural capital is a web of interpersonal connections which includes the overall satisfaction with the following attributes: **social networks and interactions, personal safety, location, governance,** and **basic services.** These attributes contribute to the strength of social cohesion and security in the neighbourhoods. The subjective domains provide insight of the individuals overall satisfaction with the objective indicators.

## 2.4 Conclusion

Chapter 2 of this study provides significant detail on past literature and the relevant overlaps in concepts such as quality of life and overall life satisfaction. The significance of unpacking literature helps in the extraction of independent variables which will be used to in a model to predict the dependent variable. The extracted variables include household, political and economic domains. The conceptual framework draws on these domains and categorises the key concepts into subjective and objective domains. The chapter unpacks the laws which govern housing development and delivers significant policy frameworks. The chapter further emphasizes the importance of using a mixed approach in determining the overall well-being of individuals in the 21st century. The variables extracted from literature will be used in a multinomial logistic regression model to examine the response of the dependent variable (overall life satisfaction) depending on the other explanatory variables. Chapter 3 will provide a statistic model which will be used to analyse the data on computer software. The chapter will further provide detail to the context of the study and provide a detailed description of the variables to be analysed.

# CHAPTER 3:

# DETERMINING THE OVERALL WELL-BEING OF LOW COST HOUSING RECIPIENTS

## 3.1 Introduction

This chapter provides contextual analysis and details the methods used in this study. The study considers numerous municipalities which are included in the study area, namely: the City of Tshwane, City of Ekurhuleni, Lesedi, Mogale City, West Rand City, Merafong City, Emfuleni, Midvaal and City of Johannesburg municipalities (see map 3.1). The concepts considered in the conceptual framework will be further discussed in close relation to the overall life satisfaction and further providing measurable specifications of the data from the quality of life surveys provided by the GCRO (Gauteng City-Region Observatory). This chapter will also present the model that will be used to determine the impact of subjective and objective domains on the overall life satisfaction.

## 3.2 Study Area




*Figure 3.1: Map showing the municipalities in Gauteng that line with the sub places of the Gauteng City-Region (Map by Miriam Maina, 2013)*

The study area investigated in this report includes only the Gauteng locations within the Gauteng City-Region (GCR), which is where the Gauteng City-Region Observatory conducts the Quality of Life survey. The Gauteng City-Region is made up of a cluster of towns, cities and urban nodes which form the economic core of South Africa (Gcro.ac.za, 2019). The cities, towns and nodes included in the study lie at the core of Gauteng. The primary cities included in the study are in the Gauteng province, these include: Johannesburg and Tshwane and Ekurhuleni. Johannesburg (in the City of Johannesburg municipality) is considered to be South Africa's financial and economic capital and Tshwane (in the City of Tshwane municipality) is the country's administrative capital (Gcro.ac.za, 2019). Included in the Gauteng City-Region are commercial, industrial and mining areas such as Alberton, springs, Germiston, Boksburg, Vereeniging, Vanderbijlpark, Krugersdorp, Randfontein and Westonaria (ibid). The GCR further includes localities outside of Gauteng which are not included in this study. This study will significantly focus on the municipalities within the Gauteng province to ensure that contextual parameters are set, considering the different dynamics (municipal funding, efficacy, and capacity) experienced in the neighbouring provinces.

### 3.2.1 Demographics

The Gauteng province has a total population which has grown from 12 272 263 in 2011 to 13 399 724 in 2016 and resides within an area of 18 182.5 square kilometres. There are 737 people per square kilometre and this is recorded from the Community Survey of 2016 (Statistics South Africa, 2016). Stats SA's July 2019 estimates of the population predict the current population of Gauteng to be at 15 176 116. Population increases in the province can be associated with the increased urban-migration and infant mortality decreases from 2011 to 2016 (ibid). The 0 – 9 age range has significantly increased in 2011 census from being 1 840 839 of the total population in the province, to becoming 2 277 953 of the total population (Statistics South Africa, 2016). The Gauteng province has a median age of 29 years with that being about 5.8 years higher than the age average of South Africa (Ibid). The highest constituent of the population in the Gauteng province is the age range of 20 - 39 years old, accounting for 4 957 898 of the provincial population. This age range is predominantly assumed to be made up of students and working age or the youth. It is of no surprise that the municipalities in the Gauteng province face the greatest pressure on housing provision (Wazimap.com, 2019). Considering that the highest rate of inward-migration percentage is in Gauteng, it is inevitable that there will be increased demand for services and resources (ibid). Inward-migration rate is higher due to the fact that

people move the province seeking access educational facilities and economic opportunities in the quest of improving their well-being and standard of living (see annexure for graphs and tables of demographics).

### 3.2.2 Household Dynamics

The Community Survey of 2016 which is conducted by Statistics South Africa follows the Census 2011 in identifying the indicators at national, provincial and municipal levels for planning and observing the outcomes of particular development initiatives and programs. These programs address key sectors of the country which include education, health, sanitation, housing, and transport. The purpose of the survey is to provide population count and household characteristics in South Africa (Africa, 2016). The household is defined as a group of people that live and eat together for a minimum of four nights a week (ibid). The data obtained through the survey enables a contextual understanding of the socio-economic circumstances of South African citizens (de Kadt et.al, 2018). The basic element of developing nations is to ensure that citizens have the basic services which include housing, water, and sanitation. The Constitution of the Republic of South Africa mandates that the government must ensure that these services are provided for the population within their limited available resources (Republic of South Africa, 1996). This is stipulated to address the spatial injustices caused by the apartheid system.

The Community Survey of 2016 shows that there has been an improvement in access to housing and basic services (Wazimap, 2019). Monitoring service provision is significant for the achievement of the goals and visions within policies and programs such as the National Development Plan 2030 and Reconstruction and Development Programme. There has been a significant increase in Gauteng's household count, with a growth of about 788 646 households from 2011 to 2016 (Statistics South Africa, 2016). The province has seen household growth from 4 162 491 to 4 951 137 households from 2011 to 2016, respectively. The households living in informal dwellings (shacks) constitute about 17% (841 693) of the total number of households in Gauteng in the year 2016 (Statistics South Africa, 2016). Furthermore, the number of households in Gauteng which were occupied rent-free in 2016 were recorded as 562 126 - which is 11.4% of the total number of households in Gauteng (Statistics South Africa, 2016). Alarmingly this was a decrease from the from the 2011 census which recorded rent-free housing ownership at 625 295, which constituted 15% of the households in Gauteng. Reasons for this relate to transfer procedures of low cost housing amongst citizens and recipients themselves which are often lump sum transactions. There are also possibilities of inheritance of low cost houses by other family

relatives thus the current residents live rent free because the house has been fully paid off.

The GCRO recently published the map in (Figure 3.2) to demonstrate the degree of accessibility for wards in the province to government housing programmes in 2014. Gauteng provincial government needs to provide numerous services due to migration and densification patterns in order to better the overall life satisfaction of citizens in the province (Culwick and Mahulatsi, 2019). Services such as adequate health facilities, infrastructure such as roads, electricity and refuse disposal need to be accessible to the recipients of subsidized housing. In recent years it has been reported that programmes in the Gauteng have been countlessly critiqued for being poorly located and resourced regardless of the increased pressure on housing and service delivery. There is a wide range of attributes that impact the accessibility of services and proximity of housing developments, such as neighbourhood size, public transport and zoning (Culwick and Mahulatsi, 2019).

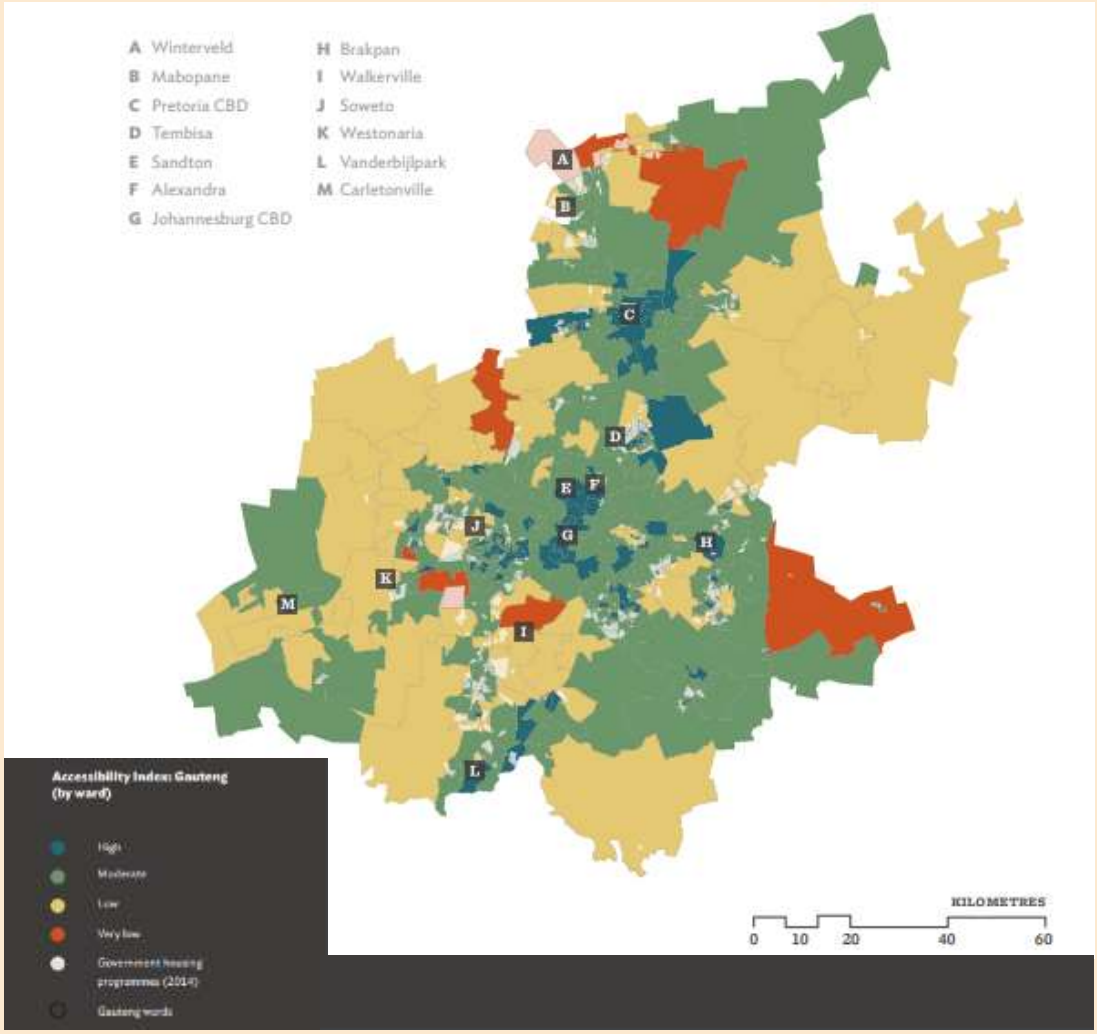



*Figure 3.2: Showing the accessibility of government housing programmes (Culwick and Mahulatsi, 2019)*

The relevant housing programme to this study is The Reconstruction and Development Programme which was initially developed to meet the basic needs, develop human resources, and build the economy, democratizing the state and society (Reconstruction and Development Programme, 1994). The provision of basic needs refers to housing, water, electricity and health services which help improve the livelihood of the individual. These basic needs are assumed to improve the overall life satisfaction of RDP housing recipients and this study seeks to determine the probable effect that RDP housing ownership will have on the overall life satisfaction of recipients.

Figure 3.2 identifies areas such as Pretoria, Sandton, Alexandra, and Johannesburg as having high levels of access to government housing and the areas further away have less accessibility to government housing programmes (Winterveld and Mabopane). The map further identifies areas with very low accessibility areas (Walkerville) adjacent to those with high levels of accessibility. The areas with less accessibility to government housing are potential areas for housing and complimentary services. Annexure A, graph 2 is an Accessibility Index for Gauteng, which is developed to compare the average accessibility score from respondents within government housing, informal settlements and the rest of Gauteng (Culwick and Mahulatsi, 2019). A table in annexure A is provided to show the key variables used to compile the index.

Overall the Accessibility score is 5.1 out of a score of 10, which identifies Gauteng as having an average level of accessibility (Culwick and Mahulatsi, 2019). This means that a significant number of people in GCR do not have adequate access to the necessary living necessities (Culwick and Mahulatsi, 2019). The study was done on all the citizens of Gauteng regardless of what their tenure status and the dwelling typology. This study has a primary focus on the low cost housing programmes when it comes to government programmes. The following section will discuss the relevant methods which were used to collect the data and the data used to determine the overall life satisfaction.

## 3.3 Research Methods

This study will conduct the research through quantitative methods of analysis. Quantitative methods are used to emphasize the statistical and numerical analysis of data through questionnaires or polls or surveys. The type of quantitative method used in the study is the Correlational Research method as we are trying to determine the relationship between the overall life satisfaction and subsidized housing. This study will utilize data

from the QoL surveys which was developed by the GCRO to inform and assist the decision making processes of institutions, organisations and government regarding public policy. The decisions are directed towards social development initiatives/programmes and economic growth (Culwick and Mahulatsi, 2019). The GCRO undertakes their Quality of Life surveys to further monitor and evaluate the effectiveness of development programmes in society (ibid). The data has been primarily collected through Survey Research which involved personal interviews with residents in the Gauteng City-Region. The data will be manipulated through computational techniques to respond to the research question which is to understand the impact of RDP housing on the overall life satisfaction of the recipients (Asaduzzaman Fakir, 2016).

Quantitative methods are presumed to undertake an objective approach to investigating problems. The data is controlled and measured to determine the impact of social development programmes on societal livelihoods (Asaduzzaman Fakir, 2016). Sometimes the results of quantitative research are statistically significant but are insignificant to society (ibid). There are a few issues associated with quantitative methods, which include population issues due to individuals unaccounted for during the survey or participants may refuse to participate; sampling issues; questionnaire issues and some administrative issues (Tsuladze, 2010). Nonetheless some of these issues are resolved through statistical procedures detailed below such as weighting and dummy coding of variables in order to prepare for analysis. The GCRO has coded some variables according to the response of the respondents and where some discrepancies occur I have dummy coded some data to fit the investigation.

The main reasons why quantitative methods were chosen for this study are related to the strengths of the quantitative methods. Quantitative methods allow for a broader study involving a greater number of subjects, which will enhance the generalizability of the results (Asaduzzaman Fakir, 2016). The methods avoid personal bias through the researcher being distanced from the participating subjects and the usage of technological tools. Quantitative methods allow for better accuracy of results due to the large dataset. The methods of investigation enable the production of data summaries that will support the generalization of phenomenon in social science studies (Asaduzzaman Fakir, 2016).

### 3.3.1 Logistic (Logit) Regression Model

The logit model is a regression where the independent variables are used to predict the dependent variable which has as few as two categories (Peng et.al, 2002). For example,

the model is used to test for non-completion or completion, membership or non-membership. Considering that life satisfaction (dependent variable) has more than two categories, the type of regression will be multinomial logistic regression. The logit model is used to obtain the maximum likelihood estimation (Peng et.al, 2002). The logit model is a natural log of the dependent variable which identifies whether or not an event will occur. Therefore, considering the purpose of the study, this model is appropriate in determining whether or not RDP housing has an impact on the overall life satisfaction. The logistic regression is primarily popular because it overcomes some of the restricting assumptions of the Ordinary Least Squares (OLS), which apply to most regressive techniques, one example being the multiple regression.

The logistic regression serves as an extension of the multiple regression in circumstances where the dependent variable is not a continuous variable ((Mertler and Vannatta, 2016)). This means that the dependent variable is categorical with two or more values. The basic fundamentals of the multiple regression require that several variables be regressed against another using one of the several selection processes and this is the same for logistic regression (ibid). They primary difference between the multiple regression and logistic regression is in the interpretation of the resultant equation. A standard regression is made up of the sum of the products of weights and actual values on numerous independent variables in order to predict the values on the dependent variable ((Mertler and Vannatta, 2016)). The logistic regression on the other hand provides the probability, which ranges from 0 to 1. Therefore, the logistic regression will provide the probability of the occurrence of a particular outcome considering the presented independent variables. Below is the model used to determine the probable effect that RDP housing has on overall life satisfaction, including independent variables which will be used to determine the overall life satisfaction.

$$Y(overall\ life\ satisfaction\ (k)) = In(\beta_0 + \beta_1 x1 + \beta_2 x2 + \beta_3 x3 + \beta_4 x4 + \beta_5 x5 + \beta_6 x6 + \beta_7 x7 + \beta_8 x8 + \beta_9 x9 + \beta_{10} x10)$$

The overall life satisfaction will serve as the dependent variable in the model. It will be measured across five different time frames (2009, 2011, 2013, 2015 and 2018) to evaluate the interaction of the indicators with overall life satisfaction. The $\beta_0$ represents the intercept where the regression plane intersects the Y-axis and the other *b's* represent the coefficients on the regression plane in the direction of the X-axis. The X's represent the various dimensions (independent variables) which contribute to the investigation of the

interaction with the dependent variable (overall life satisfaction). The primary indicator used to answer the research question of this paper, is housing ownership. Therefore, primary focus will be directed towards understanding the probable effect of the RDP housing on overall life satisfaction. The data will be run through the SPSS software, where the statistical analysis will be done and results produced for discussion.

### 3.3.2 Data Collection Methods

The data used in the study is secondary data sourced from the GCRO's Quality of Life Surveys, which are conducted bi-annually since 2009. The data is collected with digital instruments using various technological instruments and software such as Formhub. The questionnaire used to conduct fieldwork is compiled by the GCRO and uploaded/submitted onto the online platforms. The information/ responses are recorded onto the platform, using internet connectivity; the information is saved on a cloud. Here it can be accessed and downloaded online (Gauteng City Region Observatory, 2014). Considering the broad context of the Quality of Life survey, this paper will seek to only include RDP housing under the ownership indicator in order to answer the research question of this study.

The GCRO was able to attain more localized areas through the usage of Small area Level (SAL) polygons which were obtained from the Population Census Enumerator Area (EA) polygons (Gauteng City Region Observatory, 2014), only in the third Quality of Life survey. The localized sample selection also ensures that the best population coverage within each ward in the Gauteng City-Region (ibid). This enables a more accurate representation of the sample regarding the population and the spread of across the municipal and ward level.

### 3.3.3 Quality of Life (QoL) Survey Sample Description

The surveys all have varied sampling methods which enable a diverse and unique population sample bi-annually. The following descriptions provided below are descriptions of each QoL survey sampling method. The sampling methods are different for all the quality of life surveys, as a result of the various themes the GCRO attaches to the various surveys. These are important in tracking for any inaccuracies or discrepancies which may occur when dealing with the data or the results.

*QoL Survey I (2009): Data Collection Methods*

The GCRO partnered with DRA Global in developing the quantitative evaluation tool, which is the Quality of Life survey. The questionnaire was submitted to the DRA by the GCRO and reformatted to include a new layout and flow to the question structure. A pilot survey was used to test the tools (questionnaires) produced (GCRO, 2010). The fieldwork method was multi-stage cluster sampling because no sampling frame existed which covered all citizens in the country. The sample was derived at different stages with the wards selected first, the dwelling selected second and the selection of the participants being the third stage. The primary sampling units were wards and random starting points were used in the selection of the dwelling units. The sample unit had a total of 602 wards which were in four provinces, Gauteng had 448 wards, Mpumalanga had 72 wards, the Free State had 12 wards and North-West had 70 wards (Gauteng City Region Observatory, 2009).

The second phase consisted of teams in the field which were required to complete a certain number of interviews and this was dependent on the population size. Ward maps were attained, marked and numbered on the map. This enabled the random selection of locations as starting points. The fieldworker was expected to count 20 households from the starting point moving left and from there the interviews would commence from the 20$^{th}$ household. Then the next 20$^{th}$ household was selected and so forth. There were cases where the households rejected being interviewed but the fieldworker would then substitute it with the next house to the left. The third stage involved the selection of respondents, where a criterion was developed. The respondents could not be non-residents or visitors, could not be under the age of 18 years and in the event where a child-headed household occurred the oldest child would assume head of household (GCRO, 2009).

*QoL Survey II (2011): Data Collection Methods*

The second quality of life survey used sampling methodology which was broken up into four stages: generation of random starting points, stand selection, household selection, and respondent selection. The generation of the starting points was at the lowest level which was the ward level. Requirements were submitted by the GCRO and referred to as the initial sample frame (Gauteng City Region Observatory, 2011). The starting points had distance parameters for urban and peri-urban densification (ibid). Emphasis was placed on the GIS coordinates and locating individual households through random sampling. The primary tool used was the same questionnaire used in the first quality of life survey, with

a few additional questions. This was done to ensure the same or similar duration as the first quality of life survey.

The questionnaire was edited by Data World (Pty) to ensure optimal efficiency technology was used for the survey and the flow in questionnaire logic (Gauteng City Region Observatory, 2012). The survey was 20 pages long and it was broken down into 12 sections. Most of the response options were already pre-defined so as to make the use of coding techniques in the predefined set of answers. The technology used was the digital pen technology; it worked with a GPS enabled cell phone. One of the advantages of using this technology was the ease in the transferal of the data (responses) from the fieldwork to the office database (GCRO, 2012). This also allowed for the transferal of the location in which the survey was being conducted. The technology efficiently reduced capture time (ibid). Physical capturing (handwritten surveys) were only conducted when the data was not sent via the digital pen or when the survey was incomplete or not completed correctly.

*QoL Survey III (2013): Data Collection Methods*

There are 17 840 SAL's in Gauteng with no significant gaps or overlaps in between the polygons. The objective was to obtain a complete set of interviews for each randomly sampled SAL in the wards so that a certain number of interviews can be conducted per ward.

The population will be randomly sampled alongside the following considerations (Gcro.co.za, 2019):

- The smallest number of interviews conducted which fall in the District Municipalities (which was 30)
- Metropolitan Municipalities have double the number of minimum interviews (60 minimum interviews)
- The prescribed age for interviews in +18 per ward, therefore a standard number of interviews were calculated for each ward
- Where successful interviews were below the minimum (30 and 60 respectively), then the fieldworks would have to conduct more interviews to meet the requirement
- Gauteng has 10 municipalities that are subdivided into 508 wards. Using the SAL, the sample was well spread within the ward and around it

- The next stage involved the application of some parameters at the SAL level, in order to attain random samples of SALs in the range of calculated interviews required.
- In figure 4, SAL's across the province are identified and the selected SAL's are in blue, the light yellow SAL's represents those not sampled and the pink represents those SAL's sampled (Gcro.co.za, 2019).

The maps for each SAL and centroid were printed and displayed per polygon (GCRO, 2014). Fieldworkers were expected to randomly select a centroid with a dwelling in each centroid and attempt to interview the respondent. If the stand was not interviewed the interviewer needs to move in random directions in the street to the fourth stand from the first stand (on the other side of the street if possible. This was done until the required number of interviews was attained.

In every stand, a dwelling would be selected. Two dice were provided to all the fieldworkers. If there was more than one dwelling in a stand, dice would be rolled to determine the dwelling to be interviewed. If more than 6 dwellings existed in one stand then the attrition method is used, which divides the number of dwellings into subsets and then the dice are used to determine the subsets. The dwellings are further narrowed down into subsets until a final subset is reached through a final dice toss (GCRO, 2014). The study covers various dwelling types, flats and hostels are treated in the same manner as the occurrence of dwellings on the same stand. Once the dwelling is selected the household selection is the next stage.

If a dwelling has more than one household, the dice technique is used to determine which household the respondent was chosen (GCRO, 2014). Once the households are chosen, the respondent was selected and they need to be above the age of 18 years (except in the case of child-headed households) and excluding any visitors.

*QoL Survey IV (2015): Data Collection Methods*

The questionnaire was designed by the GCRO and that questionnaire had 228 questions and 224 of the questions were closed-ended and open-ended. Additionally, 32 questions had 'other specify' as a response option. There were 12 dimensions which were investigated in the survey. The dimensions included: Dwelling and household information, access to services, satisfaction with services; Migration into Gauteng; Community/suburb; Transport; Internet access and household characteristics; Public participation, satisfaction with government, social and political views/opinions; Personal life; Employment; Crime

and safety; Community participation, protest activity; Health; and Demographic and household information (GCRO, 2015). The questionnaire was further translated into Afrikaans, Sesotho, isiZulu, and isiXhosa in preparation for the interviews by professional linguistic and translation companies (Ibid).

The questionnaire was programmed using the SurveyToGo software which was conducted on the Dooblo platform. The platform supports question branching, skipping, looping and GPS location capturing (GCRO, 2015). In order to avoid a degree of bias during the interview, some similar questions are randomized, rather than asked in sequence. There are random logic checks throughout the interviews which are adjusted into the questionnaire to ensure the consistency of respondents. The software used was efficient in identifying the errors made while recording the responses of participants. There were coding changes which were made after the survey was conducted which and thus the data had some inaccuracies. This occurred with the age variable during the respondent selection process (Ibid).

*QoL Survey V (2018): Data Collection Methods*

The fifth QoL survey had drawn from past observations and experiences which the GCRO had to take into consideration in order to be progressive in research. The GCRO decided to combine with the technology and strategies of the ResearchGO partners to ensure the best quality and accuracy in data collection. Through transparency and collaborative approaches adopted for data collection, there is regular communication between the partners, daily report-backs and endless commitment to data integrity (GCRO, 2019). A Computer-Aided Personal Interviewing (CAPI) technique was used in the fieldwork, in which the interviews are conducted and reported on a digital electronic device, such as tablet. The introduction of CAPI with collaborated with backend database where the data is uploaded. An internet connection needed to be obtained to upload data. The ResearchGO provided GCRO with all the synchronized data online and collected GPS coordinates at the different stage of the interviews and further provided files of the raw data. Data accuracy and quality was of paramount importance when the data was collected. Data summaries were delivered to the GCRO on completion of the surveys.

The ResearchGO provided an application which was web-based and enabled fieldwork management, data collection and quality monitoring (GCRO, 2019). The application enables the interrogation and exporting of data and para-data for usage on other software. The home locations were submitted through the application as well, enabling

them to be viewed on the online platform. Fieldworkers were, therefore, able to access their interview locations through their mobile devices through the application. The application further groups fieldworkers into teams, schedules work, and monitor live, the surveys submitted, flagging those that have errors and those correctly completed.

There is a protocol for the collection of data in the field which involves a geofence and identification of the interview location and in-field random selection through first contact.

### 3.3.4 Dealing with Variables

This section discusses the variables associated with the quantification of the overall life satisfaction. Through unpacking the dependent and independent variables, the text will comparatively explore other significant QoL and overall life satisfaction studies and provide detail on the methods used to determine the overall life satisfaction. Statistical methods used to quantify the overall life satisfaction usually have discrepancies and some of the data is coded. The section will provide a clear understanding of the methods of the study.

## 3.4 Description of Variables

The variables which are used to determine the overall life satisfaction are extracted from the GCRO quality of life survey conducted bi-annually. The variables are categorized into 10 dimensions which include 58 indicators. In order to understand the quantification of the overall life satisfaction in the study, provided below is an overview of the dimensions. Objective dimensions will be discussed first, followed by the subjective dimensions and then the dependent variable will be described. Some of the variables (dimensions) have been combined according to their relevance to one another for the case of the study.

### 3.4.1 Objective Domains

The dimensions and indicators discussed below are the independent variables which will be used to represent the physical and tangible attributes used to quantify the overall life satisfaction.

- *Material Conditions*

  The material conditions dimension includes three subjects which are income, consumption and material conditions. The subjects included in the dimension

are objective indicators which are usually associated with economic status or economic security. **Income** includes the disposable income accessible to the household in total, income from social grants, the individual income of all members in the household, and any household debt or repayments (credit or loans) deducted from the household's income.

- *Economic Productivity and other Activity*

  This dimension involves an understanding of the status, quality, and quantity of employment per household, economic inactivity and other sources of income. The dimension further investigates the benefits involved with the employment status. The status of employment is categorized into numerical variables giving a range of options which cover the terms of employment and duration. This dimension is supplemented by subjective indicators to understand the interviewer's satisfaction with degree of productivity.

- *Health Status*

  The health dimension investigates the life expectancy at birth of the general population alongside the self-perceived health status, which supplements this dimension even though it is a subjective indicator. The enables the interviewer to explore aspects associated with healthcare cover, access to healthcare and unmet needs regarding health care.

- *Educational Dimension*

  There are three topics included in the analysis of the educational dimension. The dimension investigates the competencies and skills of all working individuals in the households interviewed. The quality of life survey further provides indicators on lifelong experience and the educational opportunities available. The objective indicator provides information on the attainment of any qualifications, degree, and duration of training and the degree of access to education by four-year-olds.

- *Dwelling Dimension*

  The QoL survey investigates the classification structure of the dwelling, the number of rooms, the government services provided within the dwelling (internet, water, waste disposal, and electricity) as well as the tenure status. The dimension identifies whether dwelling is being paid off through a loan,

whether it is an RDP house, fully owned and whether or not there are backyard rooms. Furthermore, the building materials are identified and the dimension is supplemented with subjective indicators which interpret the degree of satisfaction with the dwelling structure and location. Additionally the dimension investigates the various transport modes, difficulties, durations and destination associated with transport activity. This dimension is also further supplemented with subjective indicators to detail the significance of the attributes to the interviewees' well-being.

- *Community and Personal Security Dimension*
  This dimension significantly identifies crime issues, causes and most predominant critical problems affecting the safety of the locality or neighbourhood. This dimension points out the victimized persons within the household as well as the times the interviewee considers themselves to be safe.

### *3.4.2 Subjective Domains*

The dimensions and indicators discussed below provide insight into the personal perspective of the interviewees' well-being. The variables (dimensions) identify the degree of satisfaction the interviewee has with regards to some of the objective indicators and various socio-political and economic attributes.

- *Community and Physical Environment Dimension*
  The realm investigated by the indicators in this dimension includes understanding the degree of satisfaction with various family and community relationships, family time, time available for family and whether or not any child has been hungry in the household. Furthermore, the indicators investigate environmental quality with indicators that interpret the satisfaction with pollution (including noise) and whether or not the community has access to green and recreational spaces.

- *Global life Experience and Satisfaction Dimension*
  This dimension involves the exploration of the interviewees' satisfaction with their whole life, the degree of affection received influential community developments that have affected the overall outlook of their life and their perspective on the direction of the nation.

- *Leisure and Social Interaction Satisfaction Dimension*

  This dimension interprets the degree of satisfaction one has with the leisure time available, the obstacles hindering any social interactions and degree of satisfaction with recreational spaces available in the community.

- *Socio-Political and Governance Dimension*

  The socio-political dimension observes the degree of satisfaction with various political affairs relating to government. The overall performance and influence of government are investigated through multiple inquiries on fair elections, the satisfaction with various government spheres and agreement with policy implementations in the neighbourhood. Additionally the indicators used in this dimension further investigate the degree of satisfaction with infrastructure and basic services provided by government.

### *3.4.3 Life Satisfaction (Dependent Variable)*

The Overall Life Satisfaction is the dependent variable which is expressed as a function of the various independent variables (dimensions/domains). The overall life satisfaction variable is derived from the Quality of Life survey conducted by the GCRO bi-annually. Considering the interchangeable usage of the QoL and Overall Life satisfaction in literature, the study will consider some of the indicators used to determine QoL to establish applicability to the prediction of overall satisfaction.

## 3.5 Preparing for Analysis

This section details the various methods which are employed prior to the analysis of the data (cleaning, coding, and weighing purposes) and further discuss the type of regression model used in the analysis of the data. The section will conclude with a statistical model describes the relationship between the dependent and independent variables.

- *Dummy-Coding the Variables*

  In social science studies, the concept of coding refers to the analytical method where the data, both quantitative form and qualitative form are categorized for the facilitation of the study (CESSDA ERIC, 2018). The data which involves the objective and subjective dimensions are coded from non-numeric information into

numerical values which represent various responses to the questions from the Quality of Life Survey (ibid). Thus transforming the data from qualitative data to quantitative data to suit the quantitative study. This method responds to both open and closed-ended questions included in the QoL Survey (CESSDA ERIC, 2018). The coding of the dataset is done by the GCRO and will not be alternated in this study.

- *Weighting the variables*

  Social science research with surveys has to have a representative sample size. This sample size is subjective to errors relating to some populations being over-sampled and some under-sampled. Therefore, utilizing the statistical weighting technique will compensate for any sampling bias (CESSDA ERIC, 2018). The main purpose of assigning a weight is to reflect the relevance of data items based on the objectives of the study, therefore the data of this investigation will be weighted. Each of the interviewed cases is assigned coefficients that are utilized to multiply each case in order to obtain the desired characteristics of the sample (CESSDA ERIC, 2018). The type of weighting used in the study is the population size weighting technique because of the different groups represented by the dataset.

## 3.6 Conclusion

The identified variables (subjective and objective) which are described in this chapter are included in the dataset from the GCRO's Quality of Life Survey. The data is from all the quality of life surveys from 2009 – 2018. These variables will be analysed through the multinomial logistic regression analysis technique. The variable under scrutiny is the dwelling dimension (housing ownership indicator) which involves indicators identifying the households occupying RDP housing. The logit model will produce results which are presented in various statistical tables (Bors, 2018). The details of this chapter will guide the content of the chapters which discuss the descriptive statistics of the data and results of the model in relation to the study area and the various concepts discussed in chapter 2.

# CHAPTER 4

# STATISTICAL INTERPRETATION OF THE CONTEXT

## 4.1 Introduction

This chapter will provide the general statistical description of some variables before the analysis of the results of the Multinomial Logistic Regression model. I have discarded the observations with missing data and errors which will cause statistical inaccuracies. The chapter will further explore and describe the significant dependent variables. Through providing descriptive statistics on the study area, which are instrumental to the overall purpose of the study, the chapter will interpret and develop an explicit understanding of the context. The chapter will develop a synchronized comparison between the five Quality of Life Surveys conducted by the GCRO (Pty) Ltd, before providing concluding remarks.

## 4.2 Descriptive Statistics of the Study Area

The following section provides descriptive statistics on some of the variables which will be included in the study. The statistics will be focusing on the Gauteng municipalities and will exclude all places outside of the Gauteng province which are considered part of the Gauteng City-Region. The statistics are tabulated and represented in graphs to provide an overview of the context under investigation.

### 4.2.1 Contextual Descriptive Statistics

The Reconstruction and Development Programme of 1994/6 has developed numerous housing settlements since its arrival. The government stipulated that the programme would redress the inequalities experienced by South Africans, considering the oppressive system of Apartheid.  This section of the paper will discuss and describe the dataset in relation to the socio-economic context and RDP housing. Furthermore, statistical summaries will be tabulated and represented in graphs to provide clarity and comparison of the five quality of life surveys.

Table 4.1 identifies the frequencies of the municipalities, where the surveys were conducted. The surveyed municipalities include: City of Johannesburg, Ekurhuleni, Emfuleni, Lesedi, Midvaal, Merafong, Mogale City, Tshwane, and West Rand (which includes Randfontein and Westonaria as of 2011) local municipalities. The GCR covers a broader scope of localities than that of this study and considering contextual differences

in politics and governance of various locations, the localities and municipalities outside of Gauteng have not been included.

| Local Municipality | Frequency (QoL I - 2009) | Frequency (QoL II- 2011) | Frequency (QoL III - 2014) | Frequency (QoL IV - 2017) | Frequency (QoL V - 2019) |
|---|---|---|---|---|---|
| **Tshwane** | 744 | 3891 | 5959 | 5300 | 5031 |
| **Ekurhuleni** | 778 | 4356 | 5866 | 5512 | 5453 |
| **Johannesburg** | 938 | 5826 | 9201 | 8229 | 7950 |
| **Mogale City** | 82 | 523 | 726 | 768 | 637 |
| **Randfontein (Rand West)** | 46 | 219 | 308 | | |
| **Westonaria (Rand West)** | 18 | 216 | 221 | | |
| **Rand West** | | | | 513 | 449 |
| **Merafong City** | 54 | 341 | 398 | 387 | 311 |
| **Emfuleni** | 247 | 1105 | 1291 | 1355 | 1196 |
| **Midvaal** | 21 | 114 | 162 | 172 | 189 |
| **Lesedi** | 30 | 137 | 131 | 183 | 177 |
| **Total** | **2958** | **16 729** | **24 262** | **22419** | **21393** |

*Table 4.1: Shows the municipalities surveyed during the five Quality of Life surveys (2009, 2011, 2013, 2015 & 2018) excluding those outside the Gauteng Province*

The city of Johannesburg is home to four million, nine hundred and forty nine thousand, three hundred and forty six people and this is the biggest population out of all the municipalities included in the survey. Since the beginning of the quality of life survey in 2009, the city of Johannesburg has been leading with the number of respondents (32 144 respondents in total) throughout all five surveys. Johannesburg covers an area of 1 648 square kilometres with a density of 3 003 people per square kilometre. Ekurhuleni and Tshwane are second and third with total number of respondents (21 965 and 20 925 respectively) (Wazimap.co.za, 2019). The Ekurhuleni municipality covers an area of 1 979 square kilometres making it significantly larger than the city of Johannesburg, with a population of 3 379 104. The density of Ekurhuleni is 1 707 people per square kilometre making the municipality less densely populated in comparison to the City of Johannesburg (Wazimap.co.za, 2019). The City of Tshwane municipality has a population of 3 275 152 covering an area of 6 310 square kilometres, which makes the municipality bigger than the two municipalities holding the most respondents in the survey, yet accounting for the third biggest population (ibid). The Tshwane municipality has a density of 519 people per

kilometre, making it the least densely populated municipality in comparison to the City of Johannesburg and City of Ekurhuleni municipality (Wazimap.co.za, 2019).

Table 4.1 shows that there has been an increase in the number of respondents from the first to the third Quality of Life survey by 21 304 people. The fifth quality of life survey indicates a decrease from the third Quality of Life survey, in the number of respondents, by 2869 people. Table 4.1 further identifies the survey with the most responses as the third QoL survey which was conducted in 2014/5. The Randfontein municipality and Westonaria local municipality were merged into the Rand West City municipality due to mismanagement of resources relating to the local council (Tshwane.gov.za, 2015). The varied totals of the respondents of the various quality of life surveys will result in significant discrepancies in the results of the model. This will be further discussed in the following chapter when the model results and limitations are discussed.

Table 4.2 is a summary of the population groups included in the study from all five surveys. The population group with the highest number of respondents, for all five Quality of life Surveys, is Africans with 68 455 respondents. This population group accounts for 78% of the total number of respondents sampled. Coloureds and Whites account for 2483 and 13 625 respondents respectively, which accounts for 18% of the total number of respondents sampled. The number of population groups who have participated in the surveys, from 2009 -2015, can be identified to have been on the rise between the first and third QoL survey. After the third survey there is a significant decrease amongst African's and Whites participating in the Quality of Life surveys from 2015 – 2018, this could be due to the decrease in number of participants in the survey. In relation to population groups, are the various household experiences which will be based on the various population groups described in table 4.2.

| Pop. Group | Frequency (QoL I) | Frequency (QoL II) | Frequency (QoL III) | Frequency (QoL IV) | Frequency (QoL V) |
|---|---|---|---|---|---|
| **African** | 2127 | 12 950 | 18 688 | 17 718 | 16 972 |
| **Asian/Indian** | 57 | 549 | 704 | 544 | 520 |
| **Coloured** | 146 | 569 | 819 | 688 | 718 |
| **White** | 628 | 2660 | 3886 | 3424 | 3027 |
| **Other** | | | 165 | 45 | 155 |
| **Total** | **2958** | **16 729** | **24 262** | **22 419** | **21 393** |

*Table 4.2: Table showing the population group of respondents in all five Quality of Life Surveys*

### 4.2.2 Household Dynamics

The Quality of Life survey considers numerous housing characteristics across Gauteng when conducting the survey. This gives a robust explanatory description of the context in which the population groups exist. The various households in the sampled population will be discussed in this section according to tenure status, dwelling type, household safety, degree of dwelling satisfaction and household debt experienced. These details will be represented in graphs and some will be tabulated and attached in the annexure.

Table 4.3 provides a summary of the tenure status of the sampled population. The purpose of the paper is to determine the impact and likelihood of RDP housing determining the overall life satisfaction the recipients express. Therefore, a closer look at the dynamics affecting RDP recipients will create an enhanced perspective on the overall contributing factors to the recipients overall life satisfaction rating. The RDP recipients who were respondents to the survey account for 14.9% of the overall sampled population. The RDP recipient count, as respondents, has increased consistently since the first quality of life survey to the fifth by 2128 people. Whereas the other two categories have experienced increases and declines post the third quality of life survey. Therefore, the analysis of the contributing attributes to overall life satisfaction will be more significant in the fifth quality of life survey where the RDP recipients count is 16% of the total number of respondents.

| Ownership Status | QoL I | QoL II | QoL III | QoL IV | QoL V |
|---|---|---|---|---|---|
| **Owned, but paying off a bond** | 788 | 2778 | 3371 | 3266 | 2312 |
| **Owned, fully paid off** | 1510 | 4986 | 6627 | 6282 | 3638 |
| **Free RDP House** | 659 | 2057 | 3496 | 3411 | 3476 |
| **Shack (not paying rent)** | n/a | 1419 | 1091 | n/a | n/a |
| **Private Rental** | n/a | 1739 | 3190 | 4549 | n/a |
| **Other** | 1 | 3750 | 17 775 | 4911 | 11 967 |
| **Total** | **2958** | **16 729** | **24 262** | **22 419** | **21 393** |

*Table 4.3: Table showing the ownership status of the sampled population for all five years of the Quality of Life survey*

The relationship between life satisfaction and homeownership has various ambitious results considering studies by Rossi and Weber (1996), Rohe et.al (2002) and Bucchianeri

(2009). Rohe et.al (2002) concluded that homeownership provides particular benefits which include higher levels of individual well-being, while Rossi and Weber (1996) when studying the relationship of homeowners and renters concluded that homeowners are marginally happier than renters (Zumbro, 2013). The study by Bucchianeri (2009) did not find any evidence of a relationship between homeownership and life satisfaction. Rather it identified a negative association of homeownership with life satisfaction, which was explained by workload and time expenditure related to homeownership (Zumbro, 2013). This sets the tone for a point of inquiry with regards to the relationship between overall life satisfaction and homeownership, hence the provision of table 4.4 to give perspective on the overall life satisfaction from the respondents of the sampled population.

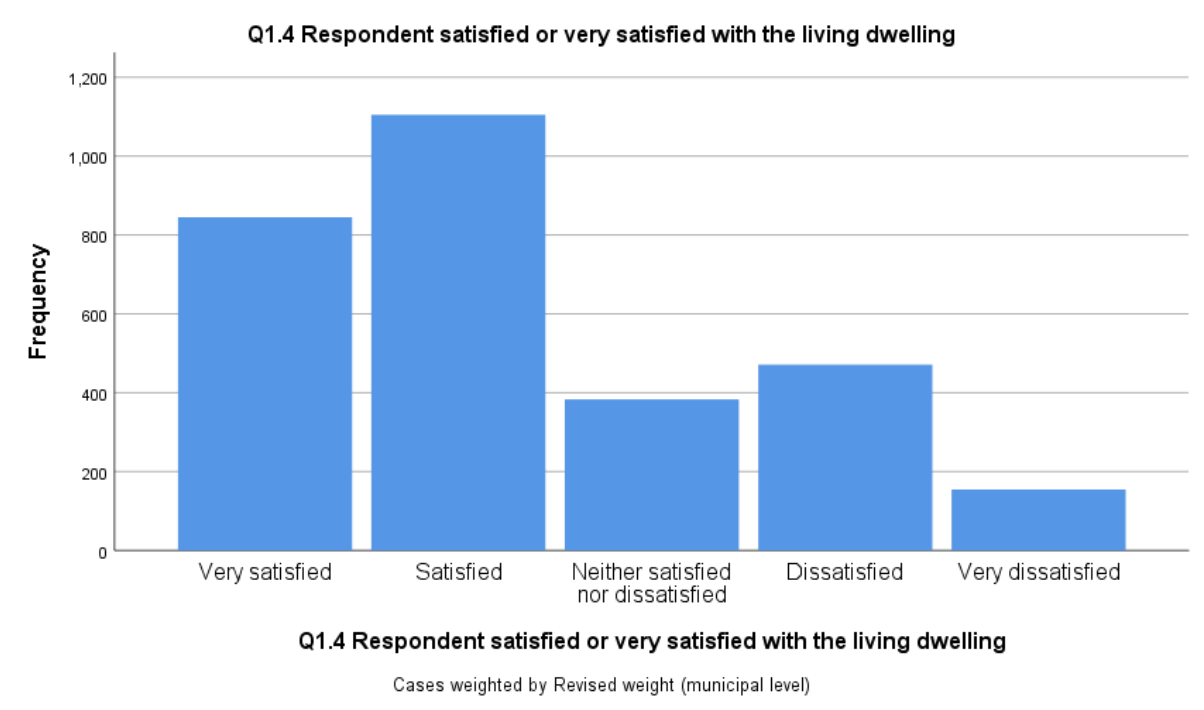
Table 4.4 provides a summary of the respondent's perspective on their overall life satisfaction. Sixty five percent of the respondents perceive their lives as satisfying; this may be due to various attributes contributing to their overall well-being. There are 18.6% of the respondents who declared they are dissatisfied and 15% of the respondents responded as being neutral to their perspective of their overall well-being. Considering that there are 55.4% of the respondents that own homes (regardless of whether they are paying off bonds or fully paid off their homes or received RDP housing), it can be assumed that the 65% of satisfied respondents encompasses a high percentage of homeowners. There are graphs in the annexure that provide the further statistics on the other housing ownership categories. The categories were excluded due to inconsistencies over the five years of the quality of life surveys, where some categories were included and some excluded. Thus this study will not consider all the categories.

| **Overall Life Satisfaction** | **QoL I** | **QoL II** | **QoL III** | **QoL IV** | **QoL V** | **Total** |
|---|---|---|---|---|---|---|
| **Satisfied** | 1677 | 10 583 | 17 140 | 14 360 | 14 151 | **57 911** |
| **Neutral** | 482 | 2420 | 2669 | 4504 | 3151 | **13 226** |
| **Dissatisfied** | 799 | 3455 | 4453 | 3555 | 4091 | **16 353** |
| **No Response** | | 271 | | | | **271** |
| **Total** | 2958 | 16 729 | 24262 | 22 419 | 21 393 | **87 761** |

*Table 4.4: Shows the number of respondents who rated their overall life satisfaction from the sampled population*

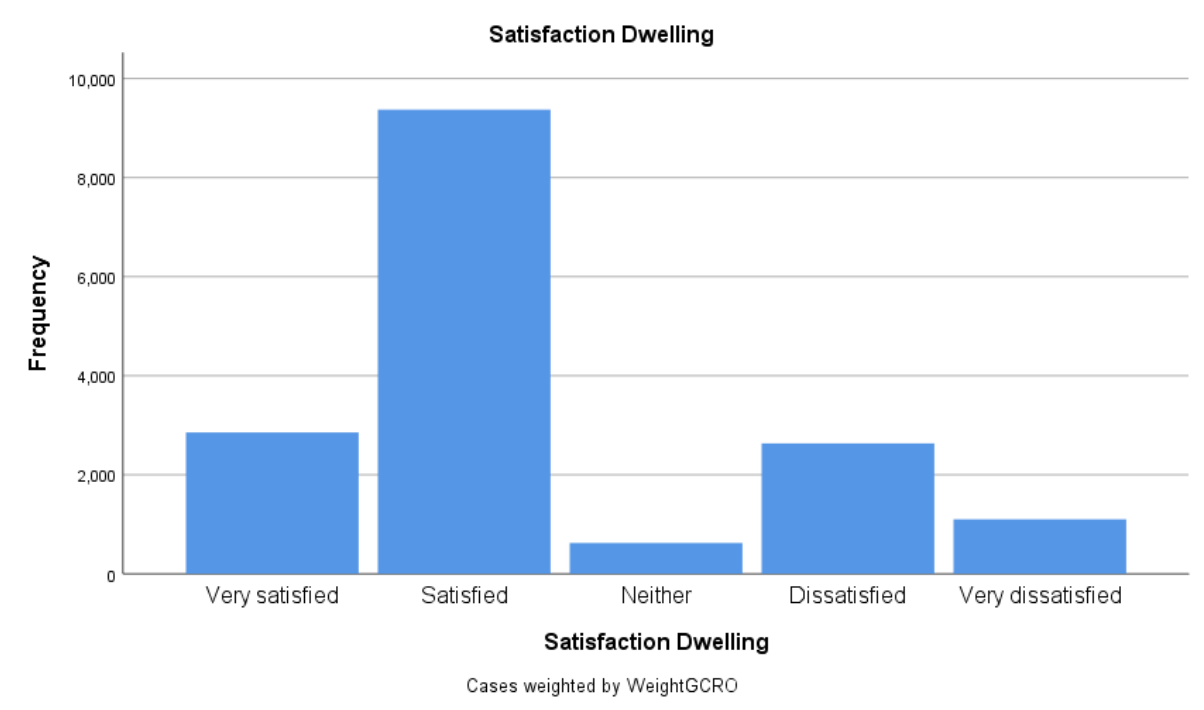
The type of dwelling most dominant across all five surveys is a house or formal structure on a separate stand. Secondary to this is the general overall satisfaction with dwelling from the five quality of life surveys, as per graph 4.1. The graph shows 37% (1105) of

respondents for the first quality of life survey were satisfied with their dwelling and 15.9% (471) were dissatisfied. An increase in the level of dwelling satisfaction is seen from the first quality of life survey to the fifth quality of life survey. The second survey identifies 56% (9373) respondents who are satisfied with their dwelling (see graph 4.2). This total amounts to an increase of 8263 respondents from the first quality of life survey. The dissatisfied population totalled at 2631 accounting for 15.7%, which is a 0.2% decrease from the first QoL survey.

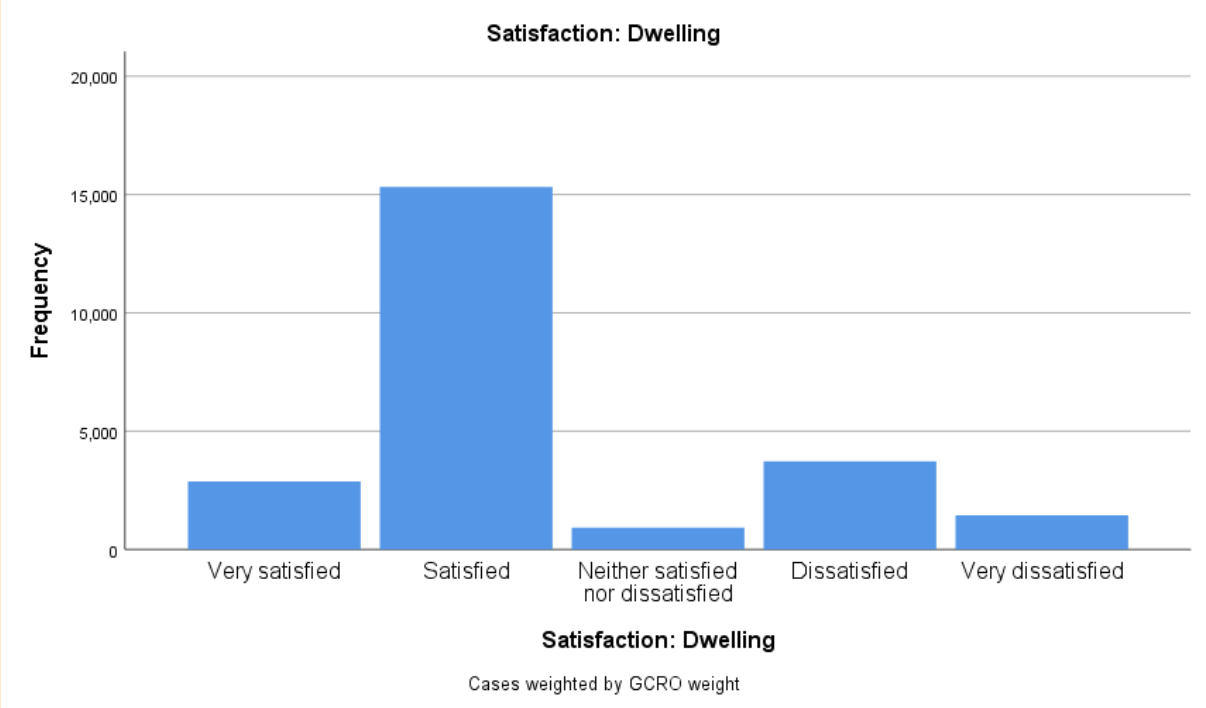



*Graph 4.1: Showing the respondent's response to dwelling satisfaction for the first QoL survey (2009)*

The third quality of life survey saw a staggering 63% (15 317) respondents (see graph 4.3), who were satisfied with their dwellings. The dissatisfied population decreased by 0.6% from the first quality of life survey, leaving 15.3% of the population dissatisfied with their dwellings.

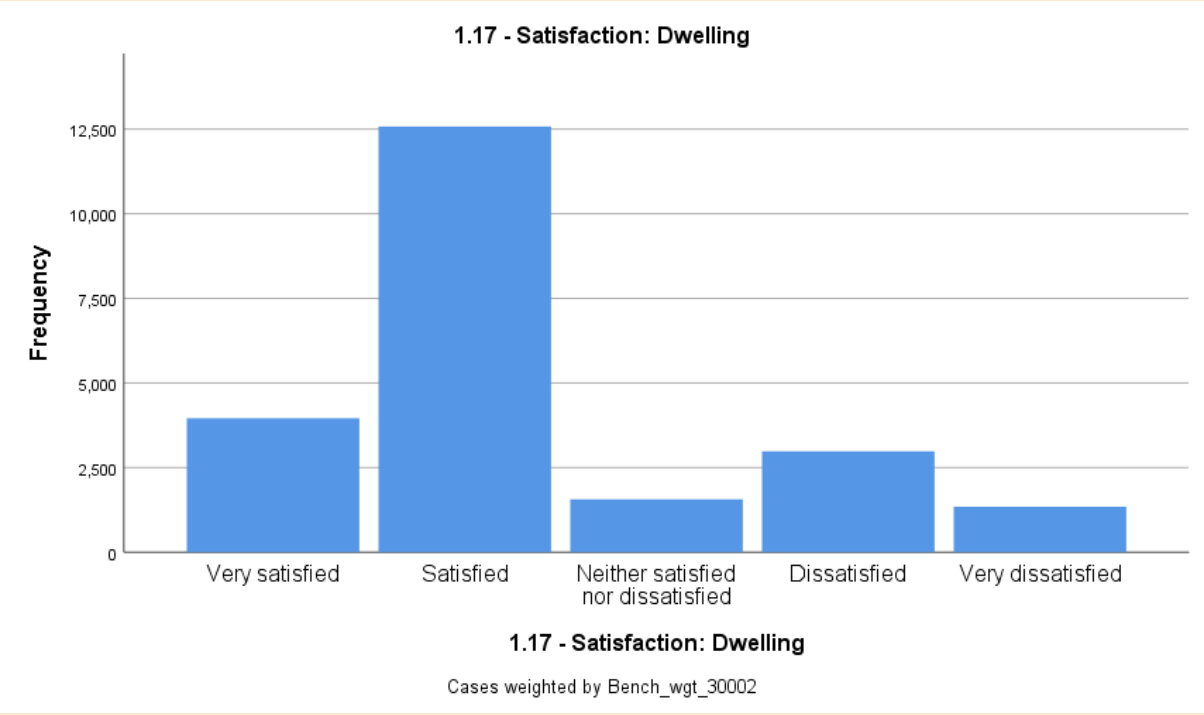



*Graph 4.2: Showing the respondent's response to dwelling satisfaction for the second QoL survey*

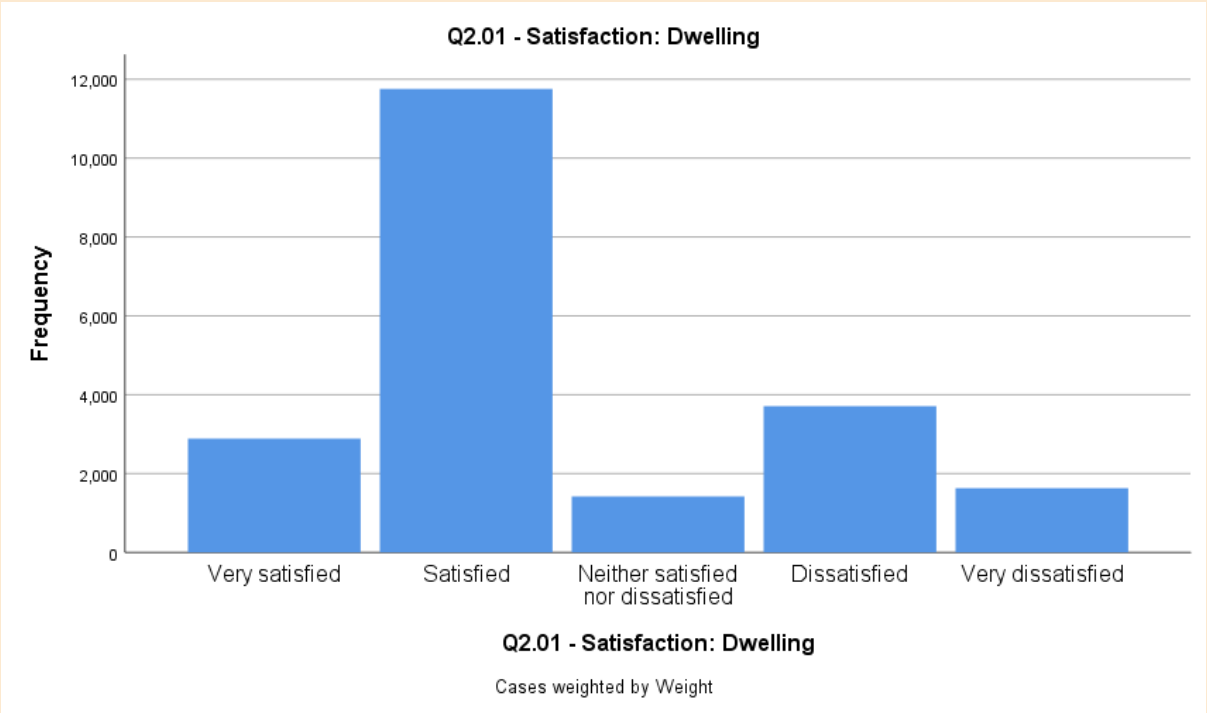



*Graph 4.3: Showing the respondent's response to dwelling satisfaction for the third QoL survey*

The forth quality of life survey identifies a decline in the total number of respondents satisfied with their dwellings (see graph 4.4). The satisfied respondents account for 56% (12 578) of the population which correlates with the decrease in total respondent's from the third to the forth quality of life survey (see table 4.1). The overall population that reported dissatisfaction with their dwellings decreased to 13% (2982) in the fourth quality of life survey, yet this is an increase in the number of dissatisfied respondents compared to the third quality of life survey. The fifth quality of life saw a decrease in respondents in the quality of life survey and this led to only 54% (11 756) of the population reporting that they were satisfied with their dwellings (see graph 4.5). This amounts to a difference of 3561 respondents between the third quality of life survey and the fifth one, with an increase in the number of respondents dissatisfied with their dwellings. 17% (3708) of the respondents in the survey reported dissatisfaction with their dwellings due to various reasons which be related to governance, household dynamics or any of the other variables which contribute to the respondents subjective perspective of their dwelling.




*Graph 4.4: Showing the respondent's response to dwelling satisfaction for the fourth QoL survey*




*Graph 4.5: Showing the respondent's response to dwelling satisfaction for the fifth QoL survey*

The household dynamics depict an overall increase in dwelling satisfaction before and during the third quality of life survey. Significantly, after the third QoL survey there is a significant decline in the number of respondents and the overall percentage of the respondent's satisfied with their dwellings. Furthermore, the satisfaction could be attributed to household assets, services, location, neighbourhood quality or improved governance (Charlton, 2013).

### 4.2.3 Economic Characteristics

One of the major previously perceived contributing variables to the quantification of overall life satisfaction, is the economic status of the individual or household. The relationship between homeownership and overall life satisfaction is primarily based on the household's ability to maintain or support the household costs (Zumbro, 2013). Thus this section covers the employment status, household income, service delivery and RDP recipient experiences of the sampled population.

Table 4.5 identifies the employment status of the number of employed persons in the sampled population. This table shows a positive linear relationship between the sampled population and number of employed respondents from the first survey (QoL I) to the third survey (QoL III). An increase in the number of respondents led to an increase in the number of employed respondents. The relationship changes in the fourth quality of life survey, here a decrease in the number of respondents led to a decrease in employed respondents, indicating a negative linear relationship. The missing data in table 4.5 is either due to respondents refusing to respond or the interviewer had skipped to a different question.

| | Frequency QoL I | Frequency QoL II | Frequency QoL III | Frequency QoL IV | Frequency QoL V |
|---|---|---|---|---|---|
| **Employed** | 1250 | 5923 | 10 524 | 6066 | 8491 |
| **Unemployed** | 908 | 5632 | 7119 | 5404 | 12 902 |
| **NEA** | 798 | n/a | n/a | n/a | n/a |
| **Other** | 0 | 5027 | 6620 | 10 948 | 0 |
| **Sub-Total** | 2956 | 16 582 | 24 262 | 22 419 | 21 393 |
| **Missing data** | 2 | 147 | 0 | 0 | 0 |
| **Total** | **2958** | **16 729** | **24 262** | **22 419** | **21 393** |

*Table 4.5: Showing the employment status of the sampled population from all five quality of life surveys*

There has been a fluctuation in the percentage of employed and unemployed respondents across all five quality of life surveys. The first and second had a 7% decrease in percentage of employed respondents and a 3% increase in the number of unemployed respondents. The second and third survey a large increase in the percentage of employed respondents with an 8% increase and 4% decrease in the percentage of unemployed respondents. The third and fourth survey showed a decrease in both the employed and unemployed respondents by 16% and 5%, respectively. Yet from the fourth to the fifth survey there is an increase in the percentage of employed and unemployed respondents by 12% and 26% respectively, regardless of the decrease in the number of respondents. Surprisingly the overall perception of the working population reported being satisfied with working conditions. This may be because the employed population is happy with their ability to meet their needs and take care of their well-being (Charlton, 2013). The regions in table 4.5 represented with *N/A* attribute to unavailability of the information in the questionnaires.

The average number of respondents identified their household monthly income as ranging between R1 601.00 – R3 200.00 and the percentage of the population accounting for this income range from the first QoL survey to the fifth QoL survey are as follows: 19.2%, 11.5%, 16.6%, 13.5% and 15.2% respectively. Numerous respondents refused to respond to the question hence the total number of respondents to this question is less than the number of overall respondents in all five Quality of Life. QoL I accounts for a total of 568 respondents, QoL II accounts for 1879 respondents, QoL III accounts for 4037 respondents, QoL IV accounts for 3087 and QoL V accounts for 3257. The percentage of respondents reporting as residing within this range has been fluctuating bi-annually for all five quality of life surveys. This is influenced by the fluctuating sampled populations across all five surveys and people refusing to respond. The number of respondents responding to earning more than R204 801.00 decreases from the first quality of life survey to the fifth quality of life survey. The first one only accounts for 0.63% of the total population, the second one accounts for 0.33%, the third one accounting for 0.18% and the fourth and fifth one accounting for 0.12% and 0.08% respectively. Annexure C provides the total monthly household income brought in by all the members of the household.

### 4.2.4 Service Delivery

The Reconstruction and Development Programme mandates for the rectification of the imbalances of the apartheid policy on land segregation and in doing, it has provided decent housing for the recipients (Greyling, 2009). Decent housing includes the formal housing structure and various services which need to be provided by the government within its available resources. The section below provides an account and description for the various services provided for the sampled population of the study.

*Water:*

There is a notable adequate supply of services in the sampled population of the first survey. This is identified through 98.4 % (2910) of the respondents having piped water into the dwelling or the yards. This minimises any struggles for transporting water from a nearby source (dam or river or public tap) and rather improves the well-being of the previously disadvantaged population. 1.6% (48) of the respondents reported that they received water from shared sources either from a street tap, borehole, rainwater or a dam. The second quality of life survey had about 91.7% (14 877) people who reporting that water was piped into their dwellings and the 8.3% (1347) reported that they shared water sources either through street taps, boreholes, rainwater, flowing river or dams. This

depicts an increase in the number of households receiving piped water in the second quality of life survey. Nonetheless, the overall percentage of piped water into the dwellings has decreased, probably due to sampling differences.

The third quality of life survey depicts a further decrease in the overall percentage of respondents that received piped water into their dwellings. 92% (22 078) said they received piped water into their dwellings and other 7% (1935) reported that they shared water in street taps, boreholes or used rainwater. The fourth quality of life survey reported about 92% (20 625) of the respondents receiving piped water and 7% (1679) of the sampled population using publicly accessible sources of water. The number of respondents reporting piped water into their dwellings had decreased in the fourth survey, yet the overall percentage of piped and publicly shared water sources had remained the same as the third quality of life survey. The last quality of life survey identified 91.4% (19 553) of the respondents having piped water into their dwellings and 7.8% (1624) reported having to use publicly available sources of water. Overall the sampled population is well serviced with water facilities. The differences in percentage of respondents with certain water resources can be attributed to the fluctuations in sampled populations.

*Toilet Facilities:*

Considering the toilet facilities, 90% of the households in all five quality of life surveys have been provided with full waterborne (flush toilets). The first quality of life survey reported that 95.4% (2821) of the respondent's utilized full waterborne flush toilets, the second quality of life survey identified 84.5% (13 461) of the respondents as using a flush toilet connected to a sewage system. The third quality of life survey provides that 80.5% (19 527) respondents were utilizing flush toilets which were connected to sewage systems. The number of respondents had increased from the first to the third quality of life survey hence an increase in the number of respondents with toilet facilities. Regardless of the increased number of respondents, the overall percentage of respondents with flush toilet facilities has decreased over time from the first survey to the third survey. The fourth survey proves that 85.5% (19 167) respondents use flush toilets yet 160 respondents have no access to toilets. The fourth quality of life survey was conducted in 2015/16 and that was 11 years post-democracy and the enactment of the RDP. Yet South African citizens still had no access to toilet facilities which is one of the basic services that local government needs to provide. This shortcoming may have been related to municipal resources being insufficient in providing adequate services. The fifth quality of life survey presents just above 83% (17 819) respondents which reported having flush toilets with

sewage system. This is a decrease in the overall percentage of respondents in the sampled population that have access to flush toilets.

*Refuse Disposal:*

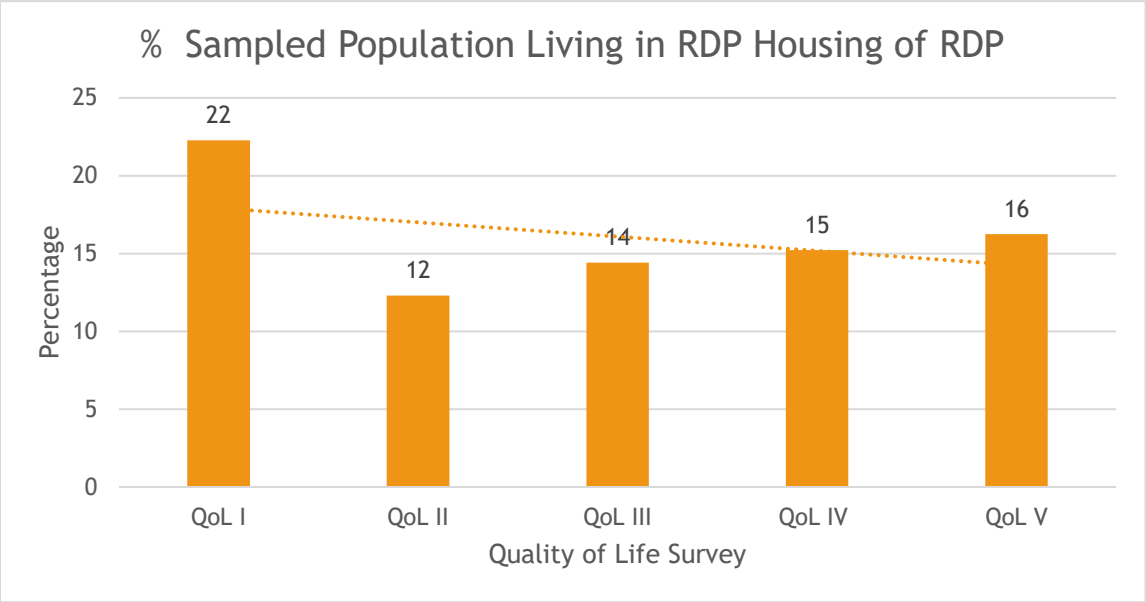
Considering the various refuse disposal services available to the respondents of the sampled population. Predominantly, refuse disposal is removed from the house at least once a week by local authority or contractors. About 94% (2760) of the respondents have access to the refuse disposal services weekly, from the first quality of life survey. The second survey represents 88.2% (14 505) of the respondents as having refuse removed from the household at least once a week. 1.7% (285) respondents reported to no refuse removal services at all and this is smaller than the population sampled from the previous survey which accounted for 3.2% (94) respondents with no refuse disposal services. The sampled population in the third quality of life survey provides more insight on how well the respondents are serviced with refuse disposal services. 87.2% (21 147) respondents accounted to having their refuse removed from the house at least once a week.

The fourth and fifth quality of life survey provides similar results to the three previous surveys. Eighty eight percent (19 724) and 83.1 % (17 777) respondents respectively, had refuse disposal services weekly. The fourth survey identified that 2.4% (536) respondents does not have any form of refuse disposal services. This shows an increase in the overall percentage of the respondents who did not receive any form of refuse disposal services and the number of respondents in comparison to the other three quality of life surveys. The fifth quality of life survey presents 4.5% (965) of the respondents throw their refuse in the street or veldt. This is more than the number of people who do not have any refuse disposal services, which accounts for 28% (594) respondents.

Overall the services provided for the sampled population are adequate enough to sustain the population and meet most of their basic needs. Even though some shortcomings exist, where respondents would use alternative methods to dispose rubbish, attain water and the usage of various toilet facilities, the majority of the sampled population receives adequate services. The statistical description of data identifies that the sampled population receives adequate service delivery.

### 4.2.5 RDP Recipients Satisfaction

Considering the data described in section 4.2.4 which provided a contextual interpretation of the study area and that of the sampled population, it is important to provide a linkage to the topic of the paper. This paper investigates the impact of RDP housing on the recipients' overall life satisfaction through using a logistic regression model. This section will therefore provide insight on the RDP housing recipient's perception on their overall life satisfaction.




*Graph 4.6: Showing the number of RDP housing recipients across all five quality of life surveys*

Graph 4.6 provides an account for the percentage of RDP recipients in the quality of life survey which is used to attain data to answer the main question of the paper. The data identifies a decrease in the percentage of RDP recipients as respondents, from the first to the fifth quality of life survey. The first survey accounts for 22% (659) of the respondents as RDP housing recipients and the second survey had 12% (2057). The third survey has 14% (3496) of the sampled population owning RDP housing and 15.2% (3411) of the respondents in the fourth quality of life survey were RDP recipients. The fifth quality of life survey presented about 16% (3476) of the respondents owning RDP housing. Overall there has been an increase in the percentage of RDP housing recipients participating in the QoL surveys from the decrease in the second quality of life survey.

Table 4.7 shows the responses of individuals with RDP housing when asked about their overall life satisfaction. The first quality of life survey identified 43% (288) of the respondents as dissatisfied with their overall well-being and 32% (212) of the respondents as satisfied with their overall well-being. This may have been related to the poor quality of housing or service delivery or inadequate attributes (subjective or objective)

contributing to the individual's perception of their overall well-being. The number of respondents changed in the second survey, where 57% (1192) of the RDP recipients reported to be satisfied with their overall well-being and only 25% (523) reported dissatisfaction.

| | Frequency QoL I (2009) | Frequency QoL II (2011/12) | Frequency QoL III (2014/15) | Frequency QoL IV (2015/16) | Frequency QoL V (2018) | Total |
|---|---|---|---|---|---|---|
| **Satisfied** | 212 | 1192 | 2228 | 2111 | 2111 | 7854 |
| **Neutral** | 159 | 312 | 407 | 658 | 611 | 2147 |
| **Dissatisfied** | 288 | 523 | 860 | 642 | 754 | 3067 |
| **No Response** | 0 | 30 | 0 | 0 | 0 | 30 |
| **Total** | **659** | **2057** | **3496** | **3411** | **3476** | **13 099** |

*Table 4.7: Shows the respondents who reported on their overall life satisfaction amongst RDP recipients*

The third quality of life survey provided the highest percentage of RDP housing recipients as respondents who are being satisfied with their overall well-being, at 63.7% (2228). The dissatisfied respondents accounted for 24% (860) which is a decrease in the overall dissatisfied respondents in the previous survey. The fourth quality of life survey identified a decrease in the number of respondents reporting satisfaction with their overall well-being and the decrease equated to 61% (2111). Significantly, the respondents who reported dissatisfaction accounted to about 19% (642) of the respondents, which is a decrease in comparison to the previous quality of life survey.

The last quality of life survey shows an equivalent number of respondents 60% (2111) as the fourth survey. Yet the overall satisfaction percentage accounts for only 60% of the RDP recipients, which a slight decrease from the previous survey. The RDP housing recipients have generally been satisfied with their overall well-being. This is due to various aspects which have been unpacked in the local and international studies discussed in chapter 2. Therefore, the primary interest and focus of this chapter is directed towards understanding whether or not RDP housing can be used to determine the likelihood that an individual would be satisfied with the well-being.

## 4.3 Conclusion

The context dynamics of the Gauteng, which is part of the Gauteng City-Region, enable an insightful perspective of the context to be studied. The domains covered in this chapter enable one to see the improvement and deterioration of the respondents' living conditions, economic status and service delivery. The RDP housing recipients have quite a positive perception of their overall lives judging from the satisfactory responses. Overall the context seems to be well serviced and located within areas that have adequate services. The following chapter will introduce methods of analysis that will establish the significant attributes and domains the influence ones perception of their overall well-being.

# CHAPTER 5

# FINDINGS OF THE STUDY

## 5.1 Introduction

This chapter will present the results of the Multinomial Logistic Regression model. The tables included in the chapter reveal variables which are significant in determining the impact of tenure status of RDP housing on the overall life satisfaction. The significant values will be examined from the case processing tables, the model fitting tables, the goodness-of-fit tables where the Pearson's and Deviance chi-square tests are analysed, Likelihood Ratio Tests, Parameter Estimates tables and the classification tables. The concluding section will discuss the possible speculative reasons for the outcomes of the model.

## 5.2 Results from the Model

The preceding information is structured in such a manner that the models are run for all the five quality of life surveys. The structure will enable flow and comparison amongst the various results produced from the multinomial logistic regression model on SPSS. The statistical tests will indicate the various probable relationships between the independent and dependent variable categories. Furthermore, only the significant variables will be outlined in this section and the non-significant variables will be discussed in the discussion in chapter 6. The tables below provide a summary of the output tables from the SPSS software and the full output tables will be attached in Annexure D. The model used to run the subjective and objective variables on the regression is presented below:

$$Y(overall\ life\ satisfaction\ (k)) = In(\beta_0 + \beta_1 x1 + \beta_2 x2 + \beta_3 x3 + \beta_4 x4 + \beta_5 x5 + \beta_6 x6 + \beta_7 x7 + \beta_8 x8 + \beta_9 x9 + \beta_{10} x10)$$

This model will assist when making reference to the variables and co-efficient values in the section below. Remember, the x variables in the model are representative of the domains included which help determine overall life satisfaction. This model will be run five times for all the quality of life survey and the variables include: material conditions, dwelling ownership, location, productivity, economic security, education, health, infrastructure, natural living environment, governance, basic services, leisure, community and personal safety. These variables will be discussed under the subjective and objective domains.

*QoL I (2009): Results from Multinomial Logistic Regression*

| Case Processing Summary | | |
|---|---|---|
| **Overall Life Satisfaction (DV)** | **N (Number of Observations)** | **Marginal Percentage** |
| **Satisfied** | 856 | 69.1% |
| **Neutral** | 175 | 14.1% |
| **Dissatisfied** | 209 | 16.8% |
| **Valid Cases** | 1240 | |
| | | |
| **Ownership/Tenure Status (IV)** | **N (Number of Observations)** | **Marginal Percentage** |
| **Owned but paying off a bond** | 494 | 39.8% |
| **Owned, fully paid off** | 567 | 45.8% |
| **Free RDP House** | 179 | 14.4% |
| **Valid Cases** | 1240 | |

*Table 5.1: Showing the case processing summary for QoL survey 1 (2009)*

The case processing summary (see table 5.1) provides the valid number of cases observed considering the dependent variable and the factored independent variable, which is ownership or tenure status. There are 1240 dependent variable observations which factor in the ownership variable. There are 856, 175 and 209 cases of satisfied, neutral and dissatisfied respondents, included in the model. Therefore, the following model fitting information will be a comparison between the null hypothesis and the full (final) model (Crowson, 2019).

Table 5.2 provides the likelihood ratio tests which serve as a comparison between the full model (with all the predictors) and the null model (intercept only model) (Crowson, 2019). The p value is conventional estimated at .05 in order to establish significance of the model and in this case the full model (final model) attains significance due to the p value = .000.

| Model Fitting Information | | | |
|---|---|---|---|
| **Likelihood Ratio Tests** | | | |
| **Model** | **Chi-Square** | ***df*** | **P Value** |
| **Intercept Only** | | | |
| **Final Model** | 693.443 | 40 | .000 |

*Table 5.2: Shows the model fitting information table of QoL survey 1 (2009)*

The goodness-of-fit table (see table 5.3) contains the deviance and Pearson chi-square tests, which are useful for determining whether a model exhibits good fit to the data (Crowson, 2019). The tests do not always agree as the case for the first quality of life dataset. The Pearson's p value is conventionally expected to be above .05 to in order for the model to be considered significant and in this case the p value = .000 which indicates that the model does not fit the data. Yet the Deviance chi-square test indicates a good fit

of the model to the data with a p value = 1. These two tests do not always correspond with one another but this study will consider the deviance test.

| Goodness-of-Fit | | | |
|---|---|---|---|
| | **Chi-Square** | ***df*** | **P value** |
| **Pearson** | 3324.375 | 2240 | .000 |
| **Deviance** | 1368.586 | 2240 | 1.000 |

*Table 5.3: Showing goodness of fit information for QoL survey 1 (2009)*

The results from the likelihood ratio tests (see table 5.4) provides the overall contribution of each independent variable to the model (Crowson, 2019). The tenure/ownership variable is added as a factor in the multinomial logistic regression, which means that the results are treated as an omnibus test of that factor. Using the threshold of $\alpha = .05$, there are eight significant predictors in the model, which are Community Meetings, Safety, Services, Satisfaction with working conditions, government, money, Leisure time and Dwelling. All these independent variables have $\alpha < .05$. Table 5.4 provides a summary of the output from the multinomial logistic regression model with a focus on the significant independent variables. The independent variables which were emphasized in literature as significant include the significant pones in this study (see table 5.4). These variables are Community Meetings Safety, Services, and Satisfaction with working conditions, government, money, family, leisure and dwelling. Annexure C contains all the statistical test and tables summarised in this chapter.

| Likelihood Ratio | | |
|---|---|---|
| **Effect** | ***df*** | **P- Value** |
| **Intercept** | 0 | . |
| **Local Municipality** | 2 | .325 |
| **Total Income** | 2 | .803 |
| **Community Meetings** | 2 | .001 |
| **Medical Care** | 2 | .258 |
| **Safety** | 2 | .000 |
| **Household Assets** | 2 | .124 |
| **Household debt** | 2 | .054 |
| **Public Transport Access** | 2 | .621 |
| **Education** | 2 | .702 |
| **Employment status** | 2 | .478 |
| **Services** | 2 | .012 |
| **Tenure/Ownership** | 2 | .385 |
| **Satisfaction with working conditions** | 2 | .000 |
| **Satisfaction with government** | 2 | .010 |

| | | |
|---|---|---|
| **Satisfaction with money** | 2 | .000 |
| **Satisfaction with family time** | 2 | .076 |
| **Satisfaction with Leisure time** | 2 | .000 |
| **Satisfaction with Dwelling** | 2 | .000 |

*Table 5.4: Showing the likelihood ratio results for QoL survey 1 (2009)*

The parameter estimate table (see table 5.5) provides a comparison between each of the two responses (neutral and dissatisfied) against the reference category (satisfied respondents). The regression coefficients indicate which independent variables significantly discriminate between the neutral and satisfied respondents and between those who responded as dissatisfied against those who responded as satisfied (Crowson, 2019). The B column consists of the regression coefficients and the Exp (B) column contains the odd ratio. The first set of coefficients represents the comparison between satisfied and neutral respondents.

| **Parameter Estimates** | | | |
|---|---|---|---|
| Overall Life Satisfaction[a] | **B (Coefficient)** | **P value (Sig.)** | **Exp(B) (odds ratio)** |
| ***Neutral*** | | | |
| Intercept | -7.275 | .000 | |
| Satisfaction with dwelling | -.026 | .000 | .975 |
| Satisfaction with leisure time | .405 | .001 | 1.500 |
| Satisfaction with income | .323 | .001 | 1.382 |
| Satisfaction with Working Conditions | .484 | .000 | 1.622 |
| Services | -.249 | .034 | 1.282 |
| Location | .026 | .522 | .975 |
| Total Household Income | .019 | .627 | 1.019 |
| Health | .022 | .856 | 1.022 |
| Tenure/Ownership (Free RDP = 3) | 0 | . | . |
| Employment Status | -.069 | .908 | .933 |
| ***Dissatisfied*** | | | |
| Intercept | -16.360 | .000 | |
| Satisfaction with dwelling | .393 | .000 | 1.481 |
| Community Meetings | -.589 | .014 | .555 |

| | | | |
|---|---|---|---|
| Satisfaction with leisure time | .454 | .000 | 1.575 |
| Satisfaction with family time | .273 | .032 | 1.314 |
| Satisfaction with money | .839 | .000 | 2.314 |
| Satisfaction with Gov. | .251 | .030 | 1.285 |
| Safety | .546 | .000 | 1.726 |
| Household Assets | 2.079 | .043 | 8.000 |
| Household Debt | .607 | .017 | 1.835 |
| Satisfaction with working conditions | .772 | .000 | 2.165 |
| Services | .351 | .006 | 1.420 |
| Total Household Income | -.011 | .794 | .989 |
| Health | .211 | .110 | 1.235 |
| Tenure/Ownership (Free RDP=3) | 0[b] | . | . |
| Employment Status | .487 | .308 | 1.1628 |

*Note: a - represents the reference category: Satisfied; b - represents the redundant variables thus not considered in the model.*

*Table 5.5: Showing the parameter estimates of QoL survey 1 (2009)*

There are five significant independent variables in the model, all with a p value less than .05 (Satisfaction with dwelling, leisure time, income, Working Conditions and Services provided). A respondent who has a higher level of satisfaction with their dwelling and has more services is less likely to be neutral about their overall life satisfaction and is thus more likely to be satisfied. This is interpreted from the sign (+/-) in front of the B coefficient. The remaining independent variables which are significant (Satisfaction with leisure time, income and working conditions) have a positive B coefficient which predicts that scoring higher in these variables will more likely have respondents being neutral with their perception of their overall life satisfaction, rather than being satisfied.

An odds ration > 1 indicates that there is more of a chance that one would choose the reference group over the comparison group. An odds ratio < 1 represents a less likely chance that one would choose the reference group compared to the comparison group (Crowson, 2019). The odds ratio of .975 indicates that for a unit increase in dwelling satisfaction, the odds of a respondent being neutral change by .975, meaning that a respondent is less likely to respond as satisfied. Therefore, the odds of 1.282 for services indicates that for every unit increase in services delivered, the odds of being neutral change by 1.282, which means the odds increase and respondent is more likely to respond as satisfied. Considering that these variables (satisfaction with leisure time, income and working conditions) have odds ratios higher than one, one unit increase results in a change

by 1.500, 1.382 and 1.622, respectively. When such a case occurs it means that the odds of a respondent responding neutral to their overall satisfaction increases. The rest of the independent variables in the model were insignificant (see Annexure D). The second set of coefficients compares the reference group (satisfied) with the dissatisfied responses. There are 11 significant variables which are satisfaction with dwelling, leisure time, family time, money, government, working conditions, services, community meetings, safety, household assets, and household debt. The only variable which has an odds ratio < 1 is community meetings which mean that respondents who are attend community meetings often are less likely to respond as dissatisfied. This is also supported by the b coefficient having a negative sign (-.589). The other 10 variables show a different relationship with dissatisfaction and the reference group. Satisfaction with dwelling (1.481), leisure time (1.575), family time (1.314), money (2.314), government (1.285), working conditions (2.165), safety (1.726), household assets (8.000), and household debt (1.835) have odds ratios > 1 thus have a higher likelihood of determining dissatisfied respondents than satisfied respondents with every unit decrease in the variables.

The classification table determines which response category was best predicted by the model (Crowson, 2019). Respondents which were satisfied with their overall well-being are correctly predicted by the model at 93.7% of the time and the dissatisfied respondents were predicted correctly 67.3% of the time by the model. The poorly predicted respondents were those who responded neutral; they were predicted at 13.7% of the time by the model.

| **Classification** | | | | |
|---|---|---|---|---|
| **Observed** | **Predicted** | | | |
| | **Satisfied** | **Neutral** | **Dissatisfied** | **Percent Correct** |
| **Satisfied** | 802.84960 | 16.10450 | 38.29600 | 93.7% |
| **Neutral** | 121.47030 | 23.95510 | 29.36520 | 13.7% |
| **Dissatisfied** | 56.68510 | 11.63580 | 140.68280 | 67.3% |
| **Overall Percentage** | 79.0% | 4.2% | 16.8% | 78.0% |

*Table 5.6: showing the classification table*

*QoL II (2011): Results from Multinomial Logistic Regression*

The Case Processing Summary table (table 5.7) shows the number and percentage of the respondents observed in each category of the dependent variable (overall life satisfaction). The independent variable (ownership/tenure status) is factored in because it is a significant variable to the study. The total number of respondents (3044) is less than the total survey (16 729) respondents due to some missing responses to overall life satisfaction. The missing data occurred as a result of missing responses or zero frequencies or empty spaces in the processing stage of the multinomial logistic regression.

| Case Processing Summary | | |
|---|---|---|
| **Overall Life Satisfaction (DV)** | **N (Number of Observations)** | **Marginal Percentage** |
| **Satisfied** | 2296 | 75% |
| **Neutral** | 382 | 12% |
| **Dissatisfied** | 366 | 12% |
| **Valid Cases** | 3044 | |
| | | |
| **Ownership/Tenure Status (IV)** | **N (Number of Observations)** | **Marginal Percentage** |
| **Owned but paying off a bond** | 1043 | 34% |
| **Owned, fully paid off** | 1129 | 37% |
| **Free RDP House** | 307 | 10% |
| **Private Rental** | 565 | 18% |
| **Valid Cases** | 3044 | |

*Table 5.7: showing case processing summary table for QoL survey 2 (2011)*

The model fitting table (table 5.8) shows the significance of the full model (final model), which considers all the independent variables against the intercept only model. The P value < .05, therefore the full model presents a significant fit over the null model. The goodness of fit table (table 5.9) shows the Pearson and Deviance chi-square tests which determine whether the model projects a good fit for the data. Non-significant results are indicators that the model fits the data well, meaning that the combination of subjective and objective indicators are good predictors of overall life satisfaction (Field, 2018; Petrucci, 2009). The results are not always equal but the Deviance chi-square test indicates a good fit (α=1.000).

| Model Fitting Information | | | |
|---|---|---|---|
| **Likelihood Ratio Tests** | | | |
| **Model** | **Chi-Square** | ***df*** | **P-Value (α)** |
| **Intercept Only** | | | |
| **Final Model** | 967.632 | 42 | .000 |

*Table 5.8: showing the model fitting information for QoL survey 2 (2011)*

| Goodness-of-Fit | | | |
|---|---|---|---|
| | **Chi-Square** | **df** | **Sig.** |
| **Pearson** | 6546.721 | 5570 | .000 |
| **Deviance** | 3466.707 | 5570 | 1.000 |

*Table 5.9: Showing goodness-of-fit for QoL survey 2 (2011)*

The likelihood ratio table (table 5.10) shows the overall contribution of each independent variable to the model. The threshold is α=.05 and there are nine significant variables (p-value < .05). The nine variables include use of public transport, employment status, services, tenure/ownership, and satisfaction with working conditions, money, health, leisure and dwelling.

| Likelihood Ratio | | |
|---|---|---|
| **Effect** | ***df*** | **P- Value** |
| **Intercept** | 0 | . |
| **Local Municipality** | 2 | .667 |
| **Total Income** | 2 | .063 |
| **Community Meetings** | 2 | .224 |
| **Medical Care** | 2 | .324 |
| **Safety** | 2 | .200 |
| **Household Assets** | 2 | .137 |
| **Public Transport Access** | 2 | .000 |
| **Education** | 2 | .549 |
| **Employment status** | 2 | .000 |
| **Services** | 2 | .022 |
| **Tenure/Ownership** | 2 | .000 |
| **Satisfaction with working conditions** | 2 | .000 |
| **Satisfaction with government** | 2 | .078 |
| **Satisfaction with money** | 2 | .000 |
| **Satisfaction with Leisure time** | 2 | .000 |
| **Satisfaction with Dwelling** | 2 | .013 |
| **Satisfaction with Services** | 2 | .064 |
| **Satisfaction with health** | 2 | .037 |

*Table 5.10: Showing likelihood ratio of QoL survey 2 (2011)*

The results of the parameter estimate table (table 5.11) involve a comparison between the reference category (satisfied) and the neutral and dissatisfied respondents. The regression coefficients show which independent variables significantly discriminate

between the satisfied and neutral responses. The first set of B co-efficient column presents a comparison between the neutral respondents and the satisfied respondents.

| Parameter Estimates | | | |
|---|---|---|---|
| Overall Life Satisfaction[a] | **B (Co-efficient)** | **P value (Sig.)** | **Exp (B) (Odds Ratio)** |
| ***Neutral*** | | | |
| Intercept | -6.519 | .000 | |
| Satisfaction with dwelling | 0.42 | .555 | 1.043 |
| Satisfaction with leisure time | .611 | .000 | 1.841 |
| Satisfaction with income | .282 | .000 | 1.326 |
| Satisfaction with Working Conditions | .228 | .022 | 1.081 |
| Services | -.121 | .211 | .886 |
| Location | .005 | .764 | 1.005 |
| Total Household Income | .034 | .058 | 1.034 |
| Satisfaction with Health | 0.77 | 0.52 | 1.034 |
| Tenure/Ownership (Free RDP = 3) | -.392 | .070 | .676 |
| Employment Status | .078 | 0.22 | 1.081 |
| | | | |
| ***Dissatisfied*** | | | |
| Intercept | -10.526 | .000 | |
| Satisfaction with dwelling | .206 | .003 | 1.228 |
| Community Meetings | .414 | 0.81 | 1.513 |
| Satisfaction with leisure time | .673 | .000 | 1.960 |
| Satisfaction with family time | | | |
| Satisfaction with money | .624 | .000 | 1.867 |
| Satisfaction with Gov. | .078 | .249 | 1.081 |
| Safety | .110 | .140 | 1.116 |
| Household Assets | -.597 | .094 | .551 |
| Satisfaction with working conditions | .303 | .000 | 1.354 |
| Services | .161 | .058 | 1.175 |
| Total Household Income | -.015 | .440 | .985 |
| Satisfaction with Health services | .077 | .052 | 1.080 |
| Health | -.103 | .227 | .902 |

| | | | |
|---|---|---|---|
| Tenure/Ownership (Free RDP=3) | -.392 | .070 | .676 |
| Employment Status | -.328 | .177 | .720 |

*Table 5.11: Showing the parameter estimates table for QoL 2 (2011)*

There are four significant independent variables in the model: Satisfaction with leisure, Satisfaction with income, Satisfaction with Working Conditions and Employment Status. The values show that with a higher level of satisfaction with leisure time, income, working conditions and employment status the respondents are more likely to be neutral about their overall life satisfaction. This is due to a positive B co-efficient, with increasing odds per unit increase of the variables. The dissatisfied category identifies four independent variables which are significant ($p < .05$) these include the following variables: Satisfaction with dwelling, leisure time, money and working conditions. The results shown are in comparison to the reference category (satisfied) and the relationship of the independent variables with the dependent variable (dissatisfied category) are the same as the neutral category. An increase in degree of satisfaction with the four variables is more likely to have respondent report dissatisfaction than satisfaction.

The classification table (table 5.12) shows that the satisfied category under the dependent variable was best predicted (96.2%), of the time. This is because 2207 of the 2295 people who responded as satisfied with their overall well-being were predicted to do so by the model [2207/ (2207+14+4) = .96] by the model. Dissatisfied respondents were predicted by the model 37.6% of the time. The respondents who responded as neutral were correctly predicted by the model 5% of the time and this is the poorest category predicted.

| **Classification** | | | | |
|---|---|---|---|---|
| **Observed** | **Predicted** | | | |
| | **Satisfied** | **Neutral** | **Dissatisfied** | **Percent Correct** |
| **Satisfied** | 2207 | 14 | 74 | 96.2% |
| **Neutral** | 313 | 20 | 50 | 5% |
| **Dissatisfied** | 209 | 20 | 137 | 37.6% |
| **Overall Percentage** | 89.6% | 1.8% | 8.6% | 77.7% |

*Table 5.12: showing the classification table of QoL survey 2 (2011)*

*QoL III (2013): Results from Multinomial Logistic Regression*

The case processing summary table (table 5.13) shows the number and percentage of observed cases in each category on the dependent variables as: Satisfied 7367, neutral 1105 and dissatisfied 1575. The valid observed cases amount to 10 047 because some cases

having zero frequencies with regards to the various responses recorded under the independent variables.

The likelihood ratio chi-square tests (see table 5.14) shows that the full model is significant and thus the null can be rejected because the full model with all the independent variables represents a significant fit over the null model (intercept only model). The goodness-of-fit table (table 5.15) shows that the Pearson and Deviance chi-

| Case Processing Summary | | |
|---|---|---|
| **Overall Life Satisfaction (DV)** | **N (Number of Observations)** | **Marginal Percentage** |
| **Satisfied** | 7367 | 73.3% |
| **Neutral** | 1105 | 11% |
| **Dissatisfied** | 1575 | 15.7% |
| **Valid Cases** | 10 047 | |
| | | |
| **Ownership/Tenure Status (IV)** | **N (Number of Observations)** | **Marginal Percentage** |
| **Owned but paying off a bond** | 1906 | 19% |
| **Owned, fully paid off** | 2222 | 22.1% |
| **Free RDP House** | 996 | 9.9% |
| **Private Rental** | 1721 | 17.1% |
| **Other** | 3202 | 31.8% |
| **Valid Cases** | 10 047 | 100% |

*Table 5.13: Showing case processing summary of QoL 3 of (2013)*

square tests which represent the model as a good fit to the data with p-values for both test being non- significant. Unlike the previous regression, these results agree with one another.

| Model Fitting Information | | | |
|---|---|---|---|
| **Likelihood Ratio Tests** | | | |
| **Model** | **Chi-Square** | ***df*** | **P-Value (α)** |
| **Intercept Only** | | | |
| **Final Model** | 2105.579 | 58 | .000 |

*Table 5.14: showing the model fitting information table of QoL 3 (2013)*

| Goodness-of-Fit | | | |
|---|---|---|---|
| | **Chi-Square** | ***df*** | **Sig.** |
| **Pearson** | 19 826.958 | 19 780 | .405 |
| **Deviance** | 13 171.017 | 19 780 | 1.000 |

*Table 5.15: Showing the goodness of fit table for QoL 3 (2013)*

The likelihood ratio tests table (table 5.16) identifies the overall contribution of each independent variable to the model and has identified 12 independent variables as significant. The significant variables include location, total household income, Safety, Household assets, public transport, and ownership, Satisfaction with working conditions, government, money, dwelling, leisure time and neighbourhood. The threshold remains constant at α = .05 thus the significance of the 12 variables.

| Likelihood Ratio | | |
|---|---|---|
| **Effect** | ***df*** | **P- Value (α)** |
| **Intercept** | 0 | |
| **Local Municipality** | 2 | .004 |
| **Total Income** | 2 | .000 |
| **Community Meetings** | 2 | .102 |
| **Medical Care** | | |
| **Safety** | 2 | .000 |
| **Household Assets** | 2 | .000 |
| **Public Transport Access** | 2 | .003 |
| **Education** | 2 | .940 |
| **Services** | 2 | .823 |
| **Tenure/Ownership** | 28 | .001 |
| **Satisfaction with working conditions** | 2 | .000 |
| **Satisfaction with government** | 2 | .000 |
| **Satisfaction with money** | 2 | .000 |
| **Satisfaction with Leisure time** | 2 | .000 |
| **Satisfaction with Dwelling** | 2 | .000 |
| **Satisfaction with Services** | 2 | .302 |
| **Satisfaction with Neighbourhood** | 2 | .000 |

*Table 5.16: Showing Likelihood ratio of QoL survey 3 (2013)*

The parameter estimates table (table 5.107) shows the comparison between the reference category (satisfied respondents) and each of the other categories in the dependent variable (neutral and dissatisfied). The first portion of results shows the B co-efficient column, the P-value and the Exp (B) or odds ratio for the likelihood outcome of neutral respondents in relation to satisfied respondents. The neutral category identifies 10 significant variables. An increase in the degree of satisfaction with leisure time means that a respondent is more likely to respond neutral to overall life satisfaction question. The odds ratio (Exp (B) = 1.635) shows that for every unit increase in the satisfaction with leisure time the odds of someone responding neutral change by 1.635 which means an increase in the odds. This comparison applies for satisfaction with money (Exp (B) =1.252) and working conditions (Exp (B) = 1.150) where the b co-efficient determines an increased likelihood towards the neutral response in the case of an increase in the degree of satisfaction for both variables and the odds ratio of neutral responses increases.

An increase in the number of household assets (Exp (B) = .930) means there is a less likely chance for respondents to respond neutral but rather there is a better chance for a prediction of satisfied responses, with decreasing chances by .930. Satisfaction with government (Exp (B) = 1.082) presents similar results to satisfaction with leisure time (Exp (B) = 1.635), money (Exp (B) = 1.252) and working conditions (Exp (B) = 1.150). The chance of an increase in satisfaction with the variables results in a more likely chance of respondents being neutral. The odds ratio also increases by 1.082, 1.635, 1.252, 1.150 per unit increase in satisfaction with government, leisure time, money and working conditions, respectively. The total household income (Exp (B) = 1.252) shows that a respondent is more likely to be neutral with increasing odds per unit increase in total household income. The tenure status (owned but paying of bond) (Exp (B) = .311) presents a less likelihood relationship that a respondent would be neutral and the odds ratio is set at .311 which is decreasing. This means that there is more of a chance that tenure status (owning but paying off bond) would have a satisfied response. Public transport (Exp (B) =1.218) and satisfaction with neighbourhood (Exp (B) = 1.289) have the same relation to in that there is an increased likelihood that the respondent may respondent neutral, with increasing odds ratios per unit increase. Community participation (Exp (B) = .862) is likely to predict a neutral response but more likely to predict satisfaction and the odds ratio is decreasing towards neutral responses.

| Parameter Estimates | | | |
|---|---|---|---|
| Overall Life Satisfaction[a] | **B (Co-efficient)** | **P value (Sig.)** | **Exp (B) (Odds Ratio)** |
| ***Neutral*** | | | |
| Intercept | .072 | .975 | |
| Satisfaction with dwelling | -.067 | .096 | .935 |
| Satisfaction with leisure time | .491 | .000 | 1.635 |
| Satisfaction with money | .224 | .000 | 1.252 |
| Satisfaction with Working Conditions | .140 | .000 | 1.150 |
| Household Assets | -.072 | .013 | .930 |
| Services | -.023 | .601 | .977 |
| Satisfaction with Gov. | .078 | .018 | 1.082 |
| Location | -.005 | .082 | .995 |
| Total Household Income | .224 | .000 | 1.252 |
| Safety | -.039 | .349 | .961 |
| Tenure/Ownership (owned, fully paid=1) | -1.168 | .029 | .311 |
| Tenure/Ownership (Free RDP = 3) | -.873 | .102 | .418 |
| Employment Status | -.003 | .874 | .997 |
| Public transport | .197 | .033 | 1.218 |
| Satisfaction with services | .092 | .193 | 1.097 |
| Satisfaction with Neighbourhood | .254 | .000 | 1.289 |
| Community Participation | -.148 | .040 | .862 |
| ***Dissatisfied*** | | | |
| Intercept | -.220 | .915 | |
| Satisfaction with dwelling | .113 | .001 | 1.119 |
| Community Meetings | -.060 | .348 | .942 |
| Satisfaction with leisure time | .615 | .000 | 1.849 |
| Satisfaction with family time | | | |
| Satisfaction with money | .374 | .000 | 1.454 |
| Satisfaction with Gov. | .220 | .000 | 1.247 |
| Safety | .221 | .000 | 1.248 |

| | | | |
|---|---|---|---|
| Household Assets | -.119 | .000 | .888 |
| Satisfaction with working conditions | .289 | .000 | 1.336 |
| Services | -.018 | .641 | .982 |
| Total Household Income | .374 | .000 | 1.454 |
| Satisfaction with services | -.031 | .630 | .970 |
| Tenure/Ownership (owned, fully paid=1) | -1.109 | .027 | .330 |
| Tenure/Ownership (Free RDP=3) | -.617 | .216 | .540 |
| Public Transport | -.183 | .042 | .833 |
| Satisfaction with Neighbourhood | .497 | .000 | 1.849 |
| Location | -.008 | .001 | .992 |

*Table 5.17: showing the parameter estimates table of QoL survey 3 (2013)*

The second set of coefficients (see table 5.17) represents the comparison between satisfied respondents and dissatisfied respondents. The following 7 significant variables have the same prediction relationship. The variables (Satisfaction with dwelling, Exp (B) = 1.119; leisure time, Exp (B) = 1.849; money, Exp (B) = 1.454; government, Exp (B) = 1.247; neighbourhood, Exp (B) = 1.849; working conditions, Exp (B) = 1.336 and safety, Exp (B) = 1.248,) show that there is an increased likelihood that the respondents will respond as neutral with an increase in the independent variables. The odds ratios further show that a unit increase results in an increasing change by the odds ratio values (Exp (B)). The following variables show the same relationship in the comparison between dissatisfied and satisfied respondents. The variables include: location (Exp (B) =.992), public transport (Exp (B) = .833), tenure/ownership for owned but paying off bond (Exp (B) = .330) and household assets (Exp (B) = .888). These variables have a less likely chance in determining whether a respondent will be dissatisfied with an increase in any of the independent variables and the odds ratios are less than 1 showing decreasing odds. This means that the variables are more likely to predict satisfaction of the respondents.

The classification table presents the group memberships which are best predicted by the model. Satisfied respondents are correctly predicted by the model 96.3% of the time. The neutral respondents are predicted 0.1% of the time and the

dissatisfied respondents are correctly predicted 30.5% of the time. The neutral respondent prediction is the poorest and is a result of the cases that were filtered out because of zero frequencies.

| Classification | | | | |
|---|---|---|---|---|
| **Observed** | **Predicted** | | | |
| | **Satisfied** | **Neutral** | **Dissatisfied** | **Percent Correct** |
| **Satisfied** | 7096.2363087110 | 1.1695861720 | 269.9509143630 | 96.3% |
| **Neutral** | 975.0736783660 | 1.4560711130 | 128.2849375660 | 0.1% |
| **Dissatisfied** | 1094.4575054000 | .5957934140 | 480.4021201330 | 30.5% |
| **Overall Percentage** | 91.2% | 0.0% | 8.7% | 75.4% |

*Table 5.18: showing the classification table of QoL survey 3 (2013)*

*QoL IV: Results from Multinomial Logistic Regression*

| Case Processing Summary | | |
|---|---|---|
| **Overall Life Satisfaction (DV)** | **N (Number of Observations)** | **Marginal Percentage** |
| **Satisfied** | 3068 | 67.8% |
| **Neutral** | 806 | 17.8% |
| **Dissatisfied** | 652 | 14.4% |
| **Valid Cases** | 4526 | |
| | | |
| **Ownership/Tenure Status (IV)** | **N (Number of Observations)** | **Marginal Percentage** |
| **Owned but paying off a bond** | 1299 | 40.3% |
| **Owned, fully paid off** | 1824 | 20.8% |
| **Free RDP House** | 942 | 5.6% |
| **Transfer of Title Deed for Gov. house** | 253 | 4.6% |
| **Occupation of vacant dwelling** | 208 | 4.6% |
| **Valid Cases** | 4526 | **100%** |

*Table 5.19: showing the case processing summary of QoL 4 (2015)*

The case processing table (table 4.19) accounts for 4526 cases observed in each category of the dependent variable. The number of cases recognized in the processing summary is 20% of the survey population. The highest percentage and number of cases occurs in the satisfied category (3068=67.8%). The model fitting information (see table 5.20) contains the likelihood ratio tests which compare the null to the full model with all predictors. The

threshold being α= .05, the full model (p = .000) is considered statistically significant because it represents the best fit over the null model.

| Model Fitting Information | | | |
|---|---|---|---|
| **Likelihood Ratio Tests** | | | |
| **Model** | **Chi-Square** | ***df*** | **P-Value (α)** |
| **Intercept Only** | | | |
| **Final Model** | 1212.923 | 38 | .000 |

*Table 5.20: Showing the model fitting information of QoL 4 (2015)*

The goodness-of-fit table (see table 5.21) shows that the model exhibits a good fit to the data due the non-significant test results from the Deviance chi-square test (p = 1.000). Non-significant test results are considered the best fit for the data (Crowson, 2019). The Pearson's chi-square test (p = .000) does not agree with the Deviance chi-square but the Deviance chi-square test will be considered as relevant in this study.

| Goodness-of-Fit | | | |
|---|---|---|---|
| | **Chi-Square** | **df** | **Sig.** |
| **Pearson** | 9446.569 | 8626 | .000 |
| **Deviance** | 6482.659 | 8626 | 1.000 |

*Table 5.21: Showing the Goodness of fit table for QoL 4 (2015)*

The overall contribution of each independent variable to the model is detailed in the likelihood ratio table (see table 5.22). Using the threshold of α =.05, the following 9 variables are considered statistically significant: community meetings, medical care, household assets, tenure/ownership, satisfaction with working conditions, neighbourhood, money, leisure time and dwelling.

| Likelihood Ratio | | |
|---|---|---|
| **Effect** | ***df*** | **P- Value** |
| **Intercept** | 0 | . |
| **Local Municipality** | 2 | .224 |

| | | |
|---|---|---|
| **Total Income** | 2 | .945 |
| **Community Meetings** | 2 | .006 |
| **Medical Care** | 2 | .000 |
| **Safety** | 2 | .062 |
| **Satisfaction with neighbourhood safety** | 2 | .330 |
| **Household Assets** | 2 | .000 |
| **Public Transport Access** | | |
| **Education** | | |
| **Employment status** | 2 | . |
| **Services** | 2 | .174 |
| **Tenure/Ownership** | 2 | .026 |
| **Satisfaction with working conditions** | 2 | .007 |
| **Satisfaction with neighbourhood** | 2 | .000 |
| **Satisfaction with money** | 2 | .000 |
| **Satisfaction with Leisure time** | 2 | .000 |
| **Satisfaction with Dwelling** | 2 | .001 |
| **Satisfaction with Services** | 2 | .064 |
| **Satisfaction with health** | 2 | .133 |

*Table 5.22: Showing the likelihood ratio table for QoL 4 (2015)*

The first set of coefficients involves a comparison of the reference category (satisfied respondents) and the neutral respondents. The significant independent variables in the first set include satisfaction with leisure time (Exp (B) =2.030), income (Exp (B) = .912), health (Exp (B) = 1.093), neighbourhood (Exp (B) = 1.624), tenure/ownership (Exp (B) = .566), household assets (Exp (B) = .373), community meetings (Exp (B) = .337). The variables that are considered significant have varied comparative likelihoods to the reference category. Satisfaction with leisure time, health and neighbourhood are each more likely to predict a neutral response than a satisfied response and the odds ratios for the variables for every unit increase changes by a factor of 2.030, 1.093 and 1.624 respectively. This means that the odds are increasing. The other four significant variables satisfaction with income, tenure/ownership status, household assets and community meetings are less likely to predict a neutral response and therefore a more likely to predict a satisfied response. The odds ratios of the variables for every unit increase change by .912, .566, .373 and .337 respectively, representing decreasing odds.

| **Parameter Estimates** | | | |
|---|---|---|---|
| **Overall Life Satisfaction[a]** | **B (Co-efficient)** | **P value (Sig.)** | **Exp (B) (Odds Ratio)** |
| ***Neutral*** | | | |

| | | | |
|---|---|---|---|
| Intercept | -3.521 | .000 | |
| Satisfaction with dwelling | .026 | .583 | 1.026 |
| Satisfaction with leisure time | .708 | .000 | 2.030 |
| Satisfaction with income | -.092 | .025 | .912 |
| Satisfaction with Working Conditions | .051 | .293 | 1.053 |
| Services | -.134 | .067 | .875. |
| Location | .002 | .934 | 1.002 |
| Total Household Income | .001 | .950 | 1.001 |
| Satisfaction with Health | .089 | .045 | 1.093 |
| Tenure/Ownership (Free RDP = 5) | -.570 | .014 | .566 |
| Tenure/Ownership (Free RDP = 1) | -.155 | .507 | .857 |
| Employment Status | . | . | . |
| Satisfaction with neighbourhood | .485 | .000 | 1.624 |
| Household Assets | -.985 | .000 | .373 |
| Community Meetings | -1.089 | .003 | .337 |
| ***Dissatisfied*** | | | |
| Intercept | -6.5000 | .000 | |
| Satisfaction with dwelling | .189 | .000 | 1.208 |
| Community Meetings | -.065 | .855 | .937 |
| Satisfaction with leisure time | .863 | .000 | 2.370 |
| Satisfaction with money | .175 | .000 | 1.191 |
| Satisfaction with neighbourhood | .708 | .000 | 2.029 |
| Satisfaction with Gov. | | | |
| Safety | .074 | .207 | 1.077 |
| Household Assets | -.598 | .021 | .550 |
| Satisfaction with working conditions | .163 | .002 | 1.177 |
| Services | -.034 | .656 | .967 |
| Total Household Income | -.003 | .767 | .997 |
| Satisfaction with Health services | .044 | .378 | 1.045 |
| Health | -.307 | .000 | .736 |
| Tenure/Ownership (Free RDP=5) | -.149 | .544 | .861 |
| Employment Status | . *a* | . | . |

*a - The parameter was set to zero because it is redundant*

*Table 5.23: Showing the parameter estimates of QoL 4 (2015)*

The second set of coefficients presents a comparison of the reference group (satisfied) and the dependent category dissatisfied. The five significant variables include satisfaction with dwelling, leisure time, money, neighbourhood, and working conditions are more likely to predict dissatisfaction than satisfaction of the respondent. Their odds ratios are greater than 1, therefore indicating increasing odds with a unit increase in each variable. The other two variables household assets and health are less likely to predict dissatisfaction and more likely to predict satisfaction.

The classification table (see table 5.24) provides statistics used to determine which dependent variables categories were best predicted by the model. The satisfied category is correctly predicted 94.8% of the time and the dissatisfied category is correctly predicted 33% of the time. The poorest prediction was of the neutral category with only 7.5% prediction.

| Classification | | | | |
|---|---|---|---|---|
| **Observed** | **Predicted** | | | |
| | **Satisfied** | **Neutral** | **Dissatisfied** | **Percent Correct** |
| **Satisfied** | 2907 | 31 | 130 | 94.8% |
| **Neutral** | 651 | 61 | 94 | 7.5% |
| **Dissatisfied** | 375 | 62 | 215 | 33.0% |
| **Overall Percentage** | 86.9% | 3.4% | 9.7% | 70.3% |

*Table 5.24: showing the classification information for QoL 4 (2015)*

### *QoL V: Results from Multinomial Logistic Regression*

The case processing summary table (see table 5.25) shows the total number and percentage of the observed cases as a total of 4369 which is 20% of the sampled survey population. The satisfied dependent variable category holds the biggest count at 3109, which 71.1% of the number of valid cases. The number of neutral and dissatisfied cases at 606 and 654 respectively, which account for 13.9% and 15%, respectively, of the valid cases.

| Case Processing Summary |
|---|

| Overall Life Satisfaction (DV) | N (Number of Cases) | Marginal Percentage |
|---|---|---|
| Satisfied | 3109 | 71.1% |
| Neutral | 606 | 13.9% |
| Dissatisfied | 654 | 15.0% |
| Valid Cases | 4369 | |
| | | |
| Ownership/Tenure Status (IV) | N (Number of Cases) | Marginal Percentage |
| Owned but paying off a bond | 1087 | 24.9% |
| Owned, fully paid off | 1302 | 29.8% |
| Free RDP House | 884 | 20.2% |
| Own family/individual funds | 487 | 11.1% |
| Other | 609 | 13.9% |
| Valid Cases | 4369 | |

*Table 5.24: Showing the case processing summary table for QoL survey 5 (2018)*

The model fitting information table (see table 5.26) identifies the full model (with all the predictors) as significant over the null model. The threshold for significance remains .05 and the final model presents a p value of .000 which identifies the model as significant.

| Model Fitting Information | | | |
|---|---|---|---|
| Likelihood Ratio Tests | | | |
| **Model** | **Chi-Square** | ***df*** | **P-Value (α)** |
| **Intercept Only** | | | |
| **Final Model** | 1116.070 | 48 | .000 |

*Table 5.25: Showing the model fitting table for QoL 5 (2018)*

The goodness-of-fit table (table 5.27) shows the model as not a good fit for the data under Pearson test results because p = .042 and the Deviance test identifies the model as a good fit for the data due to the non-significance of the p value (p= 1). Therefore the study will consider the deviance test over the Pearson test results.

| Goodness-of-Fit | | | |
|---|---|---|---|
| | **Chi-Square** | **df** | **Sig.** |
| **Pearson** | 8423.931 | 8202 | .042 |
| **Deviance** | 5881.199 | 8202 | 1.000 |

*Table 5.26: Showing the goodness of fit table for QoL survey 5 (2018)*

The likelihood ratio table (table 5.28) shows the overall contribution of each independent variable to the model. Using the threshold of .05, there are 10 significant variables with p value < .05. These variables include attendance to community meetings, medical care facilities, personal safety, and employment status, satisfaction with working conditions, neighbourhood, money, leisure time, dwelling and government.

| Likelihood Ratio | | |
|---|---|---|
| **Effect** | ***df*** | **P- Value** |
| **Intercept** | 0 | . |
| **Local Municipality** | 2 | .103 |
| **Total Income** | 2 | .981 |
| **Community Meetings** | 2 | .031 |
| **Medical Care** | 2 | .002 |
| **Safety** | 2 | .002 |
| **Satisfaction with neighbourhood safety** | 2 | .334 |
| **Household Assets** | 2 | .052 |
| **Employment status** | 2 | .005 |
| **Services** | 2 | .085 |
| **Tenure/Ownership** | 2 | .851 |
| **Satisfaction with working conditions** | 2 | .000 |
| **Satisfaction with neighbourhood** | 2 | .000 |
| **Satisfaction with money** | 2 | .000 |
| **Satisfaction with Leisure time** | 2 | .000 |
| **Satisfaction with Dwelling** | 2 | .000 |
| **Satisfaction with Services** | 2 | .434 |
| **Satisfaction with health** | 2 | .334 |
| **Satisfaction with Gov.** | 2 | .000 |

*Table 5.27: Showing the likelihood ratio table for QoL 5 (2018)*

The results of the parameter estimate table (see table 5.29) provides a comparison between each variable and the reference category (satisfied). The first set of variables are those associated with a neutral response. Considering the threshold of .05, the parameter estimate table shows significant 7 variables. Satisfaction of leisure time is more likely to predict a neutral response and the odds ratio is increasing. Therefore with a unit increase in leisure time, the odds change by 1.608. Satisfaction with dwelling is more likely to predict a neutral response than satisfaction with an increasing odds ratio per unit increase in degree of satisfaction. The change in odds is by 1.169 per unit increase in income. Personal safety and satisfaction with working conditions are more likely to predict neutral responses and with increasing odds ratios (1.223 and 1.143 respectively). The other three

variables share the same relationship as well: employment status (Exp (B) = 1.072), satisfaction with government (Exp (B) = 1.195) and neighbourhood (Exp (B) = 1.284).

| Parameter Estimates | | | |
|---|---|---|---|
| **Overall Life Satisfaction[a]** | **B (Co-efficient)** | **P value (Sig.)** | **Exp (B) (Odds Ratio)** |
| ***Neutral*** | | | |
| Intercept | -5.471 | .000 | |
| Satisfaction with dwelling | .156 | .002 | 1.169 |
| Personal safety | .201 | .000 | 1.223 |
| Satisfaction with leisure time | .475 | .000 | 1.608 |
| Satisfaction with income | .054 | .271 | 1.055 |
| Satisfaction with Working Conditions | .133 | .012 | 1.143 |
| Services | -.089 | .141 | .915 |
| Satisfaction with services | -.110 | .237 | .896 |
| Location | -.006 | .840 | .995 |
| Total Household Income | .000 | .979 | 1.000 |
| Satisfaction with Health | | | |
| Tenure/Ownership (Free RDP = 3) | .096 | .668 | 1.100 |
| Tenure/Ownership (Owned but paying off bond = 1) | -.139 | .558 | .870 |
| Employment Status | .069 | .012 | 1.072 |
| Satisfaction with Gov. | .178 | .002 | 1.195 |
| Satisfaction with neighbourhood | .250 | .000 | 1.284 |
| Household Assets | -.042 | .878 | .959 |
| Community Meetings | -.180 | .262 | .835 |
| ***Dissatisfied*** | | | |
| Intercept | -8.392 | .000 | |
| Satisfaction with dwelling | .200 | .000 | 1.221 |
| Location | -.065 | .039 | .938 |
| Community Meetings | .327 | .045 | 1.387 |
| Satisfaction with leisure time | .563 | .000 | 1.609 |
| Satisfaction with money | .427 | .000 | 1.533 |

| | | | |
|---|---|---|---|
| Medical Care | .188 | .041 | 1.206 |
| Satisfaction with neighbourhood | .476 | .000 | 1.609 |
| Satisfaction with Gov. | .262 | .000 | 1.299 |
| Safety | .067 | .268 | 1.069 |
| Household Assets | -.681 | .017 | .506 |
| Satisfaction with working conditions | .280 | .000 | 1.323 |
| Services | -.118 | .045 | .889 |
| Total Household Income | .002 | .845 | 1.002 |
| Satisfaction with Health services | .073 | .138 | 1.076 |
| Tenure/Ownership (Free RDP=3) | .071 | .742 | 1.074 |
| Employment Status | .080 | .007 | 1.083 |

*Table 5.28: Showing the parameter estimates table of QoL 5 (2018)*

The second set of variables compares dissatisfaction with the reference category (satisfaction). The parameter estimate table provides that 12 variables are significant in the model. There are nine variables in the study that share the same relationship with the reference category and the dissatisfied category, namely: Satisfaction with dwelling (Exp (B) =1.221), Community Meetings (Exp (B) = 1.387), Satisfaction with leisure time (Exp (B) = 1.609), Satisfaction with money (Exp (B) = 1.533), Medical Care (Exp (B) = 1.206), Satisfaction with neighbourhood (Exp (B) = 1.609), Satisfaction with Government (Exp (B) = 1.299), Satisfaction with working conditions (Exp (B) = 1.323) and Employment Status (Exp (B) = 1.083). Frankly this means that the variables are more likely to predict dissatisfaction than satisfaction and the odds are changed by their respective Exp (B) (odds ratio) values. Similarly the odds ratios of all 9 variables are increasing. There are only three variables which have an inverse relationship with the reference category: services (Exp (B) = .889), household assets (Exp (B) = .506), and location (Exp (B) = .938). These variables are less likely to predict dissatisfaction but more likely to predict satisfaction and they have decreasing odds ratios.

The classification table (see table 5.30) below provides insight on the groups which were best predicted by the model. The satisfied group was significantly and correctly predicted at 94.8% of the total valid cases and the dissatisfied group was correctly predicted at 33% of total valid cases. The poorly predict variable was the neutral category (7.5%). This may be attributed to the overall small total of the valid cases of associated with neutral responses.

| Classification | | | | |
|---|---|---|---|---|
| **Observed** | **Predicted** | | | |
| | **Satisfied** | **Neutral** | **Dissatisfied** | **Percent Correct** |
| **Satisfied** | 2907 | 31 | 130 | 94.8% |
| **Neutral** | 651 | 61 | 94 | 7.5% |
| **Dissatisfied** | 375 | 62 | 215 | 33.0% |
| **Overall Percentage** | 86.9% | 3.4% | 9.7% | 70.3% |

*Table 5.29: Showing the classification table of QoL 5 (2018)*

## 5.3 Conclusion

Drawing from the multinomial logistic regression model the results identified various objective and subjective variables considered in literature as significant. The literature discussed how objective indicators played a significant role in determining the overall well-being of individuals and advocated for a mixed approach. The study identified the significance of a mixed approach through presenting a combination of subjective and objective variables as significant indicators. There were some objective indicators such as education, income and employment status were insignificant throughout the study, yet the variables were referred to as significant in previous studies. These variables were recurring as insignificant over time from the first to the fifth quality of life survey. Overall the model proved to be a significant one in determining overall life satisfaction, judging from the model fitting information tables of all the quality of life surveys. The satisfied group of respondents was represented significantly in the model as presented by the classification table but the neutral group of respondents was poorly represented across all five samples of the quality of life surveys. The concluding chapter will provide some insight on the results of the significant and non-significant variables. Furthermore the chapter will conclude by responding to the main research question of the study.

# CHAPTER 6

# THE OVERALL PERSPECTIVE

## 6.1 Introduction

This chapter provides a discussion on the significant variables from the multinomial logistic regression and will answer the questions posed in the beginning of this research. The discussion will unpack the relationships and effects between the dependent variable and the independent variables. The discussion will also unpack some trends and differences between the significant and non-significant variables across the five models run. Drawing from the literature, the discussion will provide insight on contextual dynamics and elaborate on the reasons behind non-significant variables. In conclusion the chapter will answer the research questions. This chapter serves to provide a summary of the contents of this research and reflect on the impact of RDP housing on overall life satisfaction.

The previous chapter provided the results of the multinomial logistic regression which identified various variables across the years as significant and some of the variables correspond to the literature. This section will discuss the corresponding variables and highlight some traits as to why these variables may be significant. The results were produced from the model which considered the same domains throughout the running of the model. The discussion will be based on two tables from the results produced from the multinomial logistic regression, namely, likelihood ratio table and the parameter estimates table.

### 6.1.1 Subjective Domains:

Significantly there are numerous subjective domain variables such as satisfaction with safety, working conditions, money, leisure time and dwelling that contributed individually to the overall model in predicting overall life satisfaction according to the likelihood ratio tables. Indicated that experiencing a higher degree of satisfaction with these variables has a higher probability to determine or predict an individual's overall well-being. Considering that Theofilou (2013) identified the concept of overall life satisfaction as, the self-perception an individual has in the current state of mind. The subjective self-perceptions of the population sampled throughout the different years is influenced by their perception of their sense of safety, perception with income earnt, time spent on leisure, working conditions and their dwelling. The number of individuals satisfied with their dwellings is

identified in chapter 4 (graph 4.1 - 4.5) as high, even amongst RDP housing recipients. Below the significant variables are discussed accordingly.

*Community and Physical Environment Dimension*

The degree of satisfaction individuals have with the community and family time have been significant three times in the models. The first, fourth and fifth models identified the variables significant and having a positive relationship with the predicting the satisfaction of a respondent. This could be associated with the character of the social status which relates to activities, experiences and relations people encounter in their community (Kerce, 1992).

*Leisure and Social Interaction Satisfaction Dimension*

The leisure time variable is consistently significant to the predicting the overall life satisfaction throughout the all five models ran. The p value for all five models is < .05. This is primarily associated with the affective evaluation an individual has in relation to how well rested one is thus influencing their degree of happiness (Angner, 2012). Furthermore, this emphasizes the necessity of including the subjective domains in determining overall life satisfaction which was discussed by Gaibie and Davids (2009).

*Socio-Political and Governance Dimension*

Satisfaction with government, includes all spheres of government, was presented as significant in the third and fifth quality of life survey with a p value < .05 and satisfaction with basic services has been presented as insignificant in four models and the variables was not included in the first model (which includes the variables from the first QoL survey). Considering how the locations have been well serviced with basic services throughout the years of the survey as discussed in chapter 4, this variable may have no importance to the respondents based on the Bucur (2017) argument. His argument stated that people's perception on their well-being is altered by their urban environment and individual value systems (ibid). This may be the case in this context because the areas are well service the respondents to not rate their overall well-being subject to basic services, thus their perceptions have been altered by their urban environments and other attributes they deem important. The satisfaction with government variable may be insignificant in certain cases due to individual's perception being flawed. This is due to lack of information, personality traits or the individual's limited access to information on the role that government plays in ensuring the citizens overall well-being is improved as stipulated in policies such as the RDP (Kubiszewski et.al, 2018).

### 6.1.2 Objective Domain

*Material Conditions*

Income, location, economic activities are the key variables in this dimension. Income and location were significant in predicting overall life satisfaction in the three models using the variables of the third quality of life survey. Yet they were insignificant when running the model. The significance in the third quality of life may have been as a result of increased number of respondents who attached importance to their incomes due to their ability to support their families and themselves. Zack and Charlton (2003) identified that location is significant in determining an individual's satisfaction with their, dwelling; this corresponds with the information presented in chapter 4 relating to dwelling satisfaction and the overall life satisfaction of respondents.

*Economic Productivity and other Activity*

The variable of employment status contributes to the understanding of economic productivity. Employment status is only significant in determining overall life satisfaction in the second and fifth model and then it does not appear significant in the first third and fourth model. This can be attributed to the employment status of the overall sampled population which presented low levels of employed respondents than employed on not economically active respondents. Furthermore, there may be various employment categories which contributed to the significance of the variable in the year 2011 and 2018. Numerous jobs were created during the 2010 World Cup thus left numerous citizens with employment post the world cup regardless of the increasing unemployment rate (Bhorat et al, 2016). This can account for the significance of employment in the year 2011. The year 2018 saw an increase in employment by 0.8% in South Africa, in various industries and this may be the reason why the fifth model saw significance in employment status (Omarjee, 2018).

*Health Status*

The health care status is investigated through medical facilities utilized by respondents. This enables one to identify which health facilities are provided and accessible for the respondent. This variable was significant in the fourth and fifth survey. Considering that overall life satisfaction is one's perception of their urban environment, health status and household dynamics, the results present health care facilities as insignificant in the first three models. This may have been because respondents were healthy or had limited access to healthcare facilities (Simons et.al, 2014).

*Educational Dimension*

Education has been insignificant throughout the study and the models have identified this variable as consistently insignificant. Education may be an insignificant variable due to the people attaining a similar level of education (Salinas-Jimenez et.al, 2011). Furthermore the study by Salinas-Jimenez et.al (2011) indicates that people may derive their utility from comparing income increases with their peers or other citizens. Education and life satisfaction have been less studied in social sciences and results tend to be inconclusive such as the case of this study (Salinas-Jimenez et.al, 2011).

*Dwelling Dimension*

The dwelling dimension deals with the tenure status and household assets variables of the respondents. Tenure status is presented as significant in the second, third and fourth model. Yet when considering the overall contribution in the parameter estimates table, the variable consistently appears insignificant. It is only in the fourth model where one type of tenure status is significant, which is owned house but paying of bond. This corresponds significantly with the Zumbro (2013) study that identifies the significance of homeownership in Germany. Household assets (which include television, internet and a car) are identified as significant in the third and fourth model this variables significance varies due to peoples varied circumstances and preferences (Zumbro, 2013). An individual's personal possessions are subject to one's personal values and urban environment which may be why the variable is insignificant in other models.

*Community and Personal Security Dimension*

The safety variable is considered under this dimension. The variable is significant in the first, third and fifth model. Safety is considered by Zack and Charlton (2003) as important for one's well-being because one is sheltered from natural weathers, crime and some instances feeling safe is a result of a better off current state. The variable's insignificance in the second and fourth model may be attributed to the fact that there are other overarching variables which the respondent considers relatively more important than safety for determining their overall well-being (Simon's et.al, 2014).

## 6.2 RESPONSE TO THE QUESTIONS

This section responds to the sub question of the study which feed into the main research question. The section will draw from the results of the model and some of the literature from chapter 2.

### 6.2.1 Sub questions:

1. **Which of the domains contributes most to the respondents overall life satisfaction?**

The domains included in the study were highly emphasized by the studies considered in chapter 2, which emphasized a mixed approach in the determination of overall life satisfaction. The studies which emphasized this mixed approach of subjective and objective indicators include Kerce (1992), Camifield (2013) and Kubiszewski et.al (2013). Therefore, the study considered the mixed approach of subjective and objective domains and concludes that subjective domain variables contribute the most to overall life satisfaction throughout all five models.

**2. What are the key determinants of overall life satisfaction in the study?**

The key determinants to overall life satisfaction can be considered to be under the subjective domain and provide evidence that the subjective domain is the most contributing domain. The key determinants across all the models ran are, satisfaction with working conditions; satisfaction money; satisfaction with dwelling and satisfaction with leisure time. These variables based on the individual's self-perception and the responses have been significant in all five models. These results emphasize the importance of subjective well-being which Angner (2012) argued how measuring life satisfaction serves as measurement for well-being.

**3. What is the state's contribution to an individual's overall life satisfaction?**

The results of the model identify that subjective well-being is important in determining the respondents overall life satisfaction. The satisfaction with dwelling and working conditions are part of the arenas in which government has a role to play. The government provides subsidized housing and the attributes associated with the dwelling need to be aligned with the dwelling needs of the recipients considering size and quality (Zack and Charlton, 2013). The working conditions need to be monitored by the state, either for state enterprises or private entities. The role of the state is to protect the rights of individuals within the work space through organisations such as CCMA. This will enhance the role of government in improving the individuals' perception of their overall life satisfaction.

### 6.2.3 Main Research Question

**What is the impact of tenure status on overall life satisfaction of RDP housing recipients?**

The variable of tenure status provides important detail regarding the various types of tenure which the sampled population experience. Tenure status was identified as a significant variable (p-value <.05) in determining the overall life satisfaction according to the likelihood ratio tables of three models (2nd, 3rd and 4th). The parameter estimate tables (see table 5.5, 5.11, 5.17, 5.23 and 5.28) provide different results which show tenure status as insignificant. The RDP housing category showed no significant impact in determining overall life satisfaction according to all five models. Arguably, Zumbro (2012) study in Germany identified that low income homes considered homeownership as important due to pride and psychological fulfilment homeownership provides, through acting as a place of safety, place to build ones family and place of leisure.

The financial burdens of homeownership can be considered to have deterred the impact of RDP housing for the recipients. The financial status of the sampled population averages at a range of R1300 – R3200 this is quite low considering the average household costs (Kunene, 2018). The Household Affordability Index report from October 2018 reports that the cost of nutritious diet food in a household of four is R2 337.18 (Kunene, 2018). This is an indication that the household's disposable income would be less than R700, inherently creating frustrations considering other household costs such as transport and education. The sampled population experienced a sharp increase in the rate of unemployed respondents between 2015 and 2018 from 24% to 60% respectively. This may have further entrenched individual's ability to provide for their families, attain healthcare and leisure times which contribute to the overall well-being and life satisfaction of the sampled population.

The tenure status of RDP housing recipients has no impact on their overall life satisfaction. The results of the multinomial logistic regression present p –values >.05 for RDP housing ownership (tenure status) throughout all five models.

## 6.3 Planning Implications

This research report has produced significant understanding on the quantification of overall life satisfaction through identifying that subjective indicators play a pivotal role in the individual's perception of their well-being. The results from the multinomial logistic regression presented safety, working conditions, dwelling satisfaction, community

meetings, and socio political domains as consistently significant. These attributes contribute to arenas which are addressed by public policy. The safety of civilians is dependent on the SAPS (South African Police Service), the working conditions of citizens are guided and should be supervised by government entities to ensure fair treatment and wages. Thus policy directed towards improving the quality of life of citizens should broaden the strategies on safety in various contexts and locations. The government entities involved in ensuring workers are treated fairly should be encouraged to evaluate and monitor various employment sectors to ensure the improvement of peoples overall life satisfaction.

Dwelling satisfaction is associated with subsidized housing, which is the responsibility of government and the quality of housing needs specific consideration of the recipients needs to ensure the improvement of their overall satisfaction. Regardless of the fact that some detailed attributes of the dwelling (size and material) were not considered in the study, the policies aimed at improving the well-being and life satisfaction of citizens should not only focus on housing delivery but addressing the financial burdens associated with the household and physical attributes of the household. The socio political attributes such as community meetings need to be further entrenched in the communities and governance strategies. Considering the significance of community meetings, the involvement of citizens should not only be considered for infrastructure projects and Integrated and Development Planning procedures but the implications of policies and government strategies should be widely discussed with communities at large.

## 6.4 Future Studies

The results of this research report have various outcomes which are contradictor to previous studies which investigated the overall satisfaction of citizens. The insignificance of the objective domains which have been used universally understood to quantify overall satisfaction requires additional in-depth investigation. Considering some limitations associated with the study such as data collection differences and change in questionnaires, the results may have been altered. Therefore, investigation into the impact of governance on overall life satisfaction and questions relating to specifics on dwellings (quality, size and location) would benefit development policy in the developing context of South Africa.

## 6.5 Conclusion

This research report investigated the impact of subsidized housing on the overall life satisfaction of recipients in Gauteng municipalities. The Gauteng provinces is characterized by increasing rates of unemployment, increased inward migration and increasing demand for housing. There are still queries on service delivery in the province especially in low income neighbourhoods and amongst various recipients of subsidized housing. There are protests reflecting the dissatisfaction of citizens with regards to unemployment, housing quality, service delivery and local government. These complaints are a result of the value or significance the attributes play in determining the citizens overall life satisfaction.

The subjective domain explains the subjective well-being of individuals and how they perceive their lives as a whole. The combined method provides extended knowledge on the overall contributing variables to an individual's perception of their life. Satisfaction with leisure time, working conditions, government, money, dwelling and neighbourhood were consistently significant in determining overall life satisfaction across all five models ran. Therefore, highlighting the significance of the subjective domain in determining overall life satisfaction because of their close relation ones perception of themselves. The variables considered in the objective domain such as healthcare, tenure, income, employment status, transport, household assets and governance fluctuated in significance in this research across all five models.

The multinomial logistic regression model was the best in determining the significance of the objective and subjective domains considering its ability to run categorical variables. The data was adequate in attaining the necessary variables suggested for the quantification of overall life satisfaction. The Quality of Life surveys attained from the GCRO covered both domains investigated even though some variables were excluded hence limiting the number of variables used to determine overall life satisfaction. The analysis of the data provided a significant time series to enable the comparison between the years of the quality of life surveys from 2009 – 2018. The results provided by the models identified subsidized housing (RDP housing) as having no significant impact on the way individuals perceived their overall life satisfaction.

This research strongly emphasizes that policy makers focusing projects, programmes and initiatives on the betterment of individuals lives, should carefully navigate the individual or collective perspectives of the public. Their subjective perceptions determine the degree of significance, support and satisfaction the public will have towards decisions made by officials and policy makers.

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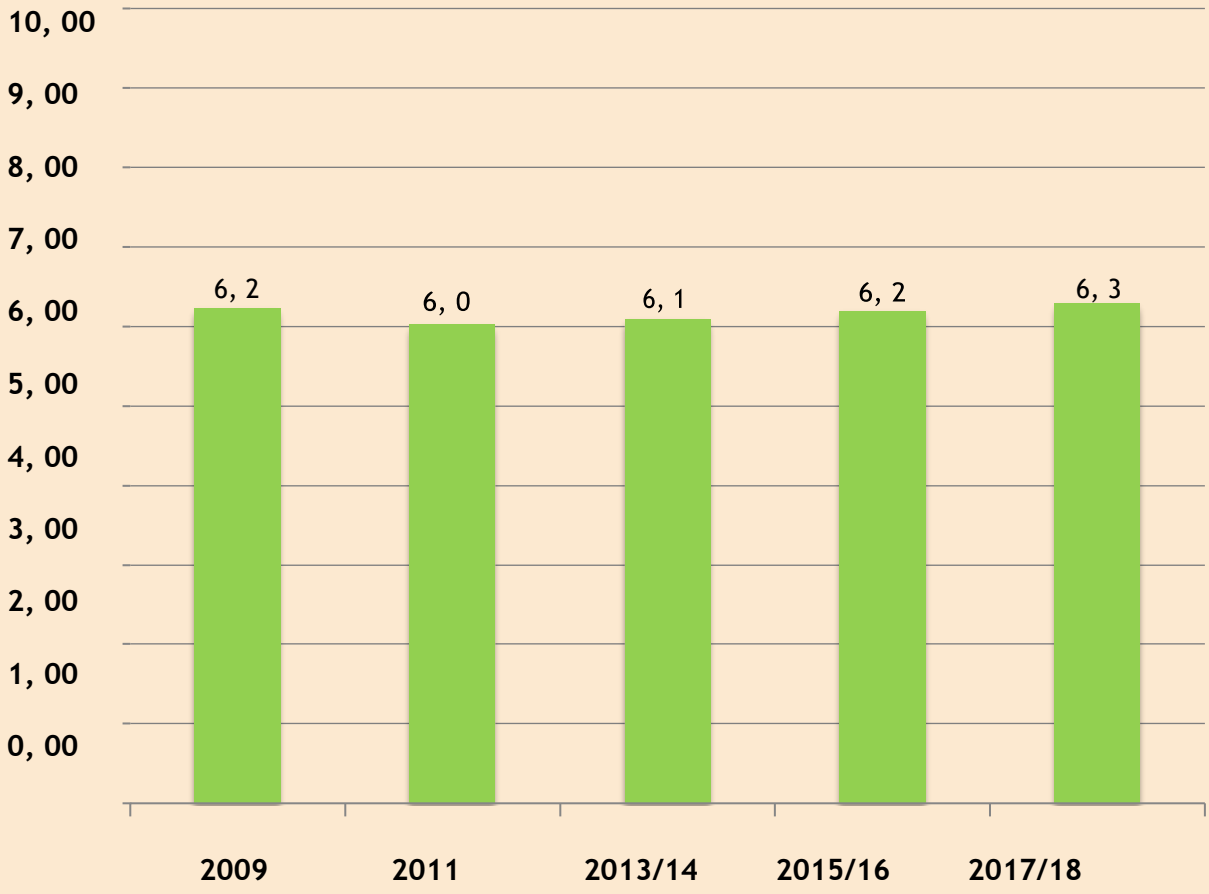
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# ANNEXURE A

Graph tracking the quality of life index from 2009 - 2018 sourced from the GCRO Key Insights article (de Kadt et al., 2018)



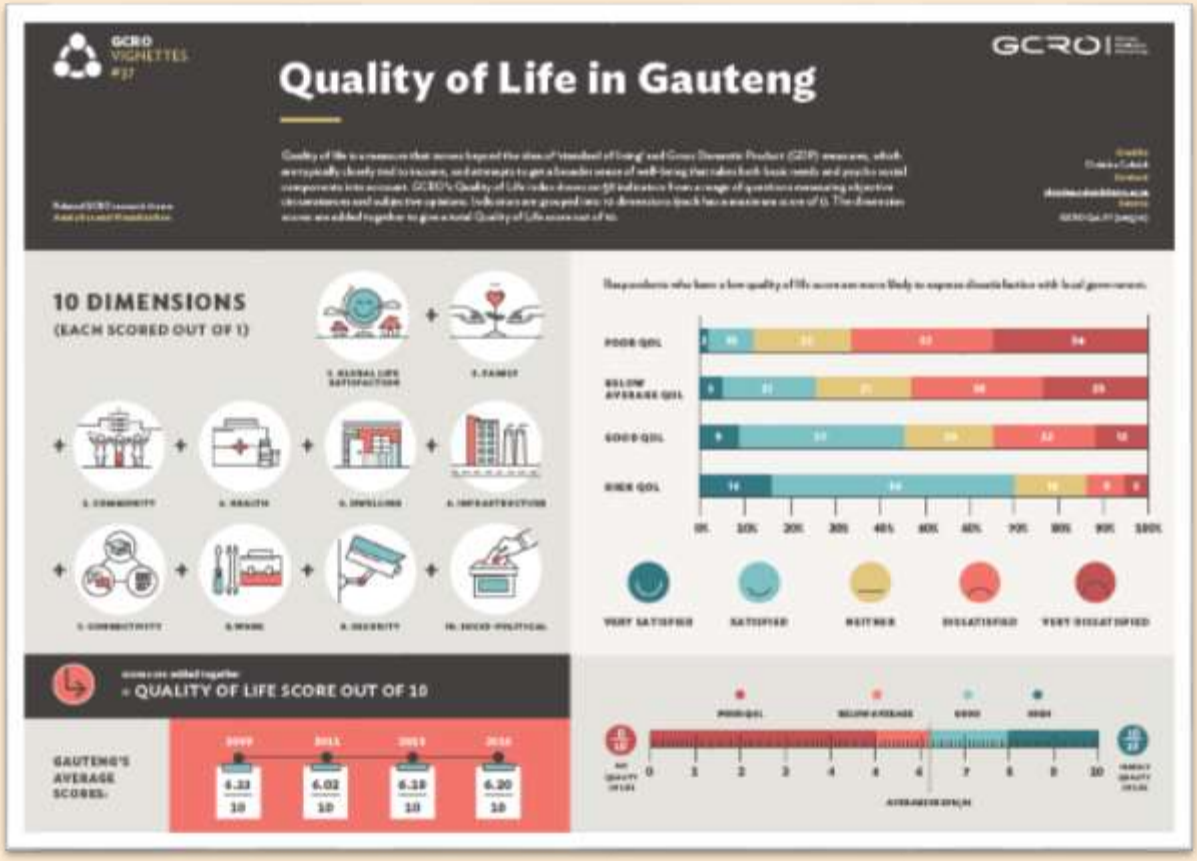
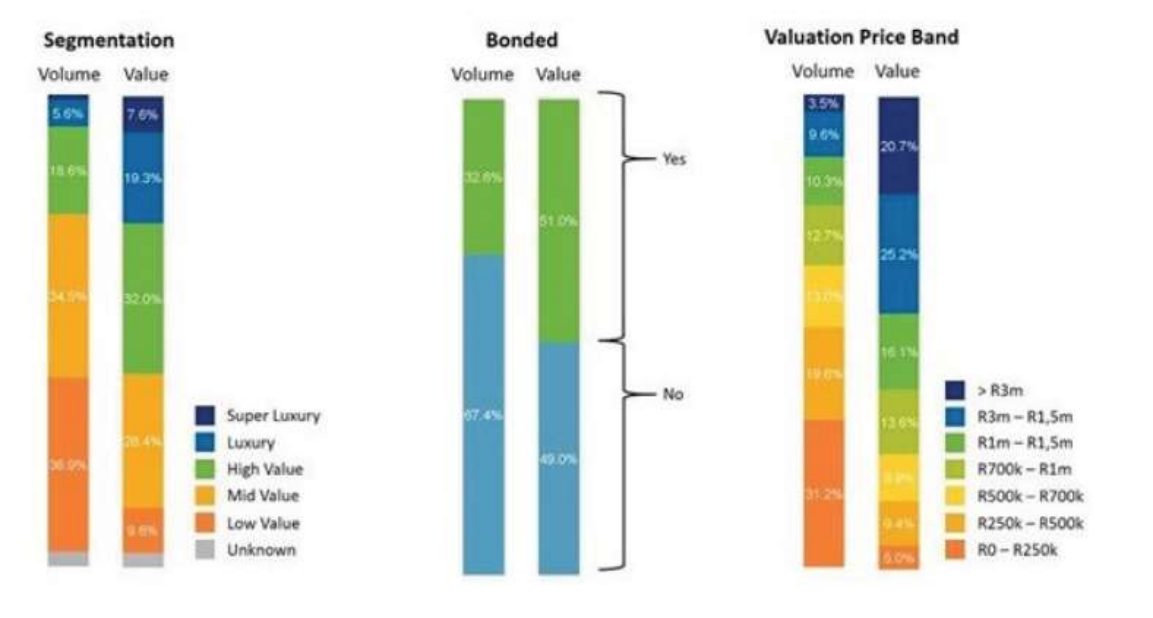



Figure showing the 10 dimensions of the Quality of Life and scoring methods (GCRO, 2018)




*Graph showing the contribution of social housing in the housing markets in South Africa (Bizcommunity, 2018)*

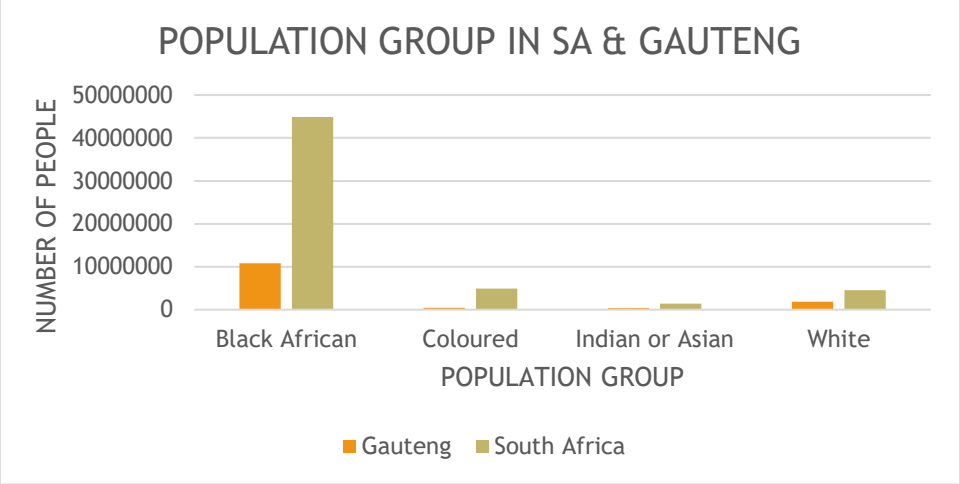
| Dimensions | Indicators | | | |
|---|---|---|---|---|
| **Housing Quality** | Percentage of Overcrowding (%[2]) | Housing deprivation rate by number of item deprived of (%) | Part of population living without electricity in dwelling (%) | Part of the population satisfied with housing quality (%) |
| **Housing Environment** | Crime, vandalism in area (%) | Noise from the street/neighbours (%) | Pollution or other environmental issues (%) | Satisfaction by population with housing env. (%) |
| **Housing expenditure burden** | The housing cost over burden rate (%) | Inability to keep home adequately warm (%) | The share of housing costs in disposable household income, Cost (%) | Inability to pay utility bills (%) |

*The table shows the Housing Indicators Relevant to Quality of Life (Sourced from: Streimikiene, 2015)*

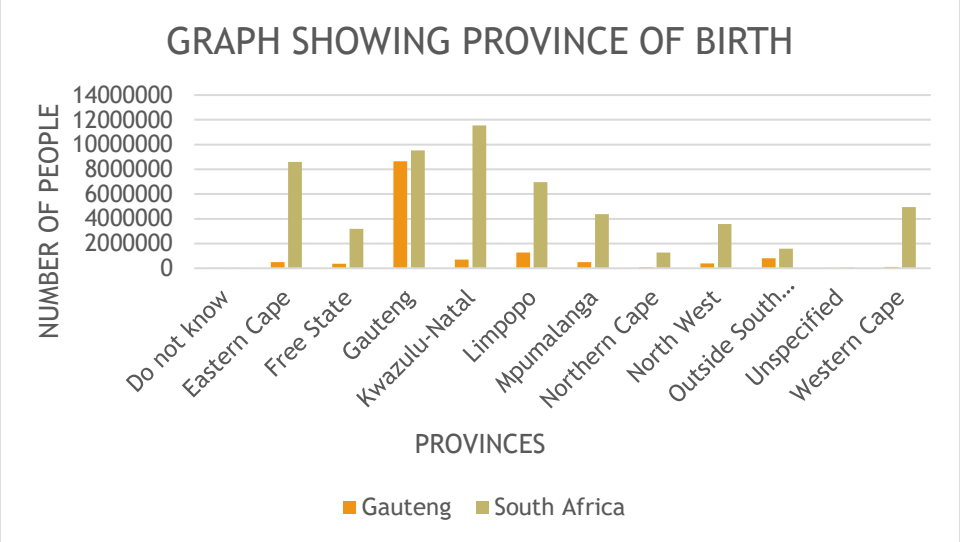
# ANNEXURE B

| Province | RDP | NOT RDP | Do not know | Total |
|---|---|---|---|---|
| Western Cape | 571 997 | 1 335 243 | 25 023 | 1 932 263 |
| Eastern Cape | 386 802 | 1 372 311 | 13 423 | 1 772 536 |
| Northern Cape | 105 541 | 244 759 | 2 987 | 353 287 |
| Free State | 289 414 | 652 680 | 3 966 | 946 060 |
| KwaZulu-Natal | 559 302 | 2 300 600 | 14 335 | 2 874 237 |
| North West | 261 693 | 976 842 | 9 184 | 1 247 718 |
| Gauteng | 1 227 729 | 3 641 899 | 77 162 | 4 946 791 |
| Mpumalanga | 241 801 | 987 316 | 9 110 | 1 238 227 |
| Limpopo | 260 976 | 1 331 224 | 7 412 | 1 599 612 |
| **South Africa** | **3 905 254** | **12 842 874** | **162 602** | **16 910 730** |

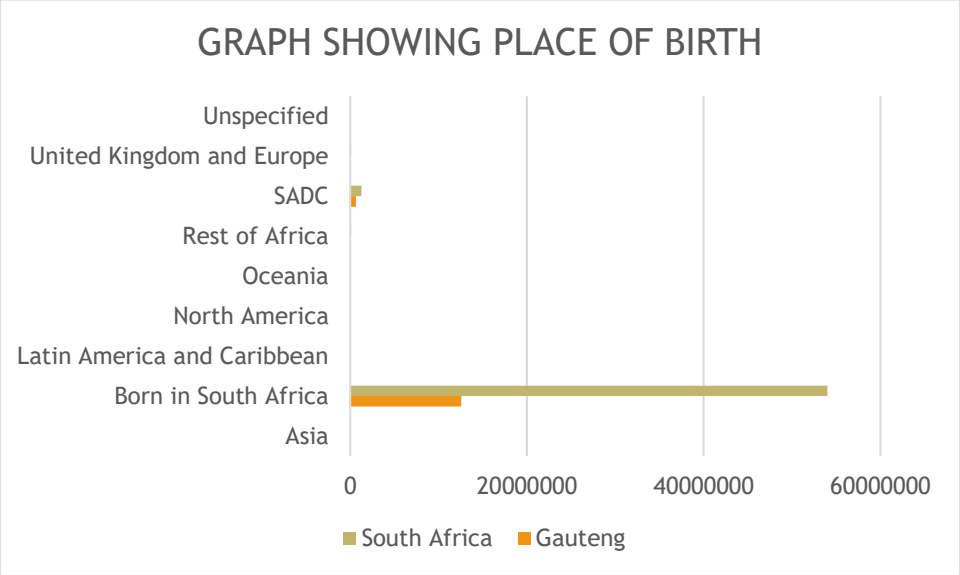
*Table showing number of RDP dwellings in South Africa (Community Survey, 2016)*




*Graph showing the population group in Gauteng (Wazimap, 2016)*

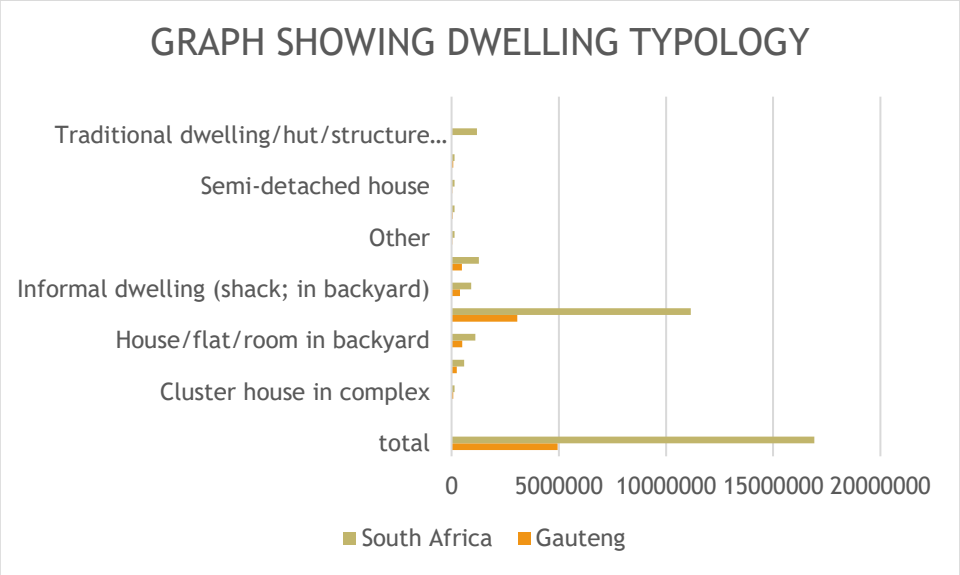



*Graph showing the province of birth of the Gauteng residents*




*Shows the places of birth of the population in South Africa and Gauteng (Wazimap, 2016)*

\




*Graph showing the dwelling types in South Africa and Gauteng (Wazimap, 2018)*

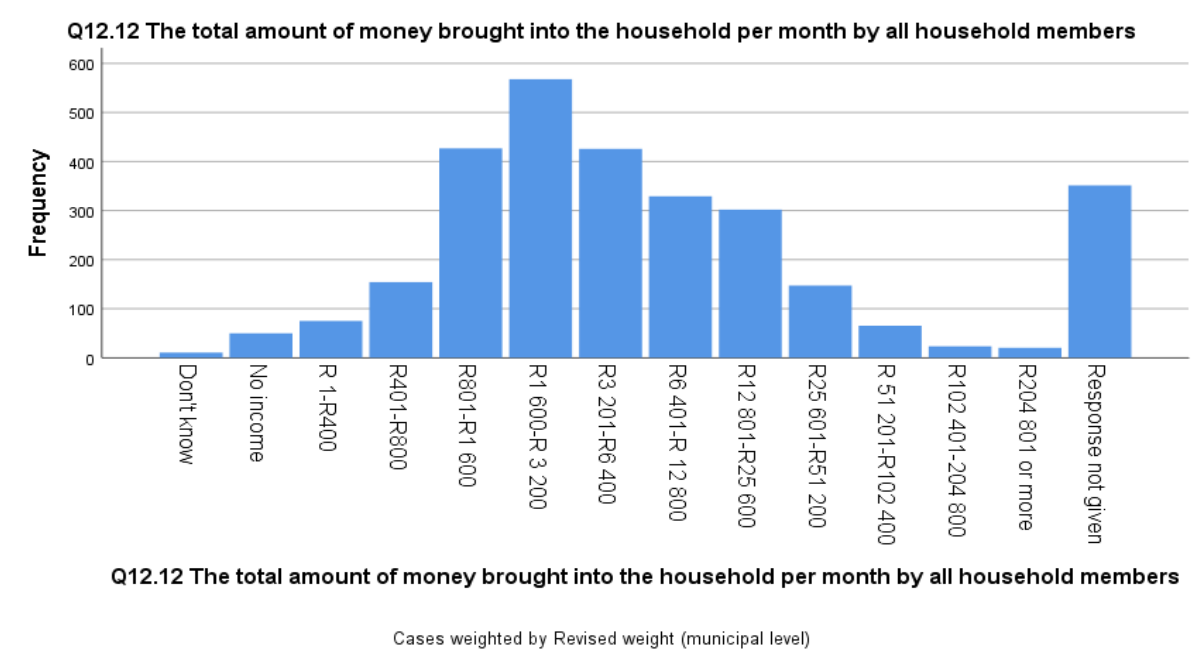
| TABLE 1: VARIABLES INCLUDED IN THE ACCESSIBILITY INDEX | |
|---|---|
| **Positive** | **Negative** |
| The main reason for coming to live where I do was either to access schools or to be close to work | There are no public schools where I live |
| I live within 15min walk of somewhere I can buy uncooked food (fresh vegetables, meat etc.) | There are no government health services where I live |
| I live within 15min walk of financial services/banks | |
| I live within 15min walk of an internet cafe | |
| I live within 15min walk of somewhere I can access business services (printing, photocopying etc.) | |
| I live within 15min walk of a post office | |
| I live within 15min walk of a park or green space | |
| I live within 15min walk of a library | |
| My most frequent trip takes 30 mins or less | |
| The closest public transport access point is less than 20mins walk | |
| If there are children in the household, it takes them less than 30mins to get to school | |

Showing the variables used to compile the Accessibility Index (Culwick and Mahulatsi, 2019)

# ANNEXURE C

## Economic Dynamics

QoL I & QoL II



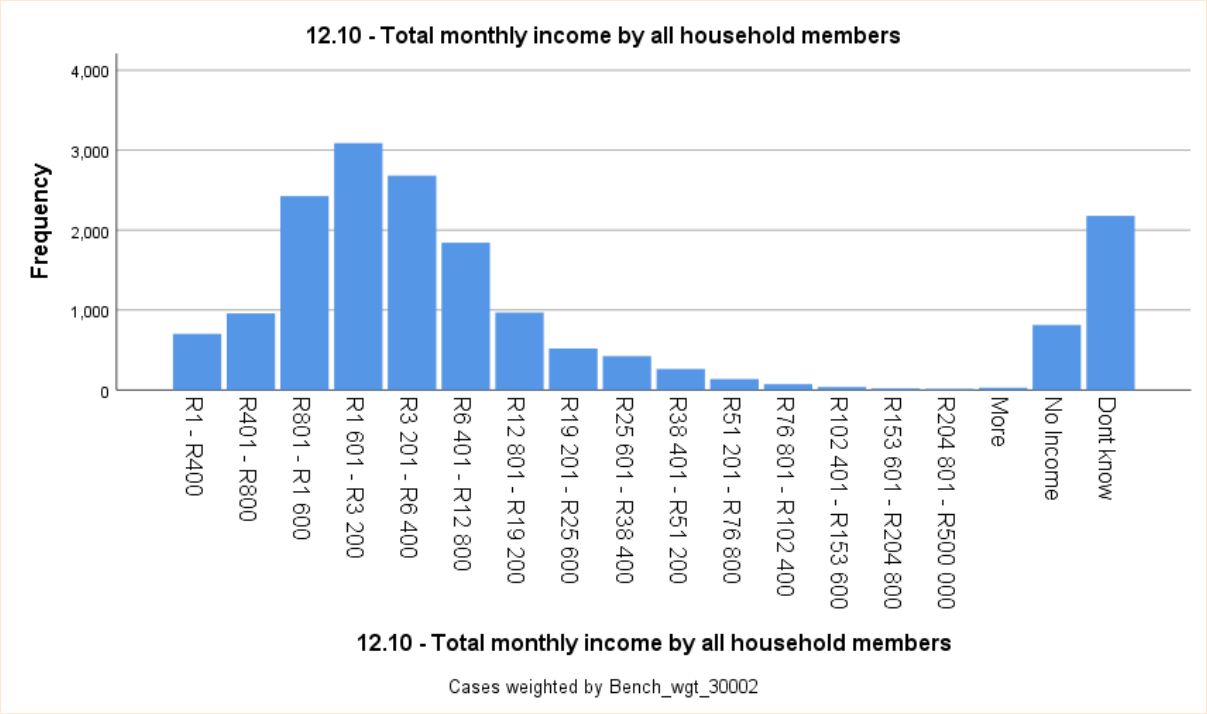




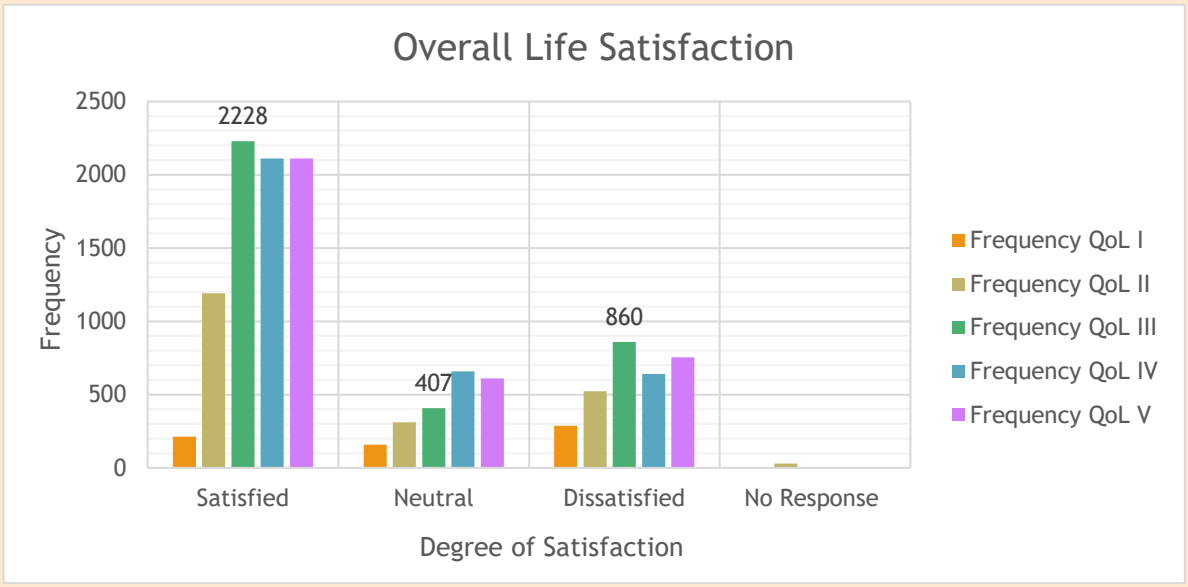





Graph showing Overall Life Satisfaction of all the recipients of RDP Housing across all Quality of Life surveys.




Graph showing Overall Life Satisfaction of all the recipients of RDP Housing across all Quality of Life surveys.



# ANNEXURE D:

## Ethics Clearance



SCHOOL OF ARCHITECTURE AND PLANNING
HUMAN RESEARCH ETHICS COMMITTEE

SCHOOL OF ARCHITECTURE PLANNING

CLEARANCE CERTIFICATE
PROTOCOL NUMBER: SOAP038/03/2019

| | |
|---|---|
| PROJECT TITLE: | Understanding the impact state-housing on the quality of life of recipients |
| INVESTIGATOR/S: | Frederick Beckley (Student No: 814257) |
| SCHOOL: | Architecture and Planning |
| DEGREE PROGRAMME: | Master of Science Developmental Planning (MScDP) |
| DATE CONSIDERED | 03 September 2019 |
| EXPIRY DATE: | 03 September 2020 |
| DECISION OF THE COMMITTEE: | Approved |

CHAIRPERSON _____
(Dr Brian Boshoff)

DATE: Signed under lockdown: 6.7.20

cc: Supervisor/s: Aly Karam

DECLARATION OF INVESTIGATORS
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

Signature Date

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# ANNEXURE E:

# Multinomial Logistic Regression Model Results

**QoL I:**

**Case Processing Summary**

| | | N | Marginal Percentage |
|---|---|---|---|
| Q6.9 Satisfaction with life as a whole (recoded) | Satisfied | 855.99380 | 69.1% |
| | Neutral | 174.79060 | 14.1% |
| | Dissatisfied | 208.66390 | 16.8% |
| Q1.3 Type of tenure of respondent's household | Owned, but paying off a bond | 493.51870 | 39.8% |
| | Owned, fully paid off | 567.27750 | 45.8% |
| | Free RDP house | 178.65210 | 14.4% |
| Valid | | 1239.44830 | 100.0% |
| Missing | | 1718.85870 | |
| Total | | 2958.30700 | |
| Subpopulation | | 1141[a] | |

a. The dependent variable has only one value observed in 1141 (100.0%) subpopulations.

**Model Fitting Information**

| | Model Fitting Criteria | | | Likelihood Ratio Tests | | |
|---|---|---|---|---|---|---|
| Model | AIC | BIC | -2 Log Likelihood | Chi-Square | df | Sig. |
| Intercept Only | 2066.030 | 2076.274 | 2062.030 | | | |
| Final | 1452.586 | 1667.728 | 1368.586 | 693.443 | 40 | .000 |

**Goodness-of-Fit**

| | Chi-Square | df | Sig. |
|---|---|---|---|
| Pearson | 3324.375 | 2240 | .000 |
| Deviance | 1368.586 | 2240 | 1.000 |

**Parameter Estimates**

| Q6.9 Satisfaction with life as a whole (recoded)[a] | | B | Std. Error | Wald | df | Sig. | Exp(B) | 95% Confidence Interval for Exp (B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower Bound | Upper Bound |
| Neutral | Intercept | -7.275 | 2.009 | 13.116 | 1 | .000 | | | |
| | A5 Local municipality (revised) | -.026 | .040 | .410 | 1 | .522 | .975 | .901 | 1.054 |
| | Q1.4 Respondent satisfied or very satisfied with the living dwelling | .457 | .098 | 21.623 | 1 | .000 | 1.580 | 1.303 | 1.916 |
| | Q12.12 The total amount of money brought into the household per month by all household members | .019 | .039 | .237 | 1 | .627 | 1.019 | .944 | 1.101 |
| | Q5.A attended any meetings | .320 | .197 | 2.837 | 1 | .104 | 1.378 | .936 | 2.028 |
| | Q10.1 Where respondent usually goes for medical care | .022 | .119 | .033 | 1 | .856 | 1.022 | .809 | 1.290 |
| | Q6.7 How satisfied are you with the way you spend leisure time - recreation, relaxation | .405 | .121 | 11.155 | 1 | .001 | 1.500 | 1.182 | 1.902 |
| | Q6.4 How satisfied are you with the time you spend with your family and the things you do with them | .195 | .120 | 2.811 | 1 | .106 | 1.215 | .959 | 1.539 |
| | Q6.1 How satisfied are you with the amount of money available to you personally? | .323 | .098 | 10.868 | 1 | .001 | 1.382 | 1.140 | 1.675 |
| | Satis_Gov | -.117 | .105 | 1.231 | 1 | .267 | .890 | .723 | 1.094 |
| | Safety | -.008 | .114 | .004 | 1 | .947 | .992 | .794 | 1.241 |
| | HH_Assets | .461 | .857 | .290 | 1 | .590 | 1.586 | .296 | 8.506 |
| | Q4.1 Respondent owes money to someone including a bank or a shop or money-lender | .259 | .222 | 1.353 | 1 | .245 | 1.295 | .838 | 2.003 |
| | Q7.13 Respondent's satisfaction with the working conditions in main job | .484 | .107 | 20.568 | 1 | .000 | 1.622 | 1.316 | 2.000 |
| | Q11.1 Respondent uses public transport | -.249 | .259 | .935 | 1 | .334 | .779 | .470 | 1.292 |
| | Education level (recoded) | .067 | .168 | .161 | 1 | .688 | 1.070 | .770 | 1.487 |
| | Employment status (recoded) | -.069 | .601 | .013 | 1 | .908 | .933 | .287 | 3.030 |
| | Services | .249 | .117 | 4.495 | 1 | .034 | 1.282 | 1.019 | 1.614 |
| | [Q1.3 Type of tenure of respondent's household=1] | -.461 | .324 | 2.025 | 1 | .155 | .631 | .335 | 1.190 |
| | [Q1.3 Type of tenure of respondent's household=2] | -.396 | .267 | 2.208 | 1 | .137 | .673 | .399 | 1.135 |
| | [Q1.3 Type of tenure of respondent's household=3] | 0[b] | . | . | 0 | . | . | . | . |
| Dissatisfied | Intercept | -16.360 | 2.376 | 47.413 | 1 | .000 | | | |
| | A5 Local municipality (revised) | -.067 | .045 | 2.181 | 1 | .140 | .936 | .857 | 1.022 |
| | Q1.4 Respondent satisfied or very satisfied with the living dwelling | .393 | .107 | 13.449 | 1 | .000 | 1.481 | 1.201 | 1.826 |
| | Q12.12 The total amount of money brought into the household per month by all household members | -.011 | .044 | .068 | 1 | .794 | .989 | .907 | 1.078 |
| | Q5.A attended any meetings | -.589 | .240 | 6.030 | 1 | .014 | .555 | .347 | .888 |
| | Q10.1 Where respondent usually goes for medical care | .211 | .132 | 2.566 | 1 | .110 | 1.235 | .954 | 1.599 |
| | Q6.7 How satisfied are you with the way you spend leisure time - recreation, relaxation | .454 | .125 | 13.225 | 1 | .000 | 1.575 | 1.233 | 2.011 |
| | Q6.4 How satisfied are you with the time you spend with your family and the things you do with them | .273 | .127 | 4.618 | 1 | .032 | 1.314 | 1.024 | 1.686 |
| | Q6.1 How satisfied are you with the amount of money available to you personally? | .839 | .126 | 44.227 | 1 | .000 | 2.314 | 1.807 | 2.963 |
| | Satis_Gov | .251 | .116 | 4.700 | 1 | .030 | 1.285 | 1.024 | 1.612 |
| | Safety | .546 | .125 | 19.039 | 1 | .000 | 1.726 | 1.351 | 2.205 |
| | HH_Assets | 2.979 | 1.028 | 4.684 | 1 | .043 | 0.000 | 1.065 | 60.103 |
| | Q4.1 Respondent owes money to someone including a bank or a shop or money-lender | .607 | .255 | 5.689 | 1 | .017 | 1.835 | 1.114 | 3.022 |
| | Q7.13 Respondent's satisfaction with the working conditions in main job | .772 | .114 | 46.085 | 1 | .000 | 2.165 | 1.732 | 2.705 |
| | Q11.1 Respondent uses public transport | -.056 | .295 | .036 | 1 | .850 | .946 | .531 | 1.685 |
| | Education level (recoded) | .159 | .191 | .693 | 1 | .405 | 1.172 | .807 | 1.702 |
| | Employment status (recoded) | .487 | .478 | 1.040 | 1 | .308 | 1.628 | .638 | 4.156 |
| | Services | .351 | .128 | 7.700 | 1 | .006 | 1.420 | 1.109 | 1.819 |
| | [Q1.3 Type of tenure of respondent's household=1] | -.179 | .381 | .219 | 1 | .639 | .836 | .396 | 1.766 |
| | [Q1.3 Type of tenure of respondent's household=2] | .086 | .294 | .084 | 1 | .771 | 1.089 | .612 | 1.939 |
| | [Q1.3 Type of tenure of respondent's household=3] | 0[b] | . | . | 0 | . | . | . | . |

a. The reference category is: Satisfied.

b. This parameter is set to zero because it is redundant.

## QoL II

**Model Fitting Information**

| Model | Model Fitting Criteria | | | Likelihood Ratio Tests | | |
|---|---|---|---|---|---|---|
| | AIC | BIC | -2 Log Likelihood | Chi-Square | df | Sig. |
| Intercept Only | 4438.338 | 4450.381 | 4434.338 | | | |
| Final | 3554.707 | 3819.632 | 3466.707 | 967.632 | 42 | .000 |

**Goodness-of-Fit**

| | Chi-Square | df | Sig. |
|---|---|---|---|
| Pearson | 6546.721 | 5570 | .000 |
| Deviance | 3466.707 | 5570 | 1.000 |

**Likelihood Ratio Tests**

| Effect | Model Fitting Criteria | | | Likelihood Ratio Tests | | |
|---|---|---|---|---|---|---|
| | AIC of Reduced Model | BIC of Reduced Model | -2 Log Likelihood of Reduced Model | Chi-Square | df | Sig. |
| Intercept | 3554.707 | 3819.632 | 3466.707[a] | .000 | 0 | . |
| Education | 3551.905 | 3804.788 | 3467.905 | 1.198 | 2 | .549 |
| Service_Ave | 3558.368 | 3811.252 | 3474.368 | 7.662 | 2 | .022 |
| HH_Assets | 3554.675 | 3807.559 | 3470.675 | 3.969 | 2 | .137 |
| Comm_Parti | 3553.698 | 3806.581 | 3469.698 | 2.991 | 2 | .224 |
| Satis.Gov | 3555.818 | 3808.701 | 3471.818 | 5.111 | 2 | .078 |
| Satis_Services | 3556.194 | 3809.077 | 3472.194 | 5.487 | 2 | .064 |
| Personal_Safety | 3553.924 | 3806.807 | 3469.924 | 3.217 | 2 | .200 |
| Municipality 2011 | 3551.518 | 3804.401 | 3467.518 | .811 | 2 | .667 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Total monthly income by all household members | 3556.224 | 3809.107 | 3472.224 | 5.517 | 2 | .063 |
| Satisfaction - health services that government provides | 3557.314 | 3810.198 | 3473.314 | 6.608 | 2 | .037 |
| Where do you usually go for medical care | 3552.963 | 3805.846 | 3468.963 | 2.256 | 2 | .324 |
| Satisfaction - working conditions in your job | 3578.649 | 3831.533 | 3494.649 | 27.943 | 2 | .000 |
| What is your employment status | 3575.442 | 3828.325 | 3491.442 | 24.735 | 2 | .000 |
| Satisfaction - amount of money available to respondent personally | 3635.677 | 3888.560 | 3551.677 | 84.970 | 2 | .000 |
| Satisfaction - Leisure time | 3668.426 | 3921.309 | 3584.426 | 117.719 | 2 | .000 |
| Satisfaction - area / neighbourhood you live in | 3620.223 | 3873.107 | 3536.223 | 69.517 | 2 | .000 |
| Uses public transport | 3575.906 | 3828.790 | 3491.906 | 25.199 | 2 | .000 |
| Satisfaction Dwelling | 3559.418 | 3812.301 | 3475.418 | 8.711 | 2 | .013 |
| Ownership | 3568.686 | 3797.485 | 3492.686 | 25.979 | 6 | .000 |

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Parameter Estimates

| Life Satisfaction[a] | | B | Std. Error | Wald | df | Sig. | Exp(B) | 95% Confidence Interval for Exp(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower Bound | Upper Bound |
| Neutral | Intercept | -6.519 | .588 | 122.925 | 1 | .000 | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Education | .068 | .070 | .933 | 1 | .334 | 1.070 | .932 | 1.229 |
| Service_Ave | -.121 | .096 | 1.567 | 1 | .211 | .886 | .734 | 1.071 |
| HH_Assets | -.446 | .306 | 2.130 | 1 | .144 | .640 | .352 | 1.165 |
| Comm_Parti | .112 | .232 | .235 | 1 | .628 | 1.119 | .711 | 1.762 |
| Satis.Gov | .129 | .059 | 4.744 | 1 | .029 | 1.138 | 1.013 | 1.278 |
| Satis_Services | .217 | .108 | 4.039 | 1 | .044 | 1.242 | 1.005 | 1.535 |
| Personal_Safety | -.040 | .068 | .337 | 1 | .562 | .961 | .841 | 1.098 |
| Municipality 2011 | .005 | .015 | .090 | 1 | .764 | 1.005 | .975 | 1.035 |
| Total monthly income by all household members | .034 | .018 | 3.584 | 1 | .058 | 1.034 | .999 | 1.071 |
| Satisfaction - health services that government provides | .077 | .040 | 3.783 | 1 | .052 | 1.080 | .999 | 1.168 |
| Where do you usually go for medical care | -.103 | .085 | 1.457 | 1 | .227 | .902 | .763 | 1.066 |
| Satisfaction - working conditions in your job | .228 | .061 | 13.800 | 1 | .000 | 1.256 | 1.114 | 1.417 |
| What is your employment status | .078 | .034 | 5.243 | 1 | .022 | 1.081 | 1.011 | 1.156 |
| Satisfaction - amount of money available to respondent personally | .282 | .060 | 22.007 | 1 | .000 | 1.326 | 1.179 | 1.492 |
| Satisfaction - Leisure time | .611 | .071 | 74.350 | 1 | .000 | 1.841 | 1.603 | 2.116 |
| Satisfaction - area / neighbourhood you live in | .404 | .071 | 32.699 | 1 | .000 | 1.498 | 1.304 | 1.720 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Uses public transport | .168 | .140 | 1.440 | 1 | .230 | 1.183 | .899 | 1.557 |
| | Satisfaction Dwelling | .042 | .072 | .349 | 1 | .555 | 1.043 | .906 | 1.201 |
| | [Ownership=1] | -.693 | .177 | 15.302 | 1 | .000 | .500 | .353 | .708 |
| | [Ownership=2] | -.570 | .166 | 11.726 | 1 | .001 | .566 | .408 | .784 |
| | [Ownership=3] | -.392 | .216 | 3.274 | 1 | .070 | .676 | .442 | 1.033 |
| | [Ownership=6] | 0[b] | . | . | 0 | . | . | . | . |
| Dissatisfied | Intercept | -10.256 | .690 | 220.731 | 1 | .000 | | | |
| | Education | -.018 | .076 | .053 | 1 | .818 | .983 | .846 | 1.141 |
| | Service_Ave | .161 | .085 | 3.589 | 1 | .058 | 1.175 | .994 | 1.389 |
| | HH_Assets | -.597 | .356 | 2.802 | 1 | .094 | .551 | .274 | 1.107 |
| | Comm_Parti | .414 | .237 | 3.036 | 1 | .081 | 1.513 | .950 | 2.409 |
| | Satis.Gov | .078 | .068 | 1.328 | 1 | .249 | 1.081 | .947 | 1.234 |
| | Satis_Services | .205 | .115 | 3.178 | 1 | .075 | 1.228 | .980 | 1.539 |
| | Personal_Safety | .110 | .075 | 2.179 | 1 | .140 | 1.116 | .965 | 1.292 |
| | Municipality 2011 | -.013 | .018 | .559 | 1 | .455 | .987 | .953 | 1.022 |
| | Total monthly income by all household members | -.015 | .019 | .595 | 1 | .440 | .985 | .949 | 1.023 |
| | Satisfaction - health services that government provides | .096 | .046 | 4.336 | 1 | .037 | 1.101 | 1.006 | 1.205 |
| | Where do you usually go for medical care | -.106 | .092 | 1.338 | 1 | .247 | .899 | .751 | 1.077 |
| | Satisfaction - working conditions in your job | .303 | .064 | 22.389 | 1 | .000 | 1.354 | 1.194 | 1.535 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| What is your employment status | .186 | .038 | 24.268 | 1 | .000 | 1.204 | 1.118 | 1.296 |
| Satisfaction - amount of money available to respondent personally | .624 | .075 | 68.829 | 1 | .000 | 1.867 | 1.611 | 2.164 |
| Satisfaction - Leisure time | .673 | .075 | 79.790 | 1 | .000 | 1.960 | 1.691 | 2.272 |
| Satisfaction - area / neighbourhood you live in | .562 | .073 | 58.867 | 1 | .000 | 1.754 | 1.520 | 2.025 |
| Uses public transport | .832 | .170 | 23.948 | 1 | .000 | 2.298 | 1.647 | 3.207 |
| Satisfaction Dwelling | .206 | .070 | 8.625 | 1 | .003 | 1.228 | 1.071 | 1.409 |
| [Ownership=1] | .208 | .209 | .991 | 1 | .320 | 1.231 | .817 | 1.855 |
| [Ownership=2] | -.106 | .203 | .272 | 1 | .602 | .900 | .604 | 1.339 |
| [Ownership=3] | -.328 | .243 | 1.822 | 1 | .177 | .720 | .447 | 1.160 |
| [Ownership=6] | 0[b] | . | . | 0 | . | . | . | . |

a. The reference category is: Satisfied.

b. This parameter is set to zero because it is redundant.

**Classification**

| | Predicted | | | |
|---|---|---|---|---|
| Observed | Satisfied | Neutral | Dissatisfied | Percent Correct |
| Satisfied | 2207.35063733 | 13.83136688 | 74.34772514 | 96.2% |
| Neutral | 312.84540747 | 19.25813106 | 49.75926900 | 5.0% |
| Dissatisfied | 208.69928946 | 20.35889856 | 137.87051021 | 37.6% |
| Overall Percentage | 89.6% | 1.8% | 8.6% | 77.7% |

## QoL III

**Case Processing Summary**

| | | N | Marginal Percentage |
|---|---|---|---|
| Satisfaction: Life as a whole | Satisfied | 5296.2687453020 | 77.1% |
| | Neither satisfied or dissatisfied | 682.9986207300 | 9.9% |
| | Dissatisfied | 893.4725107830 | 13.0% |
| Dwelling ownership | Owned, but paying off a bond | 1905.6522713700 | 27.7% |
| | Owned and fully paid off | 2222.4152446980 | 32.3% |
| | Free RDP house | 996.196192690 | 14.5% |
| | Private rental | 1721.5563219290 | 25.0% |
| | Occupation of vacant dwelling | 26.9198466490 | 0.4% |
| Valid | | 6872.7398768150 | 100.0% |
| Missing | | 9862.5446657110 | |
| Total | | 16735.2845425260 | |
| Subpopulation | | 6436[a] | |

a. The dependent variable has only one value observed in 6436 (100,0%) subpopulations.

**Model Fitting Information**

| Model | Model Fitting Criteria | Likelihood Ratio Tests |
|---|---|---|

| | AIC | BIC | -2 Log Likelihood | Chi-Square | df | Sig. |
|---|---|---|---|---|---|---|
| Intercept Only | 9563.573 | 9577.244 | 9559.573 | | | |
| Final | 8362.312 | 8663.066 | 8274.312 | 1285.261 | 42 | .000 |

| Goodness-of-Fit | | | |
|---|---|---|---|
| | Chi-Square | df | Sig. |
| Pearson | 13573.883 | 12828 | .000 |
| Deviance | 8274.312 | 12828 | 1.000 |

Likelihood Ratio Tests

| | Model Fitting Criteria | | | Likelihood Ratio Tests | | |
|---|---|---|---|---|---|---|
| Effect | AIC of Reduced Model | BIC of Reduced Model | -2 Log Likelihood of Reduced Model | Chi-Square | df | Sig. |
| Intercept | 8362.312 | 8663.066 | 8274.312[a] | .000 | 0 | . |
| SAtis_Services | 8358.721 | 8645.804 | 8274.721 | .409 | 2 | .815 |
| Public_Trans | 8370.226 | 8657.309 | 8286.226 | 11.914 | 2 | .003 |
| HH_Assets | 8367.758 | 8654.841 | 8283.758 | 9.446 | 2 | .009 |
| Comm_Parti | 8360.744 | 8647.827 | 8276.744 | 2.432 | 2 | .296 |
| sATIS.gOV | 8390.010 | 8677.094 | 8306.010 | 31.698 | 2 | .000 |
| Personal_Safety | 8374.281 | 8661.364 | 8290.281 | 15.969 | 2 | .000 |
| Services | 8361.340 | 8648.423 | 8277.340 | 3.028 | 2 | .220 |
| Total monthly income by all household members | 8380.613 | 8667.697 | 8296.613 | 22.301 | 2 | .000 |
| Highest level of education completed (recoded) | 8362.915 | 8649.999 | 8278.915 | 4.603 | 2 | .100 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Satisfaction: Health services that government provides | 8364.801 | 8651.884 | 8280.801 | 6.489 | 2 | .039 |
| Satisfaction: Safety and security provided by govt. where you live | 8370.246 | 8657.329 | 8286.246 | 11.934 | 2 | .003 |
| Satisfaction: Working conditions in your job | 8413.482 | 8700.566 | 8329.482 | 55.170 | 2 | .000 |
| What is your employment status (recoded)? | 8362.312 | 8663.066 | 8274.312[a] | .000 | 0 | . |
| Satisfaction: Leisure time | 8559.428 | 8846.511 | 8475.428 | 201.116 | 2 | .000 |
| Satisfaction: Area / neighbourhood you live in | 8465.131 | 8752.214 | 8381.131 | 106.819 | 2 | .000 |
| Satisfaction: Amount of money available to respondent personally? | 8443.713 | 8730.797 | 8359.713 | 85.401 | 2 | .000 |
| Satisfaction: Dwelling | 8370.782 | 8657.865 | 8286.782 | 12.470 | 2 | .002 |
| Municipality | 8366.362 | 8653.445 | 8282.362 | 8.050 | 2 | .018 |
| Dwelling ownership | 8370.417 | 8616.488 | 8298.417 | 24.105 | 8 | .002 |

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Parameter Estimates

| Satisfaction: Life as a whole[a] | B | Std. Error | Wald | df | Sig. | Exp(B) | 95% Confidence Interval for Exp(B) | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower Bound | Upper Bound |
| Intercept | -3.014 | .663 | 20.673 | 1 | .000 | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Neither satisfied or dissatisfied | SAtis_Services | .061 | .098 | .384 | 1 | .535 | 1.063 | .877 | 1.288 |
| | Public_Trans | .320 | .118 | 7.377 | 1 | .007 | 1.377 | 1.093 | 1.735 |
| | HH_Assets | -.079 | .035 | 5.141 | 1 | .023 | .924 | .864 | .989 |
| | Comm_Parti | -.133 | .089 | 2.222 | 1 | .136 | .876 | .735 | 1.043 |
| | sATIS.gOV | .044 | .043 | 1.063 | 1 | .302 | 1.045 | .961 | 1.136 |
| | Personal_Safety | -.012 | .056 | .050 | 1 | .824 | .988 | .886 | 1.101 |
| | Services | -.124 | .074 | 2.833 | 1 | .092 | .883 | .764 | 1.021 |
| | Total monthly income by all household members | -.004 | .007 | .313 | 1 | .576 | .996 | .982 | 1.010 |
| | Highest level of education completed (recoded) | -.055 | .028 | 3.778 | 1 | .052 | .946 | .895 | 1.000 |
| | Satisfaction: Health services that government provides | -.056 | .028 | 4.037 | 1 | .045 | .945 | .895 | .999 |
| | Satisfaction: Safety and security provided by govt. where you live | .086 | .041 | 4.421 | 1 | .035 | 1.090 | 1.006 | 1.182 |
| | Satisfaction: Working conditions in your job | .120 | .048 | 6.272 | 1 | .012 | 1.127 | 1.026 | 1.238 |
| | What is your employment status (recoded)? | 0[b] | . | . | 0 | . | . | . | . |
| | Satisfaction: Leisure time | .500 | .056 | 78.927 | 1 | .000 | 1.649 | 1.476 | 1.841 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Satisfaction: Area / neighbourhood you live in | .274 | .055 | 24.693 | 1 | .000 | 1.316 | 1.181 | 1.466 |
| | Satisfaction: Amount of money available to respondent personally? | .265 | .042 | 39.235 | 1 | .000 | 1.303 | 1.200 | 1.416 |
| | Satisfaction: Dwelling | -.135 | .056 | 5.913 | 1 | .015 | .874 | .784 | .974 |
| | Municipality | -.025 | .020 | 1.534 | 1 | .216 | .975 | .938 | 1.015 |
| | [Dwelling ownership=1] | -1.287 | .538 | 5.728 | 1 | .017 | .276 | .096 | .792 |
| | [Dwelling ownership=2] | -1.014 | .533 | 3.627 | 1 | .057 | .363 | .128 | 1.030 |
| | [Dwelling ownership=3] | -1.008 | .535 | 3.551 | 1 | .060 | .365 | .128 | 1.041 |
| | [Dwelling ownership=6] | -1.188 | .534 | 4.957 | 1 | .026 | .305 | .107 | .867 |
| | [Dwelling ownership=15] | 0[b] | . | . | 0 | . | . | . | . |
| Dissatisfied | Intercept | -6.298 | .631 | 99.670 | 1 | .000 | | | |
| | SAtis_Services | -.001 | .090 | .000 | 1 | .987 | .999 | .838 | 1.190 |
| | Public_Trans | -.188 | .121 | 2.433 | 1 | .119 | .828 | .654 | 1.049 |
| | HH_Assets | -.083 | .034 | 5.989 | 1 | .014 | .920 | .860 | .984 |
| | Comm_Parti | -.056 | .081 | .475 | 1 | .491 | .946 | .807 | 1.109 |
| | sATIS.gOV | .233 | .042 | 31.585 | 1 | .000 | 1.263 | 1.164 | 1.370 |
| | Personal_Safety | .203 | .052 | 14.952 | 1 | .000 | 1.225 | 1.105 | 1.357 |
| | Services | -.043 | .065 | .442 | 1 | .506 | .958 | .843 | 1.088 |
| | Total monthly income by all household members | -.034 | .007 | 21.523 | 1 | .000 | .966 | .952 | .980 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Highest level of education completed (recoded) | .012 | .026 | .203 | 1 | .653 | 1.012 | .961 | 1.065 |
| | Satisfaction: Health services that government provides | -.052 | .028 | 3.537 | 1 | .060 | .949 | .899 | 1.002 |
| | Satisfaction: Safety and security provided by govt. where you live | .123 | .040 | 9.609 | 1 | .002 | 1.131 | 1.046 | 1.222 |
| | Satisfaction: Working conditions in your job | .311 | .042 | 55.804 | 1 | .000 | 1.364 | 1.257 | 1.480 |
| | What is your employment status (recoded)? | 0[b] | . | . | 0 | . | . | . | . |
| | Satisfaction: Leisure time | .658 | .050 | 174.978 | 1 | .000 | 1.931 | 1.751 | 2.128 |
| | Satisfaction: Area / neighbourhood you live in | .481 | .047 | 103.842 | 1 | .000 | 1.617 | 1.475 | 1.774 |
| | Satisfaction: Amount of money available to respondent personally? | .322 | .043 | 56.309 | 1 | .000 | 1.380 | 1.269 | 1.501 |
| | Satisfaction: Dwelling | .086 | .046 | 3.456 | 1 | .063 | 1.090 | .995 | 1.193 |
| | Municipality | -.050 | .018 | 7.877 | 1 | .005 | .951 | .918 | .985 |
| | [Dwelling ownership=1] | -1.143 | .511 | 5.004 | 1 | .025 | .319 | .117 | .868 |
| | [Dwelling ownership=2] | -.884 | .504 | 3.074 | 1 | .080 | .413 | .154 | 1.110 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | [Dwelling ownership=3] | -.651 | .505 | 1.661 | 1 | .197 | .522 | .194 | 1.403 |
| | [Dwelling ownership=6] | -.760 | .504 | 2.274 | 1 | .132 | .468 | .174 | 1.256 |
| | [Dwelling ownership=15] | 0[b] | . | . | 0 | . | . | . | . |

a. The reference category is: Satisfied.

b. This parameter is set to zero because it is redundant.

QoL IV

Case Processing Summary

| | | N | Marginal Percentage |
|---|---|---|---|
| 7.9 - Satisfaction: Life as a whole | Satisfied | 3068.213036873543400 | 67.8% |
| | Neither satisfied nor dissatisfied | 805.989598282755400 | 17.8% |
| | Dissatisfied | 652.415974589828700 | 14.4% |
| 1.3 - Dwelling ownership (after coding of 'Other verbatim') | Owned, but paying off a bond | 1298.956816557554000 | 28.7% |
| | Owned and fully paid off | 1824.390833179478000 | 40.3% |
| | Free RDP house | 942.930589442238300 | 20.8% |
| | Transfer of title deed of existing government house | 252.501011960815650 | 5.6% |
| | Occupation of vacant dwelling | 207.839358606035300 | 4.6% |
| Valid | | 4526.618609746131000 | 100.0% |
| Missing | | 10154.705511457236000 | |
| Total | | 14681.324121203368000 | |
| Subpopulation | | 4333[a] | |

a. The dependent variable has only one value observed in 4333 (100,0%) subpopulations.

**Model Fitting Information**

| Model | Model Fitting Criteria | | | Likelihood Ratio Tests | | |
|---|---|---|---|---|---|---|
| | AIC | BIC | -2 Log Likelihood | Chi-Square | df | Sig. |
| Intercept Only | 7699.583 | 7712.418 | 7695.583 | | | |
| Final | 6562.659 | 6819.369 | 6482.659 | 1212.923 | 38 | .000 |

**Goodness-of-Fit**

| | Chi-Square | df | Sig. |
|---|---|---|---|
| Pearson | 9446.569 | 8626 | .000 |
| Deviance | 6482.659 | 8626 | 1.000 |

**Likelihood Ratio Tests**

| Effect | Model Fitting Criteria | | | Likelihood Ratio Tests | | |
|---|---|---|---|---|---|---|
| | AIC of Reduced Model | BIC of Reduced Model | -2 Log Likelihood of Reduced Model | Chi-Square | df | Sig. |
| Intercept | 6562.659 | 6819.369 | 6482.659[a] | .000 | 0 | . |
| 1.17 - Satisfaction: Dwelling | 6573.500 | 6817.374 | 6497.500 | 14.841 | 2 | .001 |
| 3.1 - Improvement in community / suburb over last 12 months | 6561.452 | 6805.325 | 6485.452 | 2.792 | 2 | .248 |
| 7.1 - Satisfaction: Amount of money available to respondent personally? | 6582.692 | 6826.565 | 6506.692 | 24.032 | 2 | .000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7.7 - Satisfaction: Leisure time | 6864.744 | 7108.618 | 6788.744 | 306.085 | 2 | .000 |
| 7.8 - Satisfaction: Area / neighbourhood you live in | 6757.163 | 7001.037 | 6681.163 | 198.504 | 2 | .000 |
| Employment Status | 6562.659 | 6819.369 | 6482.659[a] | .000 | 0 | . |
| OB_Services | 6562.158 | 6806.032 | 6486.158 | 3.499 | 2 | .174 |
| OB_HH_Assets | 6582.923 | 6826.796 | 6506.923 | 24.263 | 2 | .000 |
| 11.5 - Satisfaction with health services provided by the health care facility you usually use | 6562.692 | 6806.566 | 6486.692 | 4.033 | 2 | .133 |
| 9.6 - Satisfaction: Safety and security provided by govt. where you live | 6564.227 | 6808.101 | 6488.227 | 5.568 | 2 | .062 |
| 2016 Municipality | 6561.655 | 6805.529 | 6485.655 | 2.995 | 2 | .224 |
| 11.1 - Where do you usually go for medical care? | 6580.748 | 6824.622 | 6504.748 | 22.089 | 2 | .000 |
| 12.10 - Total monthly income by all household members | 6558.773 | 6802.647 | 6482.773 | .114 | 2 | .945 |
| COMM_MEETINGS | 6568.934 | 6812.808 | 6492.934 | 10.275 | 2 | .006 |
| 8.25 - Satisfaction: Working conditions in your job | 6568.474 | 6812.347 | 6492.474 | 9.814 | 2 | .007 |
| SB_Neigh_Safety | 6560.875 | 6804.749 | 6484.875 | 2.216 | 2 | .330 |
| 1.3 - Dwelling ownership (after coding of 'Other verbatim') | 6564.030 | 6769.397 | 6500.030 | 17.370 | 8 | .026 |

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

**Parameter Estimates**

| 7.9 - Satisfaction: Life as a whole[a] | | B | Std. Error | Wald | df | Sig. | Exp(B) | 95% Confidence Interval for Exp(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower Bound | Upper Bound |
| Neither satisfied nor dissatisfied | Intercept | -3.521 | .406 | 75.337 | 1 | .000 | | | |
| | 1.17 - Satisfaction: Dwelling | .026 | .047 | .301 | 1 | .583 | 1.026 | .936 | 1.126 |
| | 3.1 - Improvement in community / suburb over last 12 months | .067 | .049 | 1.837 | 1 | .175 | 1.069 | .971 | 1.177 |
| | 7.1 - Satisfaction: Amount of money available to respondent personally? | -.092 | .041 | 5.031 | 1 | .025 | .912 | .842 | .988 |
| | 7.7 - Satisfaction: Leisure time | .708 | .054 | 174.937 | 1 | .000 | 2.030 | 1.828 | 2.255 |
| | 7.8 - Satisfaction: Area / neighbourhood you live in | .485 | .051 | 90.005 | 1 | .000 | 1.624 | 1.469 | 1.796 |
| | Employment Status | 0[b] | . | . | 0 | . | . | . | . |
| | OB_Services | -.134 | .073 | 3.350 | 1 | .067 | .875 | .758 | 1.010 |
| | OB_HH_Assets | -.985 | .205 | 23.176 | 1 | .000 | .373 | .250 | .558 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 11.5 - Satisfaction with health services provided by the health care facility you usually use | .089 | .045 | 4.011 | 1 | .045 | 1.093 | 1.002 | 1.193 |
| | 9.6 - Satisfaction: Safety and security provided by govt. where you live | .055 | .044 | 1.612 | 1 | .204 | 1.057 | .970 | 1.151 |
| | 2016 Municipality | .002 | .024 | .007 | 1 | .934 | 1.002 | .955 | 1.051 |
| | 11.1 - Where do you usually go for medical care? | -.050 | .051 | .976 | 1 | .323 | .951 | .861 | 1.051 |
| | 12.10 - Total monthly income by all household members | .001 | .009 | .004 | 1 | .950 | 1.001 | .983 | 1.019 |
| | COMM_MEETINGS | -1.089 | .362 | 9.036 | 1 | .003 | .337 | .165 | .685 |
| | 8.25 - Satisfaction: Working conditions in your job | .051 | .049 | 1.108 | 1 | .293 | 1.053 | .957 | 1.158 |
| | SB_Neigh_Safety | .059 | .052 | 1.318 | 1 | .251 | 1.061 | .959 | 1.174 |
| | [1.3 - Dwelling ownership (after coding of 'Other verbatim')=1] | -.155 | .233 | .441 | 1 | .507 | .857 | .543 | 1.352 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | [1.3 - Dwelling ownership (after coding of 'Other verbatim')=2] | -.163 | .220 | .552 | 1 | .458 | .850 | .552 | 1.306 |
| | [1.3 - Dwelling ownership (after coding of 'Other verbatim')=5] | -.570 | .231 | 6.079 | 1 | .014 | .566 | .360 | .890 |
| | [1.3 - Dwelling ownership (after coding of 'Other verbatim')=6] | -.154 | .270 | .324 | 1 | .569 | .857 | .505 | 1.456 |
| | [1.3 - Dwelling ownership (after coding of 'Other verbatim')=8] | 0[b] | . | . | 0 | . | . | . | . |
| Dissatisfied | Intercept | -6.500 | .465 | 195.400 | 1 | .000 | | | |
| | 1.17 - Satisfaction: Dwelling | .189 | .050 | 14.282 | 1 | .000 | 1.208 | 1.095 | 1.333 |
| | 3.1 - Improvement in community / suburb over last 12 months | -.033 | .058 | .328 | 1 | .567 | .967 | .863 | 1.084 |
| | 7.1 - Satisfaction: Amount of money available to respondent personally? | .175 | .050 | 12.426 | 1 | .000 | 1.191 | 1.081 | 1.313 |
| | 7.7 - Satisfaction: Leisure time | .863 | .057 | 226.275 | 1 | .000 | 2.370 | 2.118 | 2.652 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 7.8 - Satisfaction: Area / neighbourhood you live in | .708 | .054 | 169.560 | 1 | .000 | 2.029 | 1.824 | 2.257 |
| | Employment Status | 0[b] | . | . | 0 | . | . | . | . |
| | OB_Services | -.034 | .076 | .199 | 1 | .656 | .967 | .832 | 1.123 |
| | OB_HH_Assets | -.598 | .259 | 5.311 | 1 | .021 | .550 | .331 | .915 |
| | 11.5 - Satisfaction with health services provided by the health care facility you usually use | .044 | .050 | .777 | 1 | .378 | 1.045 | .948 | 1.152 |
| | 9.6 - Satisfaction: Safety and security provided by govt. where you live | .114 | .050 | 5.185 | 1 | .023 | 1.121 | 1.016 | 1.236 |
| | 2016 Municipality | -.046 | .029 | 2.571 | 1 | .109 | .955 | .902 | 1.010 |
| | 11.1 - Where do you usually go for medical care? | -.307 | .067 | 20.803 | 1 | .000 | .736 | .645 | .839 |
| | 12.10 - Total monthly income by all household members | -.003 | .011 | .088 | 1 | .767 | .997 | .976 | 1.018 |
| | COMM_MEETINGS | -.065 | .353 | .034 | 1 | .855 | .937 | .469 | 1.872 |
| | 8.25 - Satisfaction: Working conditions in your job | .163 | .052 | 9.891 | 1 | .002 | 1.177 | 1.063 | 1.303 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | SB_Neigh_Safety | .074 | .059 | 1.592 | 1 | .207 | 1.077 | .960 | 1.209 |
| | [1.3 - Dwelling ownership (after coding of 'Other verbatim')=1] | -.147 | .263 | .313 | 1 | .576 | .863 | .516 | 1.444 |
| | [1.3 - Dwelling ownership (after coding of 'Other verbatim')=2] | .065 | .236 | .076 | 1 | .783 | 1.067 | .672 | 1.696 |
| | [1.3 - Dwelling ownership (after coding of 'Other verbatim')=5] | -.149 | .246 | .369 | 1 | .544 | .861 | .532 | 1.395 |
| | [1.3 - Dwelling ownership (after coding of 'Other verbatim')=6] | .018 | .294 | .004 | 1 | .950 | 1.019 | .572 | 1.812 |
| | [1.3 - Dwelling ownership (after coding of 'Other verbatim')=8] | 0[b] | . | . | 0 | . | . | . | . |

a. The reference category is: Satisfied.

b. This parameter is set to zero because it is redundant.

Classification

| | | Predicted | | |
|---|---|---|---|---|
| Observed | Satisfied | Neither satisfied nor dissatisfied | Dissatisfied | Percent Correct |
| Satisfied | 2907.28665176720500 | 30.6176236000954030 | 130.308761506233800 | 94.8% |
| Neither satisfied nor dissatisfied | 651.251780021210200 | 60.774565747771620 | 93.963252513774500 | 7.5% |

| | | | | |
|---|---|---|---|---|
| Dissatisfied | 375.437093021468400 | 61.928793328849600 | 215.050088239511640 | 33.0% |
| Overall Percentage | 86.9% | 3.4% | 9.7% | 70.3% |

QoL V

Case Processing Summary

| | | N | Marginal Percentage |
|---|---|---|---|
| Q10.10 - Satisfaction: Life as whole? | Satisfied | 3109.0632233850 | 71.1% |
| | Neither satisfied nor dissatisfied | 606.3818638880 | 13.9% |
| | Dissatisfied | 654.4797570710 | 15.0% |
| Q1.05 - Dwelling Ownership | Owned,but paying off a bond | 1087.3994705670 | 24.9% |
| | Owned, fully paid off | 1302.2667340620 | 29.8% |
| | Free RDP house | 884.1335440070 | 20.2% |
| | Built with own or family funds/contributions | 487.1258681710 | 11.1% |
| | Used government housing subsidy and own contribution | 93.0606178820 | 2.1% |
| | Transfer of title deeds of existing government house | 85.6975559950 | 2.0% |
| | Inherited | 172.9546504940 | 4.0% |
| | Other | 257.2864031660 | 5.9% |
| Valid | | 4369.9248443440 | 100.0% |

| | | |
|---|---|---|
| Missing | 17023.2311447501 | |
| Total | 21393.1559890941 | |
| Subpopulation | 4126[a] | |

a. The dependent variable has only one value observed in 4126 (100,0%) subpopulations.

Model Fitting Information

| Model | Model Fitting Criteria | | | Likelihood Ratio Tests | | |
|---|---|---|---|---|---|---|
| | AIC | BIC | -2 Log Likelihood | Chi-Square | df | Sig. |
| Intercept Only | 7001.269 | 7014.034 | 6997.269 | | | |
| Final | 5981.199 | 6300.324 | 5881.199 | 1116.070 | 48 | .000 |

Goodness-of-Fit

| | Chi-Square | df | Sig. |
|---|---|---|---|
| Pearson | 8423.931 | 8202 | .042 |
| Deviance | 5881.199 | 8202 | 1.000 |

Likelihood Ratio Tests

| Effect | Model Fitting Criteria | | | Likelihood Ratio Tests | | |
|---|---|---|---|---|---|---|
| | AIC of Reduced Model | BIC of Reduced Model | -2 Log Likelihood of Reduced Model | Chi-Square | df | Sig. |
| Intercept | 5981.199 | 6300.324 | 5881.199[a] | .000 | 0 | . |
| Survey municipality (coded) | 5981.743 | 6288.103 | 5885.743 | 4.544 | 2 | .103 |
| Serivces | 5982.139 | 6288.499 | 5886.139 | 4.940 | 2 | .085 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Satis_Services | 5978.870 | 6285.230 | 5882.870 | 1.670 | 2 | .434 |
| HH_Assets | 5983.125 | 6289.485 | 5887.125 | 5.926 | 2 | .052 |
| Comm_Parti | 5984.142 | 6290.502 | 5888.142 | 6.943 | 2 | .031 |
| Satis_Gov | 5998.531 | 6304.891 | 5902.531 | 21.331 | 2 | .000 |
| Personal_Safety | 5989.320 | 6295.680 | 5893.320 | 12.121 | 2 | .002 |
| Q15.20 - Total amount of money brought into household by members/month | 5977.238 | 6283.598 | 5881.238 | .039 | 2 | .981 |
| Q14.03 - Satisfaction: Health services you usually use? | 5979.391 | 6285.751 | 5883.391 | 2.192 | 2 | .334 |
| Q14.01 - Where do you usually go for medical care? | 5990.169 | 6296.529 | 5894.169 | 12.969 | 2 | .002 |
| Q12.06 - Satisfaction: Security services offered at current residence by government | 5979.901 | 6286.261 | 5883.901 | 2.702 | 2 | .259 |
| Q11.22 - Satisfaction: Working conditions of current job | 6008.069 | 6314.429 | 5912.069 | 30.869 | 2 | .000 |
| Q11.20 - What is your employment status? | 5987.752 | 6294.112 | 5891.752 | 10.553 | 2 | .005 |
| Q10.08 - Satisfaction: Available time for leisure? | 6102.194 | 6408.554 | 6006.194 | 124.994 | 2 | .000 |
| Q10.09 - Satisfaction: Neighbourhood? | 6059.095 | 6365.456 | 5963.095 | 81.896 | 2 | .000 |
| Q10.01 - Satisfaction: Amount of money available to respondent personally? | 6033.824 | 6340.184 | 5937.824 | 56.625 | 2 | .000 |
| Q2.01 - Satisfaction: Dwelling | 5996.918 | 6303.278 | 5900.918 | 19.719 | 2 | .000 |
| Q1.05 - Dwelling Ownership | 5961.885 | 6191.655 | 5889.885 | 8.686 | 14 | .851 |

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Parameter Estimates

| Q10.10 - Satisfaction: Life as whole?[a] | | B | Std. Error | Wald | df | Sig. | Exp(B) | 95% Confidence Interval for Exp(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower Bound | Upper Bound |
| Neither satisfied nor dissatisfied | Intercept | -5.471 | .495 | 122.276 | 1 | .000 | | | |
| | Survey municipality (coded) | -.006 | .027 | .041 | 1 | .840 | .995 | .943 | 1.049 |
| | Serivces | -.089 | .061 | 2.169 | 1 | .141 | .915 | .812 | 1.030 |
| | Satis_Services | -.110 | .093 | 1.396 | 1 | .237 | .896 | .747 | 1.075 |
| | HH_Assets | -.042 | .274 | .024 | 1 | .878 | .959 | .561 | 1.640 |
| | Comm_Parti | -.180 | .161 | 1.256 | 1 | .262 | .835 | .610 | 1.144 |
| | Satis_Gov | .178 | .059 | 9.266 | 1 | .002 | 1.195 | 1.066 | 1.341 |
| | Personal_Safety | .201 | .058 | 12.128 | 1 | .000 | 1.223 | 1.092 | 1.370 |
| | Q15.20 - Total amount of money brought into household by members/month | .000 | .008 | .001 | 1 | .979 | 1.000 | .985 | 1.016 |
| | Q14.03 - Satisfaction: Health services you usually use? | .027 | .051 | .285 | 1 | .593 | 1.027 | .930 | 1.135 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Q14.01 - Where do you usually go for medical care? | .258 | .076 | 11.629 | 1 | .001 | 1.294 | 1.116 | 1.500 |
| | Q12.06 - Satisfaction: Security services offered at current residence by government | .030 | .050 | .361 | 1 | .548 | 1.031 | .934 | 1.137 |
| | Q11.22 - Satisfaction: Working conditions of current job | .133 | .053 | 6.297 | 1 | .012 | 1.143 | 1.030 | 1.268 |
| | Q11.20 - What is your employment status? | .069 | .028 | 6.286 | 1 | .012 | 1.072 | 1.015 | 1.132 |
| | Q10.08 - Satisfaction: Available time for leisure? | .475 | .057 | 68.505 | 1 | .000 | 1.608 | 1.437 | 1.799 |
| | Q10.09 - Satisfaction: Neighbourhood? | .250 | .056 | 19.549 | 1 | .000 | 1.284 | 1.149 | 1.434 |
| | Q10.01 - Satisfaction: Amount of money available to respondent personally? | .054 | .049 | 1.210 | 1 | .271 | 1.055 | .959 | 1.161 |
| | Q2.01 - Satisfaction: Dwelling | .156 | .051 | 9.341 | 1 | .002 | 1.169 | 1.057 | 1.291 |
| | [Q1.05 - Dwelling Ownership=1] | -.139 | .238 | .343 | 1 | .558 | .870 | .546 | 1.387 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | [Q1.05 - Dwelling Ownership=2] | -.052 | .227 | .054 | 1 | .817 | .949 | .609 | 1.480 |
| | [Q1.05 - Dwelling Ownership=3] | .096 | .223 | .184 | 1 | .668 | 1.100 | .710 | 1.705 |
| | [Q1.05 - Dwelling Ownership=4] | .075 | .233 | .104 | 1 | .747 | 1.078 | .683 | 1.701 |
| | [Q1.05 - Dwelling Ownership=5] | -.165 | .380 | .188 | 1 | .665 | .848 | .403 | 1.787 |
| | [Q1.05 - Dwelling Ownership=6] | .074 | .360 | .042 | 1 | .837 | 1.077 | .532 | 2.179 |
| | [Q1.05 - Dwelling Ownership=7] | .100 | .293 | .117 | 1 | .732 | 1.105 | .622 | 1.964 |
| | [Q1.05 - Dwelling Ownership=8] | 0[b] | . | . | 0 | . | . | . | . |
| Dissatisfied | Intercept | -8.392 | .539 | 242.421 | 1 | .000 | | | |
| | Survey municipality (coded) | -.065 | .031 | 4.268 | 1 | .039 | .938 | .882 | .997 |
| | Serivces | -.118 | .059 | 4.031 | 1 | .045 | .889 | .792 | .997 |
| | Satis_Services | .017 | .095 | .031 | 1 | .861 | 1.017 | .845 | 1.224 |
| | HH_Assets | -.681 | .286 | 5.677 | 1 | .017 | .506 | .289 | .886 |
| | Comm_Parti | .327 | .163 | 4.013 | 1 | .045 | 1.387 | 1.007 | 1.910 |
| | Satis_Gov | .262 | .064 | 16.672 | 1 | .000 | 1.299 | 1.146 | 1.473 |
| | Personal_Safety | .067 | .060 | 1.229 | 1 | .268 | 1.069 | .950 | 1.203 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Q15.20 - Total amount of money brought into household by members/month | .002 | .008 | .038 | 1 | .845 | 1.002 | .986 | 1.018 |
| | Q14.03 - Satisfaction: Health services you usually use? | .073 | .049 | 2.195 | 1 | .138 | 1.076 | .977 | 1.185 |
| | Q14.01 - Where do you usually go for medical care? | .188 | .092 | 4.190 | 1 | .041 | 1.206 | 1.008 | 1.444 |
| | Q12.06 - Satisfaction: Security services offered at current residence by government | .088 | .054 | 2.653 | 1 | .103 | 1.092 | .982 | 1.214 |
| | Q11.22 - Satisfaction: Working conditions of current job | .280 | .051 | 30.385 | 1 | .000 | 1.323 | 1.198 | 1.461 |
| | Q11.20 - What is your employment status? | .080 | .030 | 7.267 | 1 | .007 | 1.083 | 1.022 | 1.147 |
| | Q10.08 - Satisfaction: Available time for leisure? | .563 | .057 | 97.237 | 1 | .000 | 1.755 | 1.570 | 1.963 |
| | Q10.09 - Satisfaction: Neighbourhood? | .476 | .054 | 78.712 | 1 | .000 | 1.609 | 1.449 | 1.787 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Q10.01 - Satisfaction: Amount of money available to respondent personally? | .427 | .059 | 52.552 | 1 | .000 | 1.533 | 1.366 | 1.721 |
| Q2.01 - Satisfaction: Dwelling | .200 | .050 | 16.017 | 1 | .000 | 1.221 | 1.107 | 1.346 |
| [Q1.05 - Dwelling Ownership=1] | -.276 | .249 | 1.234 | 1 | .267 | .759 | .466 | 1.235 |
| [Q1.05 - Dwelling Ownership=2] | .002 | .224 | .000 | 1 | .994 | 1.002 | .645 | 1.555 |
| [Q1.05 - Dwelling Ownership=3] | .071 | .217 | .108 | 1 | .742 | 1.074 | .702 | 1.643 |
| [Q1.05 - Dwelling Ownership=4] | -.138 | .227 | .370 | 1 | .543 | .871 | .558 | 1.359 |
| [Q1.05 - Dwelling Ownership=5] | .180 | .331 | .295 | 1 | .587 | 1.197 | .625 | 2.293 |
| [Q1.05 - Dwelling Ownership=6] | -.070 | .365 | .037 | 1 | .848 | .933 | .456 | 1.908 |
| [Q1.05 - Dwelling Ownership=7] | -.115 | .306 | .140 | 1 | .708 | .892 | .489 | 1.625 |
| [Q1.05 - Dwelling Ownership=8] | 0[b] | . | . | 0 | . | . | . | . |

a. The reference category is: Satisfied.

b. This parameter is set to zero because it is redundant.