



UNIVERSITY *of the* WESTERN CAPE

Faculty of Economic and Management Sciences

Institute for Social Development

***Why we eat what we eat: Analysing the Effects of Gender on Food Choice
Amongst Adults in Mitchells Plain, Cape Town.***

A mini-thesis submitted in partial fulfilment of the requirements for the degree of Master of Arts in Development Studies at the Institute for Social Development, Faculty of Economic and Management Sciences, University of the Western Cape.

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DECLARATION

I declare that '*Why we eat what we eat: Analysing the Effects of Gender on Food Choice Amongst Adults in Mitchells Plain, Cape Town*'. Is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Nishaat Gangen

Signed.....

September 2019



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ABSTRACT

Multiple studies have explored aspects of food choice; however, few have used a gendered approach. Understanding issues relating to food from a gendered perspective has become crucial in terms of combating and preventing diseases and epidemics such as obesity and malnutrition within the 21st century. The notion that men and women have different perspectives in terms of food has become apparent in recent literature. Food has become more than a means to end hunger; rather, it has become a social marker, and a means to identify groups from one another. It has also acted as a means for social interaction amongst individuals. Therefore, males and females practice different eating habits because they hold different cultural, traditional and religious beliefs. Moreover, they also hold different social status within society. Research in western societies has shown that the association between gender and food choice is growing. Most research has shown that foods such as fruits, vegetables, and dairy products are associated with femininity, whilst foods such as meat are associated with masculinity. Although, multiple studies on food choice have concluded that food prices and economic status are the leading reasons for food choice and food intake. This resulting in the assumption that bad food choices are a direct result of one's, economic status. In other words, an individual's economic status often forces them into a lifestyle of malnutrition and unhealthy food choices . Conversely, studies that have used the gendered approach have shown that many studies on food choice have neglected to look at 'preference'. The concept of preference plays a big role in terms of food choice. When choosing the foods, individual's decision can be based as a result of sensory perception. Individuals are likely to consume foods that seem appealing to them or that are familiar. Moreover, factors such as personality also influence the food one consumes. When trying to get a better understanding of food choice, the gender factor allows for a much more in-depth understanding of food choice.

This thesis highlighted that quantitatively there was no significant difference in terms of food intake and gender in Mitchells Plain. However, it did highlight the possible reasons contributing to this. This included factors such as; lack of income, geographic location, and time constraints. The qualitative information also highlighted that there is no difference in terms of gender and food choice in Mitchells Plain. However, the data highlights that people tend to consume particular foods that are easily accessible and foods that suit their lifestyle needs. This can be

seen in the case of respondents who, for example, go to the gym and who need to consume meals that are high in protein or foods that will not affect one's cholesterol or diabetes. In Mitchells Plain, food choice is predominantly determined by the financial state of the individual and location. This then makes the diversity amongst the genders not significant because the majority of the respondents within the area earns a similar income and has reported the same barriers and determinants of food choice within the community of Mitchells Plain.

KEYWORDS: Food choices, Gender, Food security, Food consumption, Obesity, Overweight, Mitchells Plain, Cape Town, Dietary Diversity.



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CHAPTER 1: INTRODUCTION

1. Background and Contextualisation

Unhealthy diets and unequal food systems are prevailing within the developing world. This has resulted in a difference in nutritional intake and an increase in obesity. Moreover, it has led to a rise in diseases such as anorexia and bulimia, which is predominantly caused by malnutrition. Studies which focus on food security have shown that there is a transition towards foods which are high in saturated fats and carbohydrates. Consequently, this has resulted in diets consisting mainly of refined foods. According to Bekiempis (2017), this is mainly due to the fact that these foods are less expensive, as opposed to the healthier alternatives.

However, recent studies have shown that there has been a clear link between food choice and gender. The increase of feminism and masculinity studies in academia has resulted in a demand to use a gender approach to better understand food choice and nutritional intake. The Food and Agriculture Organisation of the United Nation (FAO, 2016) explains that every male, female and child has the right to receive equal access to food; more importantly, they should have access to food that will enable them to receive proper nutrients. However, within developing countries there has been a tendency to focus on women and young girls, as they represent a population group that is viewed as most vulnerable compared to males and young boys who appear to be less vulnerable as they have access to more opportunities such as; property, education, and employment (National Center for Health, 2015). Although women in developing countries make up at least 70 to 90% of the labour force in the agricultural sector, they are still perceived as more vulnerable than that of their male counterparts in terms of food and nutrition (FAO, 2011). However, due to their active role within agriculture they have developed a good understanding of the importance of dietary diversity as well as which foods contain more nutrients than others. This can be seen in research conducted on poor households which have shown that female-headed households are more successful at providing more nutritional foods, compared to male-headed households (FAO, 2016). However, on a larger scale women are still more affected by hunger and poverty.

1.2. Rationale and Significance of the study

Understanding gender-based differences in terms of food choice has become a crucial element in terms of understanding food security and malnutrition on a broader scale. Moreover, understanding food preferences and practices from a gender perspective allows for alternative understanding of food choice. Food has become imbedded within culture, tradition, and religion it has also become integrated into so many other activities and functions within our day-to-day lives. That often the notion of eating has no relation to nutritional intake. Understanding food choice can be described as complicated human behaviour which is influenced by a variety of interrelating factors. These factors include biology, genetic profiles, social and cultural factors. When focusing on food choice most studies have focused on two main factors. The first being; the person making the food and the second external factors influences the choice. Therefore, the need to understand food choice from a gender perspective has become important. Many studies have explored selected aspects of food choices from an ample variety of disciplines and perspectives (Axelson & Brinberg, 1989; Booth, 1994).

The notion that men and women have a different perspective in terms of food has been proven and the few research conducted that has used this approach has shown that there is a difference in terms understanding nutritional intake and food intake (Arganini et al., 2012). This is mainly caused by the fact that food within the 21st century has become more than a means to end hunger but it has become a social marker, it has become a means to identify groups from another. Furthermore, it has also acted as a means for social interaction amongst individuals.

When addressing the question of “why individuals eat what they eat” most researchers have looked at factors that determine what individuals are “able to eat” and not focus on “why” they eat what they eat (De Irala-Esteves et al., 2000). Moreover, the literature surrounding the topic of food choice and gender is conducted in western countries. According to Arganini *et al.*, (2012), research in western societies have shown that the association between gender and food choice is growing within the 21st century. Most research has shown that foods such as fruits, vegetables, and dairy products are associated with femininity, whilst foods such as meat are associated with masculinity (Jensen & Holm, 1999; Sobal, 2005). Although, multiple studies on food choice have concluded that food prices and individuals economic status are the leading reasons for food

choice and food intake. Therefore, bad food choices are assumed to be a direct result of one's economic status. This has resulted in individuals being faced with a lifestyle of malnutrition, unhealthy eating habits, and unhealthy food choices. However, what most of these studies have not focused on is preference. When individuals are choosing the foods that they would like to consume, individual's decision can be based as a result of sensory perception. Individuals are likely to consume foods that seem appealing to them or that are familiar. Moreover, factors such as personality also influence the food one consumes. There are factors that influence food these include; Finance, social, religious and cultural factors. The concept of preference plays a huge role in terms of food we choose and more so when the gender factor is introduced as it allows for a much more in-depth understanding of food choice.

Therefore, studies that have looked at factors beyond economics have highlighted the importance that education, body image, tradition, and culture plays in deciding the foods we consume and each factor is driven by gender roles. Understanding "why" in conjunction with "what" presents an alternative understanding of food choice amongst individuals. Although, research have shown that economic factors can be a leading determinant in terms of food choice it still presents a restricted understanding of individual's food choice (FOA, 2014). As food is a means of aesthetic satisfaction, as different cuisines represent different lifestyles and social status within society. Food choice is more than a biological need; it is shaped by psychological factors as well.

While there has been extensive research conducted on food choice, very little has been conducted in Cape Town with even fewer in the Cape Flats region. Therefore, this thesis will focus on food choice from a gendered perspective, with a particular focus on adults in the middle to low-income community of Mitchells Plain.

1.3. Research Aims and Objectives

The aim of this research is to understand the role gender plays in understanding food choice amongst adults in the area of Mitchells Plain.

1.4. Specific Objectives of the Research:

- To understand food choice amongst adult males and females in Mitchells Plain.

- To provide recommendations to policymakers and implementers on the role gender plays in determining food choice.

1.5. Research Question

What is the difference between food choice amongst adult males and females in the area of Mitchells Plain?

1.6. Chapter Outline

- **Chapter One: Introduction:** The first chapter of the thesis provides a brief background and introduction to the area of study, and outlines the research problem, research questions, and aims and objectives.
- **Chapter Two: Literature Review:** This chapter reviews literature of food choice and gender. It also discusses the state of food security and Food choice at the international and local levels.
- **Chapter Three: Background of case study area:** This chapter highlights both the socio-cultural and economic aspects of the area of Mitchells Plain.
- **Chapter Four: Research Methodology:** This chapter outlines the research methods undertaken to gather the data needed for the thesis.
- **Chapter Five: Data Analysis:** This chapter focuses on the analysis of the findings of the research.
- **Chapter Six: Findings, Recommendations and Conclusions:** This chapter concludes and summarises the findings of the study, and provides some policy recommendations.

CHAPTER 2: LITERATURE REVIEW

2. Introduction

The aim of the literature review is to provide insight into the factors that shape the food we consume and to show the importance gender plays in shaping these decisions. Most of the literature showcases that the key determinants of food choices are related to one's economic status, as well as biological, psychological and physiological factors. However, the literature has not given as much attention to these factors as they relate to gender. Research that has included the gender dynamic has shown that by including the gender element, it provides a much more in-depth understanding of why individuals eat what they eat. This literature review, therefore, aims to present current findings of gender and food choices and to showcase the limitation and gaps within the literature.

2.2. Obesity and overweight

Unhealthy diets are among the leading factors that lead to non-communicable diseases (NCDs) among individuals each year (WHO, 2016). Obesity is estimated to result in 5% of deaths globally each year. Dramane, Ahyi and Akpona (2017) argue that there is a direct link between obesity and the rapid increase in urbanization within developing countries. Urbanization in developing countries has resulted in a decrease in physical activity accompanied by an increase in high calorie-dense diets. Therefore, the rate of obesity and overweight has increased dramatically over the last 10 years. It is for this reason that understanding the drivers of obesity and the overweight epidemic has become a crucial element in order to combat and reduce the risk of obesity globally.

2.3. What are obesity and overweight?

The term obesity refers to the accumulation of excessive fat in adipose tissue (WHO, 2000). According to Luo & Liu, (2016) adipose tissue stores energy in the form of fat. Excessive fat accumulation results in one's health being compromised. Obesity is seen as a risk factor which can result in further chronic diseases such as diabetes, cancer and cardiovascular disease (WHO, 2000). The term obesity and overweight are often used interchangeably; however, there is a

difference between the two. According to the World Health Organisation (WHO, 2018), individuals with a Body Mass Index (BMI) between 25 and 29.9 are considered overweight. Conversely, an individual with a BMI that is higher than 30 is classified as being obese.

The Body Mass Index (BMI) is a statistical method used to indicate whether an individual is obese, overweight, or underweight (WHO, 2018). BMI is calculated by dividing one's height in kilograms (kg) by the square of one's height in meters.

The formula used to calculate BMI:

$$[(\text{Kg}/ \text{m}^2)]$$

Although BMI is a good method to calculate body mass, it is not the only tool that can be used to measure fat or body mass. For example, BMI is not an appropriate measuring tool for athletes, as their robust skeletal frames and masculinity often affect the test results. Often athletes are classified as being overweight due to their excessive muscle and robust figures. BMI is a very good measure to capture the overall fatness in adults. However, if additional information is needed on fat deposition other methods should be used to get an in-depth analysis (Shuster *et al.*, 2012).

The classification of obese and overweight among individuals has become an important issue within society. It allows for the comparison of weight between different populations, age groups, and gender groups. It also allows for the identification of individuals that are at risk of either morbidity or mortality (WHO, 2008:7). The obesity epidemic results in other health risks such as cancers, cardiovascular disease, osteoarthritis, and diabetes. A recent study conducted by Ng, Fleming, & Robinson (2014) shows that being obese or overweight has resulted in over 3.4 million deaths globally. The majority of these deaths were from cardiovascular disease. Therefore, understanding the epidemic creates a basis to evaluate and create interventions that are needed to reduce the epidemic (Ng, Fleming and Robinson, 2014).

2.4. Global trends and influences of obesity

Today it is estimated that 2.1 billion individuals are either are obese or overweight, which is equivalent to 30% of the world's population (Ng, Fleming and Robinson, 2014) A study

conducted in 2013 shows that the rate of adults that are overweight and obese increased phenomenally for both sexes (Ng, Fleming and Robinson, 2014). For men, it has increased from 29% to 37% and for women; it has increased from 30% to 38%. Most studies have shown that obesity and overweight rates are higher for females in both developed and developing countries. Ng et al., (2014) shows that in developing countries men have higher rates for obesity and overweight than females, more prone to suffer from obesity and overweight than males. The study also highlighted that obesity in developed countries has moved from being predominantly high in the older generation to now being exceptionally high among the younger generation.

The obesity epidemic affects people of all ages and incomes brackets. There has been great difficulty in arresting the obesity and overweight epidemic. According to the WHO (2018), there has not been one country that has been able to successfully reduce their obesity rate within their own country within the last three decades. Moreover, Ng et al., (2014) highlight that the rise in overweight and obesity predominantly will take place in low and middle-income countries. This is due to the environmental and societal changes brought upon by economic development and the increase of urbanization.

2.5. Influences of obesity

The main cause of obesity is the result of an imbalance in the number of calories consumed and calories expended. Mitchell, Catenacci, Wyatt, & Hill, (2011) argues that the majority of the experts on obesity have claimed that although biology plays an important role in understanding obesity, environmental and societal changes are the driving force behind this epidemic. Mitchell *et al.*, (2011) goes on to argue that even though our biological make-up affects our height, it is the rapid increase in weight that influences our BMI. This is a direct result of environmental and societal changes in the 21st century.

2.5.1. Environmental and societal changes

The introduction of mass production has allowed for food items to be easily accessible to individuals. However, it is their busy lifestyles that have encouraged bad/poor eating habits. The consumption of calorie-dense foods, coupled with the decrease in physical activity, has resulted

in an increase in overweight and obesity. Individuals have argued that there is not enough time in the day to partake in physical activity. Furthermore, consuming healthy meals is noted as either being too expensive or too time-consuming to prepare (Roudsari *et al.*, 2017). What was also noted was the portion size: healthier meals are smaller and more expensive, whilst energy-dense foods are cheaper and the portion size is larger (Roudsari *et al.*, 2017).

Moreover, physical activity is not always promoted within the workplace as technology is installed to ensure maximum productivity and efficiency (Khakurel, Melkas, and Porras, 2018). This has become problematic as physical inactivity has become the fourth leading risk factor for global mortality. Therefore; societal changes have also resulted in the promotion of sedentary lifestyles. Sedentary refers to lifestyles and daily practices that do not consist of much physical activity and includes activities such as playing video games, watching television and spending hours browsing the internet (Hill, 2003:853). Ultimately, this is a result of environmental and societal changes, accompanied by the lack of supporting policies by the government in various sectors.

Our lifestyle has resulted in the need to go everywhere faster and with greater ease. To ensure greater convenience for customers and workers, there has been significant investment in lifts and elevators in shopping malls and workplaces and have become a common feature in contemporary life. Hill (2003) has argued that we have become a generation that has dedicated its efforts to ensure the improvement of productivity and efficiency within the workplace as well as developed an attitude of wanting more for less by doing less.

2.5.2. Socio-cultural factors

Socio-cultural factors are cited by many scholars as playing an influential role in the obesity and overweight epidemic. The literature on obesity has highlighted that culture plays an important role in shaping the foods we eat. Giddens (2009) defines culture as belonging or ascribing to a particular group who shares learned beliefs and values. This group often influences how one thinks, acts, and reacts to particular issues and trends within society. Culture is transmitted intergenerationally, which suggests that it plays an important role in determining food behaviour especially within the household (Mitchell *et al.*, 2011).

Although the state of being overweight and obese has serious health consequences, in some culture's being obese and overweight has positive connotations. This is prominent in African cultures where being 'bigger' (having a higher BMI) is desired and symbolizes being healthy (WHO, 2016). This can also be seen in the case of Jamaica, where overweight and obese women are viewed as being healthy. They are also associated with holding nurturing and maternal values . Similarly, in Asia, an increase in weight is associated with leading a happy life, and also represents individuals who hold a vast amount of wealth (Kanter and Caballero, 2012).

2.6. The state of obesity in the world

It was only in the late 1990s that the WHO recognized obesity as a global phenomenon. In the early 20th century obesity was classified as a serious disease as its impact on one's health had become prominent, especially within the urban setting (Caballero, 2007). Statistics released by the WHO (2008) showed that there was a gender bias when it came to the epidemic. The difference in percentage regarding overweight and obese between males and females were not significant. The WHO (2018) shows that more than 1.9 million adults aged 18 and older are overweight, of these 650 million are classified as being obese. In 2016 the statistics on obesity and overweight showed that 39% of males and 40% of females were overweight globally. Moreover, of the 13% of the world's adult population who were deemed as being obese, 11% were males and 15% were females (WHO, 2018). The prevalence of world-wide obesity has tripled from 1975 to 2016 (WHO, 2016). The WHO has officially declared overweight and obesity as being one of the top 10 risk conditions globally. This is due to the fact that the state of being obese or overweight is linked to more deaths in the world than any other Non-Communicable Disease (NCD) globally (Ng, Fleming and Robinson, 2014).

According to WHO (2016), the countries with the highest obesity rate are the United States, China, Russia, India, Brazil, Egypt, Mexico, Pakistan, Germany, and Indonesia. Ng et al., (2014) show that 50% of the world's obese individuals reside in these countries. On a global scale, the country with the highest proportion of obese people are in the United States. The US represents 13% of the world's obesity rate. Furthermore, countries such as India and China represent a further 15% of the world's obese population (Ng et al., 2014).

Obesity rates among children and adolescents had increased significantly, especially in the period 1980 to 2013. The prevalence of obesity amongst adolescents and children has increased by 50%. Ng et al., (2014) shows that 24% of boys and 22% of girls were found to be obese in developed countries. The same was observed in developing countries, where 13% of boys and 13% of girls were noted as being overweight or obese. Moreover, in the Middle East and North African countries, the increase in obesity and overweight was particularly high among girls (Ng et al., 2014).

Countries within North Africa, The Middle East, Central America, and the Pacific islands were noted as having obesity and overweight levels up to 44%. Amongst these countries, the regions with the highest proportion of obesity and overweight are found in the Middle East and North Africa. Ng et al., (2014) shows that more than 58% of the male population and 65% of their female population are either classified as being obese or overweight. Furthermore, in Central America, similar results were found as 57% males and 65% of their female population were deemed as either being overweight or obese. In the Pacific Islands more than 51% of females were noted as being obese or overweight and 38% males (Ng et al., 2014).

2.6.1. Obesity and the developing world

In the early 1990's the WHO report on managing and preventing obesity had focused primarily on the developed world. However, within recent literature, it has shown that there is a dramatic increase in obesity and overweight in both the developed and developing world. Recent data collected by WHO (2016) indicates that obesity is increasing in the developed and developing world.

The majority of middle-low income countries are faced with a double burden of disease. Most of these countries have to deal with infectious disease and malnutrition. Recently these countries have to deal with the rapid upsurge of NCD's and risk factors such as obesity and overweight. This has become prominent within urban settings. According to the Institute for Health Metrics and Evaluation (IHME), South African women have the highest obesity rate in sub-Saharan Africa, with 42% of females in South Africa are obese while only 14% of males are noted as being obese (Ng et al., 2014). Overall 30% of the South African population are obese.

2.7. Gender and obesity

The literature on obesity has shown a strong correlation between high levels of overweight and obesity in females compared to males (Martorell *et al.*, 2010). A global gender study conducted between 1975 and 2014 on the disparities in weight found that out of 19.1 million participants used in the study, the levels of obesity and overweight were higher in females than males. Levels of obesity amongst males have increased from 3.2% in 1975 to 14.9 in 2014. For females, it had increased from 6.4% in 1975 to 14.9% in 2014. Not only have the statistics doubled for females in terms of the obesity rates from 1975 to 2014, but the results also showed that there are twice as many obese females than males (Di Cesare *et al.*, 2016). Furthermore, the study showed that an additional 2.3% of males and 5% of females were recorded as being severely obese [i.e. a $BMI \geq 35 \text{ kg}/M^2$] globally (Di Cesare *et al.*, 2016).

There are multiple reasons for the difference in the percentage of obesity. The most influential factor is the lack of physical activity. According to (Census, 2011), the reason for this is due to gender transitions and norms. Norms within society often discourage teenagers and women from participating in organized physical activity (WHO, 2016). Organized physical activity refers to participating in any sporting activity on a regular basis (Dollman, Norton and Norton, 2005). Moreover, in low-income communities' high levels of crime limit individuals from participating in 'free' physical activity such as running and jogging. Often their environment does not allow for it as there are not sufficient safety measures.

Furthermore, when looking at the type of work females are prone to partake in, the majority of females partake in the sedentary type of work, where minimal physical activity is required. By contrast, males partake in work that requires basic physical activity. This is especially prominent in low-income or disadvantaged communities where blue-collar jobs are dominant. Males do not necessarily eat healthier than females, but due to the constant physical labour required they are able to burn excess fats and carbohydrates needed to maintain a healthy BMI. On the other hand, females who consume high-calorie dense foods and don't partake in any physical activity are prone to have higher BMI's. This has resulted in the percentage of females globally being higher than that of males (Drummond, Crombie, Cursiter, and Kirk, 1998).

2.8. Food security and diet

In South Africa, food insecurity is directly linked to a lack of purchasing power (Koch, 2011). The state of poverty and hunger in South Africa is shaped by the legacy of apartheid and colonialism which dispossessed the Black majority of assets such as land and denied them opportunities to access markets, human capital, infrastructure and development (Koch, 2011). After the end of apartheid in 1994, policies were put in place to address some of the impacts that the apartheid regime had on the country and its people. The Integrated Food Security Strategy (IFSS) was developed as a multidimensional strategy, which was aimed at developing and coordinating programmes that would encourage and ensure food security in South Africa. The IFSS had a similar goal as that of the Millennium Development Goals, it that is aimed “ ...to attain universal physical, social and economic access to sufficient, safe and nutritious food by all South Africans at all times to meet their dietary and food preferences for an active and healthy life” (Koch, 2011:4).

2.8.1. Social class and diet quality

According to Drewnowski & Specter, (2004) social class plays a huge role in terms of food consumption. It can be argued that disadvantaged groups within society suffer from higher rates of non-communicable diseases (NCDs) that are related to nutritional intake and bad dietary habits. This is significantly less in middle/upper-class groups. Examples of these common diseases include obesity, diabetes, osteoporosis, cardiovascular disease, and various cancers.

Diet quality is not only affected by age and gender but also by socio-economic factors such as occupation, income levels, and education. Studies have shown that more affluent groups are listed as being healthier and thinner, this resulting from their dietary patterns (Drummond, et al., 1998). This is due to the fact that they consume higher-quality diets than those individuals that are categorized as belonging to a low-income family.

2.8.2. The causal mechanism of diet and diet quality measures

Individuals eating behaviour has a direct impact on one's health. The rise of obesity has become one of the most visible public health problems within the 21st century (Stroebele & Castro, 2004). This has become a significant risk factor, for other diseases such as hypertension, diabetes, strokes and cardiovascular diseases, which result from unhealthy eating habits. Moreover, the rise in these diseases has become prominent not only as a result of obesity but rather these are also known as nutrition-related diseases.

2.8.3. Social variables

According to Stroebele and Castro (2004), the presence of other individuals during food consumption has resulted in individuals changing their normal food intake in a process referred to as '*social facilitation*'. It is argued that both women and men eat more when they are in a group compared to when they eat alone (Higgs and Thomas, 2016). A study conducted by De Castro (undated) showed that individuals consume more foods when eating in a group, and their mealtimes are extended due to the size of the group. Hence the bigger the group, the longer one sits and consumes food. Higgs and Thomas (2016) also show that when individuals consume foods in a group they tend to consume 75% more calories compared to when they are eating alone. Moreover, 44% of an individual's portion size increases when they eat in groups. What this shows is that size and types of foods are affected by the environment and individuals with whom one eats.

2.8.4. Social modelling

Our environment has influenced and shaped a lot of what we do and how we understand and interpret things. The relationship between individuals and the consumption of food differs depending on the age and gender of the individual. Younger individuals eating habits and food preferences are shaped by their parents and family members, whilst teenagers are shaped by their peers and their school environment. The role of the family and one's social circle has a major impact on eating habits, especially for children. According to Stoebele and Castro (2004), the role and presence of the father (male) at the eating table change the ambiance and it is noted that

the food choices change. Not only do the children and females eat healthier and showcase a variety of different food groups on their plates, but there is also a change in table manners and it results in a much more pleasant eating environment. Moreover, negative comments by parent's results in bad eating habits and an imbalance of food consumption.

Therefore, the nature of the eater's companions has a huge impact on the type of food one consumes and the behaviour associated whilst consuming the food. Thus, when individuals are eating foods at family members home they are likely to consume more foods as they are comfortable compared to the number of foods consumed whilst in the company of strangers (Stoebele & Castro, 2004). Understanding food consumption amongst adults is a difficult task as there is not one single factor to take into consideration but rather many that contribute. These include family history, education, social class, work environment, and our daily personal interactions.

2.9. Food environments

Food environments have changed since the mid-1990s, which is largely a result of the globalization of the food industry and increased urbanization within particular countries. According to Rideout, Mah, & Minaker, (2015) the food environment refers to the physical, economic, social, and political factors that affect an individual's ability to access foods within a particular community. Food environments are constantly changing due to the introduction of large transnational food and beverage industries. These changes have made it possible for processed foods to be readily available to all individuals, leading to a change in diet and diet patterns.

Globally, changing food environments are important drivers of the obesity epidemic (Turner *et al.*, 2018). There has been an increase in energy-dense, nutrient-poor diets within the country. The introduction of ultra-processed food products (UPFPs) has become extremely popular as they are convenient and inexpensive to consume. UPFPs are defined as meals that are made by incorporating additives such as added sugar, preservatives, artificial flavours, and colours. Examples of these types of foods are frozen meals, burgers, sugared drinks, confectionery, crisps, biscuits and pizza (Monteiro *et al.*, 2011). Therefore, it can be argued that an individual's health can be affected by the food choices they make. Food choices can affect one's food

environment that is shaped by multiple factors such as health, income, and preference (Monteiro *et al.*, 2011).

2.10. Food consumption patterns in South Africa

According to Monteiro et al., (2011) there is a lack of information on food consumption patterns within disadvantaged areas. Labadarios, Steyn and Nel (2011) highlighted that when looking at the Dietary Diversity Score (DDS) there is a direct link between poverty and a low DDS score. The Food and Agricultural Organisation (FAO, 2010) defines dietary diversity as a qualitative way of measuring food consumption. It is also used to measure the nutrient adequacy of an individual's diet. The DDS can be calculated at both an individual and household level. The household dietary diversity score (HDDS) is conducted to reflect the economic ability of a household to access a variety of food. The individual dietary diversity score (IDDS) is used to reflect the micronutrient adequacy of one's diet. It, however, does not measure the intake of kilocalories. The HDDs and IDDs scores are calculated differently because the scale of measurement differs. In the case of the HDDs, 12 food groups are included in the HDDS questionnaire and in the IDDS 9 food groups are included in the questionnaire (FAO, 2010: 9).

Moreover, a study conducted by the South African Health and Nutrition Examination Survey (SAHNES) confirms the results of Labadarios et al., (2011) as the study showed that 39.7% of the population has a DDS of <4. The study also found that much of the food intake consisted of foods that were high in fat and sugar. When observing the consumption of fast foods it was found that it was significantly high amongst the age groups of 15-24 year olds. A contributing factor to unhealthy patterns is the food environment, as some food environments promote negative and unhealthy food habits. Moreover, the study also showed that 28% of the population were at risk of hunger whilst 26% of the population experienced hunger.

The Food and Agriculture Organisation of the United Nations Statistics Division (FOASTAT) highlights that in the case of South Africa there has been a significant food and beverage consumption shift from 1994. The study highlights that there has been a 50% increase in the consumption of processed and packaged foods. This is due to the food environments that support these eating habits. The study shows that there is a significant decrease in the consumption of vegetables (FAO, 2018).

2.11. Food choice

Food is the basis of life; it is essential to sustain human beings. Food and the production of it have become the world's largest industry, and it can also be argued to be the core of most of our social relationships. Food has become so integrated into our social settings that it has even become difficult to imagine any social experience without the consumption of food or beverages. Examples of this can be seen in our daily lives such as having tea with a friend, lunchtime with colleagues, or dinner with a loved one. On a broader scale, food has shaped societies and across history, it can also be argued to have built empires and cities (Jennings *et al.*, 2015). Furthermore, the role of agriculture has shaped civilization and has transformed landscapes.

The concept 'Food choice' refers to how people select particular foods for consumption; moreover, food choice is also the study of the factors which influence choice (Bell and Marshall, 2003). Food and food choice has become more than just a means to end hunger. It is also used to provide the body with the necessary nutrients needed to sustain one's self. Food plays an important role within society in that it acts as a social marker and an agent in representing and identifying one's social class, tradition, religion and so forth. The European Food Information Council (EUFIC, 2016), explains that the consumption of food acts as a means for relaxation and comfort and can also be associated with resulting in a positive attitude. According to EUFIC, food is viewed differently in different parts of the world and is influenced resulting by one's culture, tradition, and religion. These factors have an effect on the types of food we learn to like and enjoy and, more importantly, it shapes the type of foods we are allowed to consume. The EUFIC study used yogurt to showcase this. It found that in certain parts of the world, yogurt is associated with a feeling of indulgence and luxury whilst in other countries it was merely associated with leading a healthy lifestyle. The study showed that one's perceptions of particular foods are shaped by one's geographical location, culture, religion, tradition, and gender. Moreover, these factors influence the way we view foods as well as their nutritional value.

2.12. Determinants of food choice

Understanding food choice is a complex task, as there are multiple factors that contribute to the decision making the process. These include one's sensory, psychological and physiological responses as well as factors such as our heritage, geographical location, culture, tradition,

religion and economic status (Belasco, 2008). Most of these factors determine the foods we can and should eat. Therefore, food choices are not determined by one factor but are influenced by multiple factors. Although some individuals might look at the price before purchasing food, others might check particular foods for allergens. The importance of one's personal preference can be seen in situations where individuals have to decide between consuming particular types of foods. An example of this can be seen in the consumption of organic and non-organic produce, consuming fried versus baked foods and so forth. In addition to one's personal preference, the increase in international trade and travel has made different cuisines easily accessible to individuals worldwide (Belasco, 2008).

2.13. Biological determinant's of food choice

When looking at the biological factors that influence one's food choice, one could argue that the pursuit to end hunger is the most pressing reason for the consumption of food. However, when we take into account factors such as palatability and our sensory factors it provides a different result. Hunger is often perceived as being the most common driver for the consumption of food, as it is the main source for providing our bodies with the necessary energy and nutrients needed to survive (Stubbs et al., 1996). Palatability, on the other hand, is also an important factor to take into consideration as it shows the effects an individual's experiences when consuming food. It is interrelated with the pleasure that one experiences whilst consuming a particular food. Hence sweet and spicy foods have a sensory appeal to some but not all. It is for this reason that food has become more than a means to end hunger; it also consumed for pleasure (Sorensen et al. 2003). An additional determinant is an individual's sensory factor, such as smell, texture, and appearance. According to Savage, Fisher and Birch (2007) taste is a major influence in terms of food choice. Although, much research shared these sentiments, palatability and sensory factors influence individuals from a young age already. In the 21st century with the increase of travel and the creation of global culture, our sensory factors have resulted in spontaneous food choices. It has become extremely popular to explore new cuisine as social media has popularised the idea of experiencing new cuisines, especially those which appear physically appealing.

Factors such as taste and familiarity have also influenced an individual's behaviour toward particular foods. It can be argued that preference is developed from these factors as an individual

develops a liking or disliking for particular foods at an early age (Nestle *et al.*, 1998). These biological factors coupled with experiences and attitudes developed over the years have resulted in a love for particular foods (Nestle *et al.*, 1998).

2.13.1. Hunger and satiety

An individual's physiological need forms the basic determinants for food choice. Due to the fact that an individual needs energy to function, he/she is then driven to end the state of hunger by consuming foods. According to Stubbs, Ritz, Coward, Prentice (1995) consuming foods that are high in fat results in the least amounts of satiety, those with carbohydrates come in second, and those with the highest amount of protein results in the highest levels of satiety. However, individuals are not always aware of these technicalities and this has resulted in an unbalanced and unhealthy diet. It has also resulted in individuals only being familiar with particular types of foods.

2.13.2. Palatability and Sensory aspects

Palatability refers to the experience (pleasure/displeasure) one experiences whilst consuming a particular food. This results from the sensory properties of the food such as smell, appearance, and texture. Therefore, high-fat, spicy and sweet foods hold a very high sensory appeal to some. According to Nestle *et al.*, (1998), the taste is argued to be a major influence in terms of food behaviour. Amongst all the sensory factors taste is the most influential; smell, texture and appearance also plays a role but are overpowered by taste. Therefore, one's sensory factors can be argued to influence spontaneous food choice. Nestle *et al.*, (1998) argues that one develops a liking for particular foods from a young age already which is due to taste and familiarity. Moreover, what this shows is the importance that the family plays in influencing an individual's diet. Taste and preference for particular foods are directly influenced by one's attitudes and beliefs. The role of one's religion, tradition, and culture play a role, in deciding the food we consume (Nestle *et al.*, 1998).

2.14. Economic and physical determinants of food choice

Economic status plays a huge role in terms of what one is able to consume. Cost and accessibility are key influences that affect the food we are allowed to purchase and consume. Much of the

research on food choice shows that one's economic status and geographical location shapes food choice (Arganini *et al.*, 2012). There is no doubt that cost plays an important role in determining food choice. However, food choice studies show that individuals with high incomes do not necessarily consume healthier foods than those of a lower income (De Irla-Estevez *et al.*, 2000). This can be a result of the lack of proper knowledge of the benefits of nutritional food and a balanced diet on the body.

It is assumed that when one understands the importance of dietary diversity and the impact that particular foods have on the body, one would consume the healthier option. In the case of low-income families, affordability is favoured compared to the healthier option. This is because healthier foods are associated with being more expensive than the unhealthier option (Rao *et al.*, 2013). Research on education and food choices have shown that individuals who are aware of the consequences of food choices that adversely impact health often attempt to lead a healthier lifestyle where possible. A study conducted in the US shows that families do want to eat healthy foods but their income does not allow for it. This response was prominent amongst low-middle income families. The study further revealed that education programmes on nutrition and healthy foods help individuals choose foods that are inexpensive and healthier than the regular foods that they were purchasing (Lutter, 2018).

Education acts as a tool/aid in informing us about particular things that are good and bad for us. Therefore, it is assumed that individuals with high levels of education would lead to a healthy lifestyle and consume foods that are nutritious and beneficial for their bodies (Kearney, 2010). Kearney (2010) explains that not all individuals who have knowledge regarding nutrition practice and good dietary habits practice it. This can be a result of three core factors. The first factor does not know how to apply good eating practices in their day to day lives. Individuals who have the necessary knowledge regarding the important dietary diversity and nutrition often do not know how to apply this information correctly. The second reason is the inability to purchase healthy foods. This is prominent amongst low to middle-income families where cost and accessibility affect the individual's ability to purchase healthy foods. According to De Irla-Esteves (2000), low to income families tend to eat unbalanced diets and have a low intake of fruit and vegetables because these foods are expensive and are seen as not being a value for money, due to its size.

Conversely, Drewnowski and Specter (2004) explain that individuals who earn a higher income do not necessarily practice a healthier diet. This can be a result of being misinformed about the nutritional value of foods and food groups (i.e. fruits and vegetables). This can be due to a preference for particular foods (e.g. the consumption of junk foods).

Physical determinants in relation to food choice highlight that one's geographical location plays a crucial element as it can limit the type of foods individuals are exposed to. Accessibility to particular supermarkets can act as a barrier to getting quality foods. A study conducted among low-income families in Texas revealed that individuals are interested in consuming healthy foods, but are constrained by their financial status and their geographical location (Wiig and Smith, 2009). The study highlighted that one's geographical location can impede accessibility to all food groups at a reasonable cost. Donkin, Dowler, Stevenson, & Turner, (2000) explain that healthy foods are more expensive when available within towns and cities compared to supermarkets on the outskirts. This often results in individuals becoming reluctant to purchase healthier foods as they can get twice the amount of food if they purchase a less healthy option, which is often calorie-dense and nutrient-poor. According to Wiig and Smith (2009), local shops do not have the best quality and are expensive. The study highlighted that smaller stores located within the community stock healthy foods but a higher cost compared to major supermarkets.

Conversely, in certain areas, there is an overconsumption of certain foods. This can be seen in areas that are occupied by a predominant race, culture or religious group. For example, in the Cape Town community of Rylands which is predominantly made up of middle-class Indians and Muslims, supermarkets stock most of the foods, fruits, vegetables and spices for the local community. Therefore, supermarkets that are found in particular communities and that is made up of a dominant race/religious groups tend to stock particular fruits and vegetables to accommodate the food choices of the majority of the population staying in the area as well as the type of class group.

2.15. Social determinants of food choice

According to Shepherd (2005), social and cultural factors are crucial in shaping food choice. Cultural, traditional and religious factors shape the types of food that individuals are exposed to and learn to enjoy. Social class has an impact on the type of foods we are exposed to and will

consume. Moreover, education plays a big role in understanding the different nutritional and health implications of different food choices. Shepherd (1999) explains that this can be seen in the case of a certain religion, which forbids the consumption of particular meats while others do not. In addition to social class and culture, one's social context shapes the type of food one is able to buy and consume. Social influences can include where one eats, who one eats it with, and, in some cases, and how one eats it.

2.15.1. Psychological factors

Psychological factors such as stress, individual mood, consumer attitudes, and beliefs play an important role when looked at in conjunction with factors such as one's economic and social status, as this affects one's psychological state. Stress levels have a direct effect on an individual's food intake as for many individuals it results in an increase or decrease in their food intake. The term stress refers to the processes involving appraisal, perception and a response to an event or stimuli (Yau and Potenza, 2013). Experiencing stress can be emotional and is caused by factors such as the loss of a loved one, unemployment or conflict. It can also be physiological which can be caused by factors such as illness, drug withdrawal or food deprivation. Yau and Potenza (2013:3) explain that approximately 40% of individuals increase their food intake whilst 30% decrease their caloric intake when stressed. They go on to explain that only 20% of individuals noted that their diets are not affected by stress. Arganini et al., (2012) argues that high-stress levels are known to result in the consumption of foods with high sugar and salt intake, as well as an increase in 'junk foods'.

2.16. Gender and Food consumption

Within the literature, it has become evident that within science there is a particular bias amongst gender (Moss-Racusin *et al.*, 2016). According to Arganini et al (2012), there are two reasons for this. The first being a sociological concern: society tends to favour males more than females and, within research, the same is done. The second reason is of pragmatic origin. If research is not directly connected to females (e.g. research concerned with lactation, childbirth, etc.) using males in a study is less work and is argued to cost less compared to that of a female.

Food choice is determined ultimately by two factors. The first being the person making the choice and the second being external factors such as economic and social factors related to the food and choice. Moreover, food choice is also made due to options available to the individual. Literature shows that eating behaviour is linked to social context. Social norms, environmental and societal changes, affect food choice amongst gender. This can be seen in the role of women within society. The traditional role of women in society has changed dramatically. Women are no longer expected to stay at home and be caregivers; they now are encouraged to pursue careers and share equal right with men in the workplace. Moreover, the number of female-headed households has increased in the 21st century (Ricketts, 1989). This is largely an outcome of a change in gender roles within society. Women are now forced to go out into the workforce to provide for their families or help contribute towards the sustainability of their households (Kaushik, 2014). This has had a major impact on food preparation in that it has affected the time for meal preparation and food selection. Meal preparation not only affects the individual itself, but it can have an impact on the entire family and is determined by time and availability. Due to the time and stress resulting from the work environment, women are more likely to purchase foods from vendors/places situated close proximity to their workplace.

The Institute of Medicine conducted a study which showed that understanding gender roles plays a huge role in understanding the behavioural aspects related to one's health (Kanter and Caballero, 2012). The focus on gender has allowed researchers to better diagnose illnesses and finding better methods of treatment. The study highlighted that the majority of the disease have a strong behavioural element. Thus, focusing on gender provides greater insight into lifestyle choices and how that leads to possible chronic and non-communicable diseases (Society and Nutrition, 2014). Research on health behaviour by gender showcases a significant difference in results between males and females. The literature has shown that when the aspects of gender are looked at in conjunction with demographic and social factors in communities, one gets a much more in-depth understanding of the factors that drive individuals to consume the foods they do (Wardle et al., 107:2004). Research on gender and food choice is a neglected topic within developing countries. Much of the literature surrounding the topic of gender and food choice has been conducted in developed countries, with a special focus on North America and Europe (Kanter et al., 2012).

2.16.1. Types of eaters

Multiple studies have shown that there are various types of eaters and that their eating habits are determined by multiple factors. There are a select few factors which are more dominant in determining the types of foods you are able to eat. These include one's income, location, culture, and religion. Similarly, when looking at types of eater aside from external factors there are psychological factors that shape the type of eaters we become. Food, just like art, is an acquired taste; individuals are groomed into liking particular foods. This is due to an array of factors such as our upbringing, preference, our environment, culture, religion, family, and community. According to Peirano (2017), there are six main types of eaters. The first type of eater can be defined as an 'emotional eater'. This eater uses food as a source of comfort and is usually prone to consume sweet treats. The second type of eater is defined as a 'habitual eater' who often indulges in food even though they are not hungry. The third type of eater is defined as an 'external eater'. External eaters tend to eat because they find foods appealing. The fourth type of eater is defined as a 'critical eater'. Critical eaters are obsessed with eating correctly, a critical eater does not like to compromise when it comes to the consumption of food as he or she knows the importance of nutrition and the nutritional value of particular foods. The fifth type of eater is defined as the 'sensual eater' who often consumes foods for pleasure purposes as he/she enjoys exploring and trying different cuisines. The last type of eater is defined as 'the energy eater' he/she consumes food in order to gain energy. This eater is focused on consuming healthy meals that will provide their bodies with the nutrients and energy needed to sustain itself.

2.16.2. Eating habits and health consciousness

When looking at eating habits and being health-conscious, studies have shown that women tend to partake in a much healthier lifestyle than that of males. According to Arganini et al., (2012) women are more inclined to engage in behaviours that promote a healthy lifestyle in comparison to their male counterparts. Sobal (2005), shows that men, unlike females, associate food with a routine. Men view eating as a necessary activity that is needed to gain energy or to end hunger. Moreover, they view food as a crucial element to fuel their bodies with the necessary nutrients

and vitamins to enable them to carry out their day-to-day activities (Sobal, 2005; Arganini et al., 2012).

Pekkarinen (2005) shows that gender, in conjunction with education, plays a huge role as the difference in educational attainment results in different food choices to be made. This can be seen in the food choices made by men. Males who cook and are health conscious stated that they would like to consume less red meat compared to those who are not educated. This is a result of them being aware of the repercussions it has on their health. Conversely, men who find themselves in blue-collar jobs find it harder to consume healthier meals as their socio-economic status does not allow for it. Power (2004) states that due to the type of work these men carry out they are forced to consume foods that are high in carbs and drinks with high sugar content. This is consumed to provide them with the necessary energy needed to complete the work. Power (2004) explains that their bad eating habits are a result of their income and lack of ability to purchase healthier foods.

In the literature, women are associated with being health conscious. Their eating habits are often driven by maintaining a healthy diet, which makes them appear more health-conscious than males (Arganinin et al., 2012). However, Fagerli and Wandal (1999) argue that women are more likely to partake in a healthy diet because they are driven by their perception of what the ideal body image should look like. They go on to explain that often body image takes preference over maintaining a healthy lifestyle. Moreover, this study has shown that with age and some form of educational attainment women tend to make healthier food choices; the same was not proven for males.

Numerous studies have shown that women, in general, participate in a much healthier lifestyle than men. According to a study conducted in Norway, women had a greater propensity to choose healthier foods compared to males (Fagerli & Wandel, 1999). The food choices females make are often more aligned with proper dietary guidelines. A similar study was conducted in the USA, with results showing that women engaged in a healthy lifestyle (Hunt et al., 1997). What these studies have revealed is that women tend to favour food groups that include fruits, vegetables, and foods high in fibre. Conversely, there are only a few foods options such as ‘lentils’ and ‘beans’ which males favoured more than females.

A PAN-EU survey shows that females specified that there are predominant factors that shaped their food choice. These being ‘price’, ‘quality/freshness’, ‘family preference’ and trying to ‘eat healthily’. These were noted as being the most influential in terms of food choice. The majority of the males listed ‘taste’ as being the most influential factor influencing their food choice. Additionally, females noted that their social setting and social circle can determine the food they eat. Persuasion by other individuals has been noted to influence the choice of foods amongst females. According to Lappalainen (1997), the majority of females reported that other individuals influenced their food choice, whereas only a few males have shared this opinion when looking at eating healthy. Steptoe (2002) argues that men focus less on eating healthy and focus more on preference, convenience, and taste when looking at food choice. Men, in general, are noted to be much more doubtful about healthy eating and diets than females (Steptoe *et al.*, 2002).

Research conducted by the International Health and Behaviour Survey (IHBS, looked at the eating behaviours amongst individuals in 23 countries (Steptoe *et al.*, 2002). The study showed that a higher percentage of women, in general, tend to avoid foods that are high in fat. They also consume foods that are high in fibre and consume more fruits and vegetables compared to that of their male counterparts. An additional study conducted in the UK showed similar results. It highlighted that females favoured a diet that consisted mainly of food groups such as fruit and vegetables compared to males (Baker & Wardle, 2003). Studies conducted in the Netherlands and Finland supported this view as it showed that more females showed interest in healthy eating habits than that of males. It also showed that they were interested in the consumption of natural products, whilst males did not (Roininen, 2001). Studies conducted in Ireland showed that women made a more conscious decision to consume healthier foods and to participate in a healthy diet. Females were noted to partake in a healthy diet ‘most of the time’, whilst a common answer amongst males was ‘hardly ever’ (Kearney, 2001).

What the majority of the literature has highlighted is that in terms of being health-conscious, women tend to make the healthier option due to the fact that they are less ambivalent when it comes to diets and healthy food choices/nutritional intake. Studies have highlighted that this could also be a result of a lack of nutritional knowledge. Research shows that females tend to show a greater deal of knowledge regarding nutrition. However, in low-income countries, this is

not always the case as individuals are not exposed to nutritional information. This in conjunction with their openness to eat and try healthier diets could possibly be the reason why more females than males partake in a healthier lifestyle.

2.16.3. Eating behaviour and weight control

Arganini et al., (2012) argues that in most cases women are more likely to consume healthier foods due to the fact that they are concerned with their body image and weight control. However, in low-income countries, this is often a difficult task to accomplish, as economic constraints act as a barrier for the consumption of good and nutritious foods. An additional factor that contributes to the gender dynamic difference is the issue of dieting. According to Wardle et al., (2004), the higher dieting frequency is directly related to women's concerns about their body image. They explain that these sentiments regarding dieting are expressed across all religious, age and social class groups. Therefore, it can be noted that generally females consume more fruits and vegetables than males as it is associated with a weight controlling lifestyle (Drewnowski and Specter, 2004).

According to multiple studies conducted in the early 2000s shows that there is a significant difference in ideologies surrounding body image and weight concern. This then has a significant effect on the type of foods individuals consume as well as their eating habits. Arganini et al., (2012: 89) argues that weight control and body image can be argued to be the leading cause of food choice decisions, According to Wardle and Griffith, (2001) women are reported to be more dissatisfied with their bodies hence the reasons why they are much easier to convince to start a diet and to attempt to consume foods that appear healthier for them.

The environment has influenced and shaped a lot of what we do and how we understand and interpret things. The relationship between individuals and the consumption of food differs depending on the age and gender of the individual. Younger individuals' eating habits and food preferences are shaped by their parents and family members, whilst teenagers, for example, are shaped by their peers and their school environment. The role of the family and one's social circle has a major impact on eating habits, especially for children. According to Stoebel (2004), the role/presence of the father (male) at the eating table changes the ambiance and it is noted that the food choices change. Not only do the children and females eat healthier and showcase a variety

of different food groups on their plates there is a change in table manners and it results in a much more pleasant eating environment. Moreover, negative comments by parent's results and bad eating habits and an imbalance of food consumption.

Therefore, the nature of the eater's companions has a huge impact on the types and food one consumes and the behaviour associated whilst consuming foods. Thus, when individuals are eating foods at family members home they are likely to consume more foods as they are comfortable compared to the number of foods consumed whilst in the company of strangers (Stoebele, 2004). Understanding food consumption amongst adults is a difficult task to complete as there is not one single factor to take into consideration but rather many that contribute. These include; family history, education, social class, work environment, and our daily personal interactions.

3.14. Summary of chapter

Understanding food choice is a complex task, as can be seen from the above literature. Food choice is determined and shaped by various factors and cannot be narrowed down to one factor. Although, most of the factors listed above shows how each of the factors contributes to influencing ones food choice it still provides a limited understanding of food choice. What literature neglects to focus on is the role gender plays in relation to food consumption. The literature highlights that factors such as economics, education, social and cultural factors play a huge role in term of the food individuals are exposed too. Moreover, some of these factors often shape the type of eaters individuals become, while other factors limit the types of food the individual is able to eat. Therefore, when one looks at the gender aspects in conjunction with factors such as education, economics as well as physiological factors one gets a better understanding of 'why individuals eat what they eat' as it highlights the reasoning behind particular food choice.

CHAPTER 3: BACKGROUND OF CASE STUDY AREA

3. Introduction

The Cape Flats is a widespread area situated to the southeast of the central business district of Cape Town. The Cape Flats is made up of many sub-areas which were all created to accommodate Coloureds, Africans, and Indians who were dispossessed by the Group Areas Act. According to Smith (1982:38), “The Cape Flats townships were built very largely as rental accommodation for low-income people, with only small enclosures of better quality private housing available for middle-class Coloureds.” The area of Mitchells Plain is an example of one of the many sub-areas created to accommodate Coloured people. Mitchells Plain was established to encourage homeownership as it was developed for those deemed as middle-class coloured’s (Smith, 1982). The residents of Mitchells Plain came from different areas within Cape Town, and brought with them different cultural, traditional and religious ideologies, making Mitchells Plain rich in its diversity.

Mitchells Plain was developed in the 1970s as a ‘show-case housing project’ by the apartheid government. Although the area was designed to showcase the apartheid government’s housing efforts, it was structurally planned to ensure easy social control by the South African police. Although the area was developed for middle-class coloured’s, it was not structurally designed for middle-class coloured’s. “The construction of the new city at Mitchells Plain must be understood principally as an attempt to create a stable, property-owning middle class among the coloureds” (Smith, 1982:38). This small community was strategically located, forcing its individuals to be isolated from the Cape Town city centre. This limited individuals from employment opportunities the city centre had to offer. The community of Mitchells Plain was separated from its neighbouring community of Khayelitsha, which housed Africans.

Mitchells Plain soon became an area full of ‘tenants’ with limited infrastructure and basic facilities to sustain its residents. The area became known as a dangerous space as well as an urban ‘ghetto’ (Cele, 2019). Media regarding Mitchells Plain soon became dominated by notions of gangsterism, crime, and drug abuse. Mitchells Plain, due to its diversity and many sub-areas made it hard to provide one fixed description as each sub-area differs from the other.

3.1. Settlement History

Mitchells Plain was established in the 1970s, under the Group Areas Act. According to South African History Online (2017), the Group Areas Act of 1950 was aimed at controlling the property rights of those who were not classified as white. The Group Areas Act of 1950 created a mechanism to bound individuals racially, financially and geographically to one fixed location (Platzky and Walker, 1985). In order to successfully maintain this division, ‘townships’ were created. It lies in what is known as the wider belt of the Cape Flats and was specifically developed to accommodate middle-class coloured’s, who were forced to relocate from other neighbourhoods under the Group Areas Act in Cape Town. In common with other group areas for all blacks, this area isolates its inhabitants from the city centre but is also separates its residents from its neighbouring community of Khayelitsha (Stats SA, 2012).

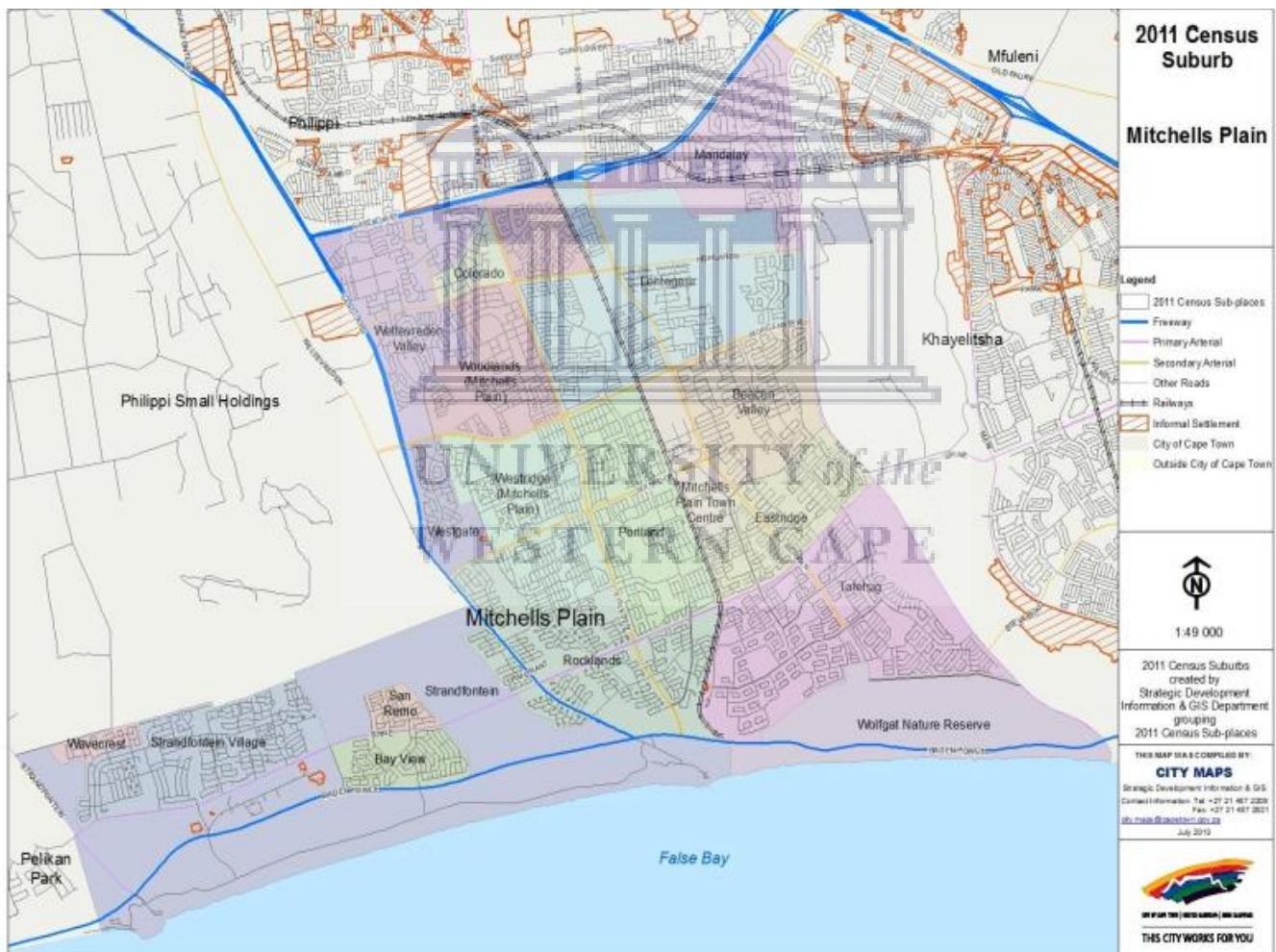
3.2. Location

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Mitchells Plain has been strategically situated 20 km from the Cape Town city centre to control as well as to limit its individual’s economic growth. Geographically, the area is situated west from the Phillip Horticultural area, and south from the False Bay Coastline (see Figure 3.1 below). The neighbouring community of Khayelitsha is situated east of Mitchells Plain. These two areas are separated by the Swartklip Road. North of Mitchells Plain is the R300 and the area of Philippi (Stats SA, 2012).

3.3. Physical and Infrastructural Environment

Figure 3.1. Map of Mitchells Plain by Sub place



Source: Census (2011)

3.4. The layout of Neighbourhoods within Mitchells Plain

The city of Cape Town is made up of 24 sub councils. Each of these sub councils makes up the municipal structure, and each sub-council consists of different sub-areas. The city of Cape Town (Street *et al.*, 2018) defines a sub-council as an area within the city that is made up of 3-6 neighbouring wards. Moreover, sub councils are created to allow for better control over issues that could potentially arise within communities. It is also created to ensure that issues within the neighbourhood are heard by the local and provincial government. Due to the size of Mitchells Plain, it is made up of three sub councils, namely 12, 23 and 19. As seen in Figure 3.1, the community of Mitchells Plain is made up of 19 sub-areas (Census, 2011).

Sub-council 12 consists of the following areas: Mitchell's Plain Town Centre, Westgate, Rocklands, Tafelsig, Eastridge, Westridge, Portlands, Beacon Valley and Wolfgate Nature Reserve. In sub-council 23 the following sub-areas are located; Woodlands, Weltevreden Valley, Colorado, Mandalay, and Lentegeur. Additionally, sub-council 19 comprises of the following areas: Strandfontein, Strandfontein Village, San Remo, Bay View, and Wavecrest.

3.4.1. Shopping malls/ businesses

The commercial activity in Mitchells Plain is closely connected to that of Khayelitsha, to the extent that their economies are linked (South African Department of Provincial and Local Government, 2011). Due to the size of the two areas the purchasing power is large and has helped to create a high commercial site (South African Department of Provincial and Local Government, 2011). The commercial site in Mitchells Plain includes both formal and informal business sectors which incorporates a retail plaza (a small shopping centre) at the train station which includes major transport interchanges as well as other formal shopping centres such as

Westgate Mall and the Promenade. However, some of the challenges faced within the commercial activity in Mitchells Plain are high gang activity as well as the lack of control over the informal trade sector which has contributed to the decline of formal businesses within the area (South African Department of Provincial and Local Government, 2011; Murcott, 2012).

3.4.2. Household Structure

A household consists of any number of persons living together, sharing food and other amenities (Census, 2011). In Mitchells Plain, there are 67 995 households. The average household consists of four people and more. As can be seen in Table 1 below, there has been an 11.6% increase in households within the area between 2001 and 2011 (Western Cape Government Provincial Treasury, 2014). However, there has not been a significant increase in household size.

Table 3.1. Households and household size 2001 vs. 2011

Mitchells Plain	2001	2011
Households	60 924	67 995
Average Household Size	4.62	4.57

Source: The City of Cape Town (2014)

As can be seen in Table 3.2 below, one can see that there is an uneven distribution in households within Mitchells Plain. The area with the largest amount of households is Tafelsig which consists of 12 861 households compared to the area of Mitchells Plain Town Centre who has 35 households. While Mitchells Plain Town Centre has the smallest number of households, its household size is the largest, with an average of 4.80% compared to the average of the entire Mitchells Plain which is 4.57.

Table 3.2: Shows the household by sub-area

2011 Census Sub Place Name	Total Population	Number of Households	Average Household Size	Formal Average Household Size	Informal Settlement Average Household Size	Informal Backyard Average Household Size
Mitchells Plain Town Centre	195	35	5.57	3.87	0.00	3.00
Beacon Valley	28 887	5 604	5.15	5.06	3.23	3.62
Lentegeur	40 344	8 088	4.99	4.71	4.96	3.74
Tafelsig	61 758	12 861	4.80	4.95	3.91	3.52
Eastridge	28 482	5 953	4.78	4.77	3.55	3.81
Woodlands (Mitchells Plain)	23 211	4 991	4.65	4.58	3.86	3.36
Rocklands	29 784	6 487	4.59	4.60	5.37	3.63
Portland	24 159	5 651	4.28	4.27	4.07	3.57
Westgate	3 357	797	4.21	4.22	6.00	2.31
Westridge (Mitchells Plain)	19 371	4 659	4.16	4.13	3.75	3.79
Colorado	1 443	351	4.11	4.03	4.50	3.00
Weltevreden Valley	12 219	3 002	4.07	4.05	3.43	3.00
Strandfontein Village	16 965	4 204	4.04	4.01	4.13	3.35
San Remo	2 550	632	4.03	4.02	0.00	0.00
Wavecrest	1 830	471	3.89	3.85	0.00	3.75
Mandalay	8 835	2 324	3.80	3.74	2.68	2.33
Bay View	6 339	1 677	3.78	3.77	3.33	3.33
Strandfontein	759	207	3.67	3.99	3.36	2.00
Wolfgat Nature Reserve	0	0	0.00	0.00	0.00	0.00
Mitchells Plain Total	310 488	67 994	4.57	4.53	3.76	3.56

Source: Statistics South Africa (2011)

3.4.3. Household heads

Mitchells Plain has an uneven distribution in terms of household heads. As can be seen in Table 3.3 below, 0.23% (159) of the households is headed by children aged 10-17. Out of the 159 children headed households, 81 of those households are headed by females aged 10-17 years (City of Cape Town, 2014). In terms of females headed households, there has been an increase

from 31% (18 993 households) in 2001 to 37.9% in 2011. Moreover, 61.8% (42 056 households) are headed by males aged 18 and older (Western Cape Government Provincial Treasury, 2014).

Table 3.3: Showcases household by the head of household

Head of household	Number of households	%
Children (10-17)	159	0.23%
Females	25 780	37.9%
Males	42 056	61.8%
Total	67 995	100%

Source: The City of Cape Town (2014)

3.5. Mitchells Plain Demographic profile

Demographics of a population are mainly influenced by birth and death rates, race, age, gender and life expectancy (Western Cape Government, 2016). It also includes migration patterns. Therefore, it is important to understand the demographics of a population as it provides readers with a better understanding of a community. It also allows for a better understanding of the socio-economic reality within the area. This is important for politicians, governments and economist. The following section deals with factors relating to the demographics of the population of Mitchells Plain. It will include the area's population size, age distribution, gender composition, household structure and ethnicity which will focus on the race and language aspects.

3.6. Population size and profile

Mitchells Plain consists of 19 sub-areas. The overall population in Mitchells Plain consists of 310 485 individuals (Census, 2011). As can be seen in Table 4 the population in Mitchells Plain

has grown from 283 196 in 2001 to 310 485 in 2011. The data shows that there is a growth of nearly 10% (9.6%) since 2001.

Table 3.4: Population size in Mitchells Plain 2001 vs. 2011

Suburb: Mitchells Plain	Year	
	2001	2011
Population	283 196	310 485

Source: Statistics South Africa, (2011)

3.7. Population Group Profile

The population of Mitchells Plain is predominantly made up of coloured people. Table 3.5 showcases the distribution of racial groups within the area. The coloured population makes up 91% of the area's residents. Black African residents make up the second-largest group, as they account for 7.3% of the population (Census, 2011). Asian, white and other racial groups are relatively small in comparison to the coloured community, as they only make up 1.9% of the overall population (Census, 2011).

Table 3.5: Showcases population group by racial category

Racial group	Black African	Coloured	Asian	White	Other	Total
Number	22 723	281 828	1926	580	3427	310 484
Percentage (%)	7.3%	90.8%	0.6%	0.2%	1.1%	100%

Source: Statistics South Africa, (2011)

3.10. Gender Age Profile

The sex ratio is used to measure the proportion of males to females within a particular community, city or country. According to The World Health Organisation (WHO), the sex ratio is defined as the number of males for every 100 females within the giving population sample. In the case of Mitchells Plain, the sex ratio is 94.72 males for every 100 females (CCT, 2018). Table 3.6 below, highlights that the Mitchells Plain consists of more females than males. The percentage of females makes up 51.4% of its population whilst the males consist of 48.6%. The difference between the two is not significant as there is only a 2.8% difference between the genders.

Table 3.6: Gender in Mitchells Plain

Male		Female	
Number	Percentage (%)	Number	Percentage (%)
151 032	48.6	159 452	51.4

Source: Census, (2011)

3.11. Age Distribution

According to the city of Cape Town (2014), Mitchells Plain is mainly made up of a population of individuals aged 25-64 years of age. Table 10 shows that 50.2% of the population consists of individuals between the ages of 25-64 years old (Census, 2011). The second-largest age group is individuals aged 15-24 years, which makes up 18.2% of the population. The third-largest group is individuals aged 5-14 years of age. These individuals make up 17.1% of the overall population. The age group with the lowest percentage are those aged 0-4 and 65 years and older. These age groups combined contribute to 14.5% of the overall population in Mitchells Plain (Census, 2011).

Table 3.7: Age categories in Mitchells Plain

Age Categories	Total Population	
	Number	Percentage (%)
0-4 years	32 148	10.4
5 to 14 years	53 248	17.1
15 to 24 years	56 398	18.2
25 to 64 years	155 853	50.2
65 years and older	12 842	4.1
Total	310 488	100

Source: Statistics South Africa, (2011)

As can be seen in Table 3.8 mortality rates are higher amongst males than that of females. This is due to the fact that with the increase of age there is a decrease in the sex ratio between the two (Oksuzyan *et al.*, 2008). This can be seen in Table 3.9 below, which shows that with the increase of age in the sex ratio decreases. This results in the population having a higher percentage of older-aged females than males.

Table 3.8: Age group by gender in Mitchells Plain

Age Group	Male	Female	Sex Ratio	Total
0-14	43 286	42 108	102.80	85 394
15-64	102 404	109 846	93.23	212 250
65+	5 343	7 498	71.26	12 841

Total	151 033	159 452	94.72	310 485
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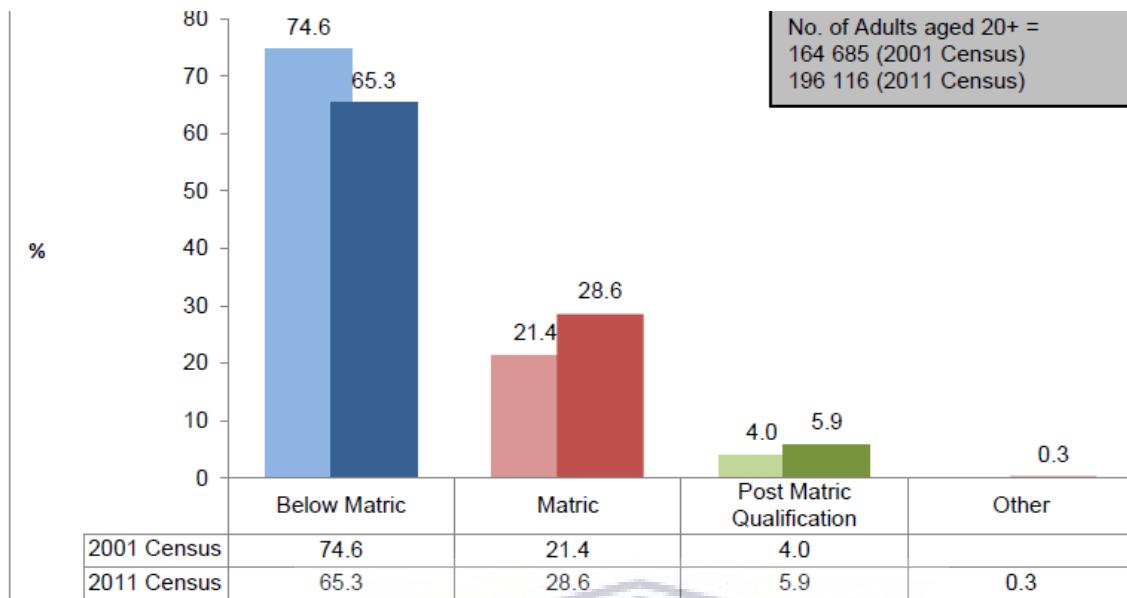
Source: Statistics South Africa (2011)

3.12. Education profile

Education levels within a household and community levels are important as it helps in improving access to employment opportunities and allows for development and sustainability (Western Cape Government (WCG), 2016). Education allows for the expansion of options made available for individuals. It can create opportunities that can lead to individuals being able to fulfill basic needs within his/her life (WCG, 2016). Moreover, education has other positive effects in that it contributes to health, life expectancy, and welfare.

Figure 3.2: Adults by the highest level of education

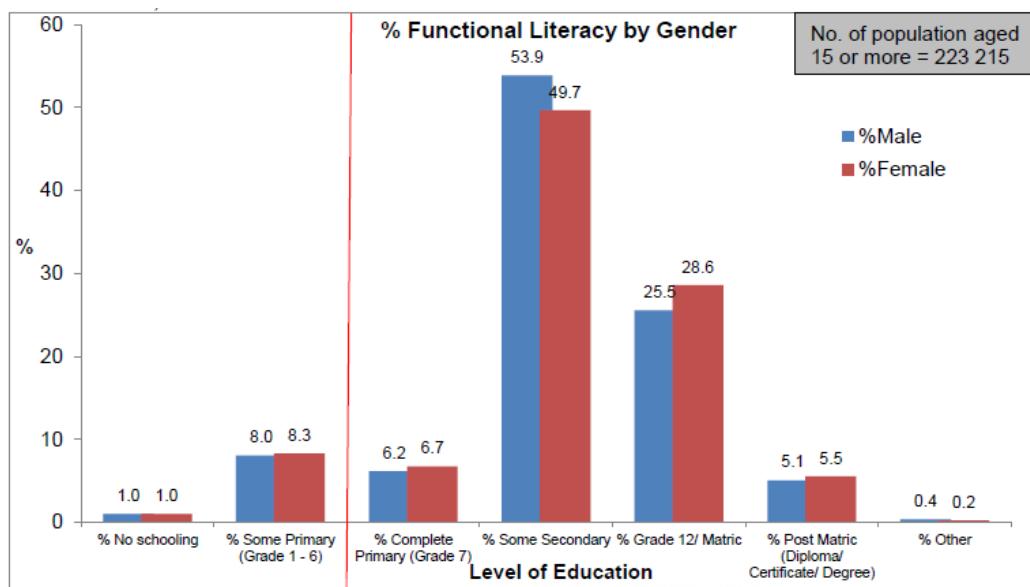
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Source: Statistics South Africa (2011) and

As can be seen in Figure 3.2 above only 28.6% of the population in Mitchells Plain has completed their secondary education. However, there has been an increase in educational levels between 2001 and 2011. This can be seen in both the obtainment of matric certificate (the highest school qualification) and those who have obtained a post-matric qualification.

Figure 3.3: 15 years and older with literacy levels in Mitchells Plain



Source: Statistics South Africa (2011)

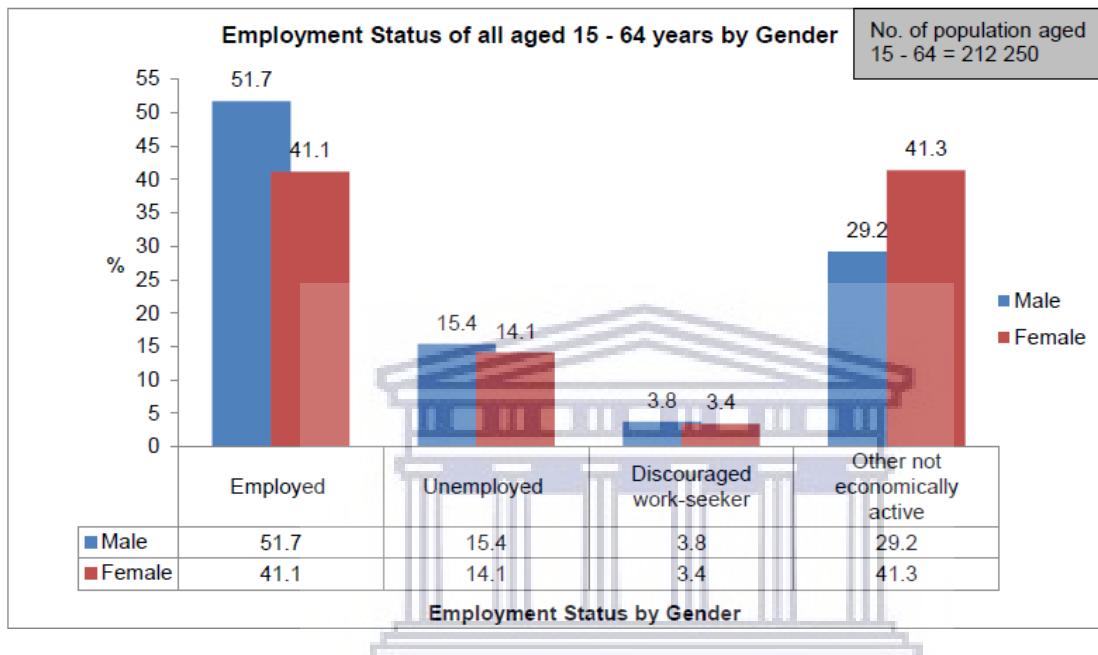
Literacy levels are used to showcase the minimum education levels within a particular population group. According to the Western Cape Government (2016), most learners start primary school at the age of 7 years. Therefore, the literacy rate is calculated by looking at individuals aged 14 years and older who have successfully completed 7 years of formal education. As can be seen in Table 4, the majority of the residents are literate. Figure 3 shows that only 1% of the population is categorized as having no educational level. Only 8% of the sampled population is considered to be functionally literate. The majority of the population have completed primary school and have progressed to high school. What Table 8 also highlights is that there are more men that have levels of secondary education than females. Conversely, there are more females who are able to pursue a post-matric degree.

3.12. Economic Profile of Mitchells Plain

The Organization for Economic Co-operation Development (OECD) defines the working-age population as those aged 15 to 64. The indicator for employment within a population is calculated by looking at the proportion of those who are able to work. In Mitchells, Plain employment differs by gender. Figure 4 below shows that 51.7% of males are employed whilst

only 41.1% of the female population are employed. Moreover, 41.3% of the female population is defined as not being economically active compared to 29.2% of the male population (Source: Statistics South Africa, 2011).

Figure 3.4: Showcases the employment status of the population aged 15-64 years



Source: Statistics South Africa (2011)

As can be seen in Table 3.9 below unemployment rates are relatively high amongst both gender groups. However, there is a higher percentage amongst unemployed females 25.5% compared to males who represent 22.9%. However, Table 3.9 shows that there has been an increase in both genders in the workforce since 2001. In 2001 27.2% female were employed and 25.9% of males.

Table 3.9: Unemployment by gender of those aged 15-64 years, 2001 vs. 2011

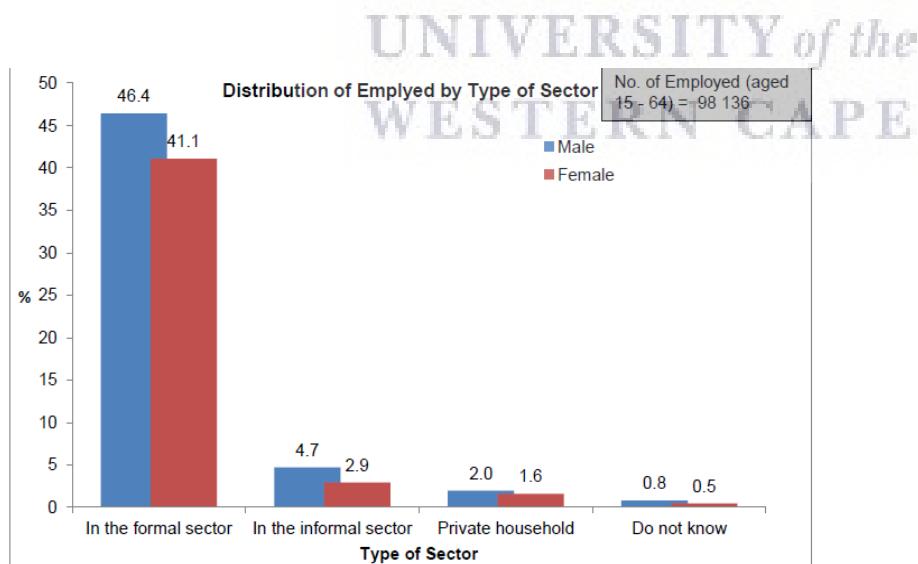
Gender	The unemployment rate amongst those who are eligible to work.	
	2001	2011
Male	25.9 %	22.9%
Females	27.2 %	25.5%
Total	26.5%	24.1%

Source: Statistics South Africa (2011)

3.12.1. Employment by Sector

Employment by type of the sector provides information on the distribution between formal and informal employment amongst the population group. The majority of Mitchells Plain's residents are employed within the formal sector. Figure 3.5 below shows the distribution of each gender by type of sector. Understanding the distribution of employment by sector can also help to explain the type of income that is generated and expected in Mitchells Plain.

Figure 3.5: Distribution of employed aged 15-64 by type of Sector

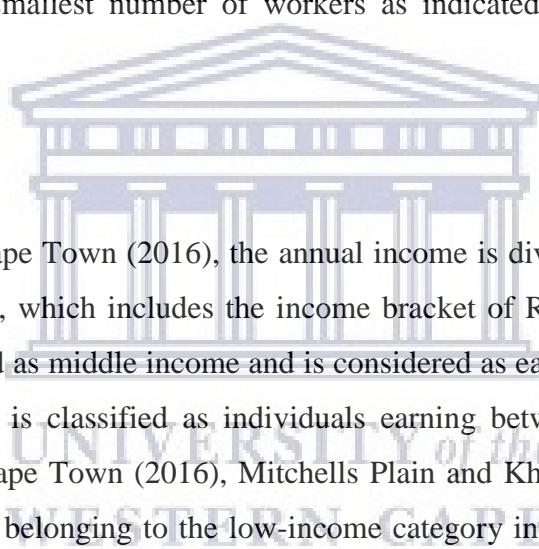


Source: Statistics South Africa (2011)

3.12.2. Employment by economic sector

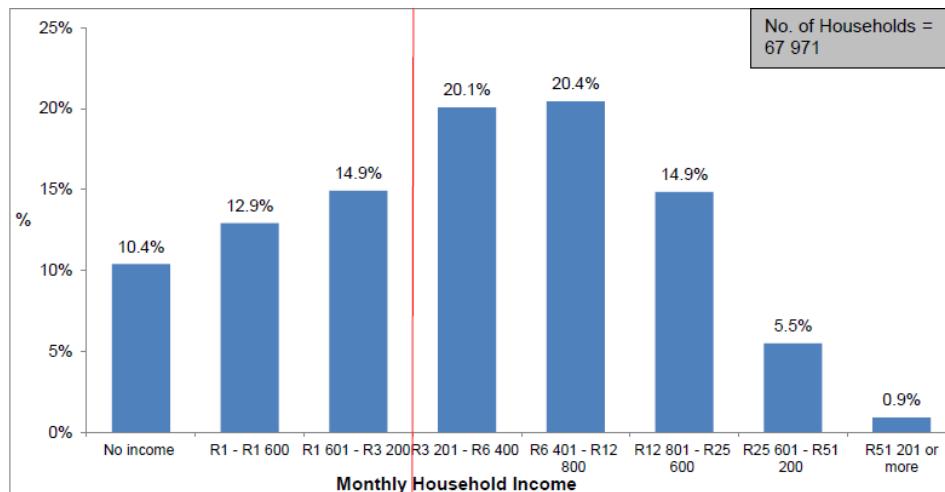
The distribution of employment, according to the economic sector, shows that there are three main segments that describe the division of labour in Mitchells Plain. They include the manufacturing sector which accounts for 26% of the employed population, whilst retail trade and wholesale make up 21.8% and community social and personal services 20.5% (Census, 2001; Stats SA, 2012). The highest group is in sales, services and clerical workers which accounts for 29.7% of the sampled population. The second-largest occupational sector comprises of unskilled labour which makes up 19.8% of the sampled population. A trade worker makes up 17.8% whilst professional and semi-skilled workers account for 28.6% of the sample population. Managerial positions account for the smallest number of workers as indicated by 4.1% of the sampled population.

3.12.3. Household income



According to the City of Cape Town (2016), the annual income is divided into three categories. The first being low income, which includes the income bracket of R0- R50 000 annually. The second category is classified as middle income and is considered as earning between R50 614- R 404 901. The last category is classified as individuals earning between R404 902 and more. According to the City of Cape Town (2016), Mitchells Plain and Khayelitsha make up 63% of the population classified as belonging to the low-income category in Cape Town (CCT, 2016). Moreover, 16.5% of the population is classified as having no source of income. The majority of Mitchells Plain resident's income falls in the brackets of R3201- R12 800 bracket, with 10.9% of households having no source of income.

Figure 3.6: Distribution of monthly income by household



Source: Statistics South Africa (2011).

As can be seen in the Figure 3.6 above 10.4% of the population are recorded as households with no income. These would most probably account for households which do not have fixed or regular income. It can only be assumed that this figure would be related to informal market activity as well as those households who are possibly surviving off grants (Census, 2011).

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Table 3.10: household income by sub-area

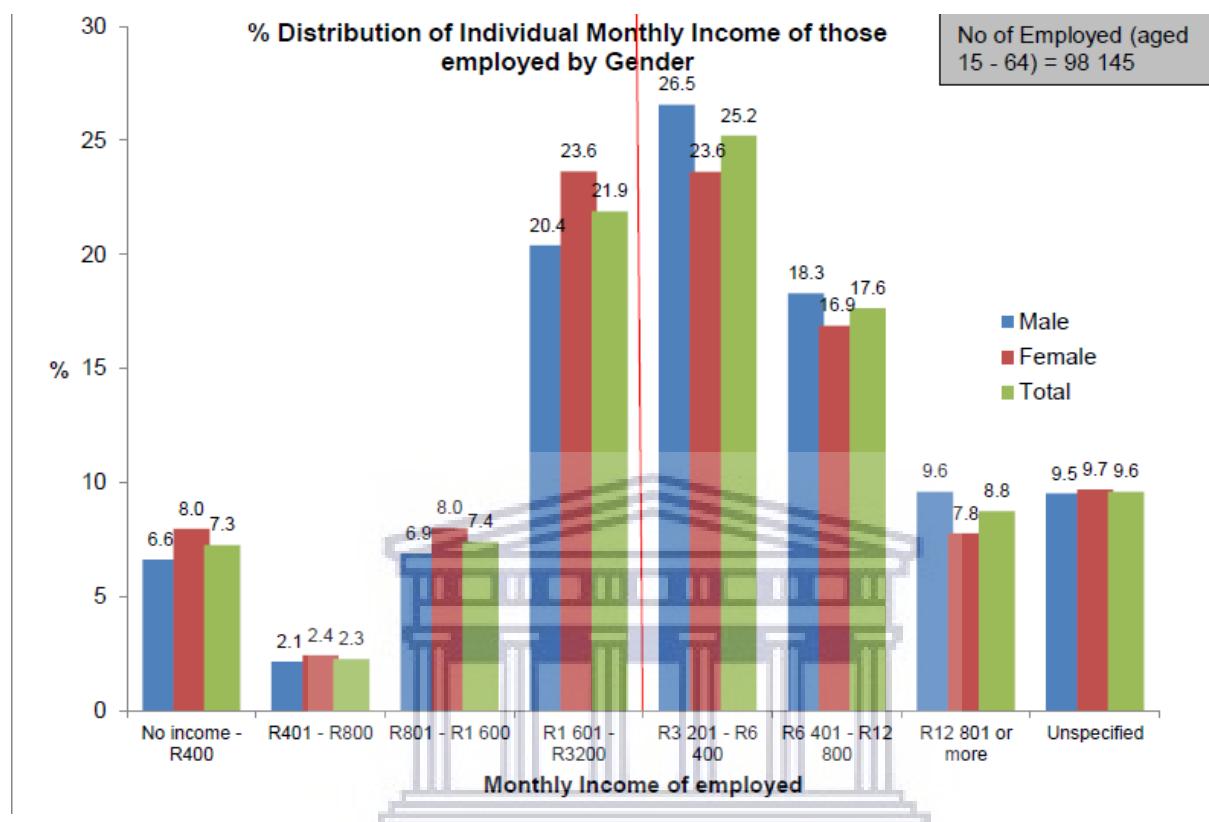
2011 Census Sub Place Name	No income	R1 – R1 600	R1 601 - R3 200	Less than R3 200	R3 201 - R6 400		R6 401 - R12 800		R12 801 - R25 600		R25 601 - R51 200 or more	R51 201 and more	Total	
	Num	%	Num	%	Num	%	Num	%	Num	%	Num	%		
Mitchells Plain Town Centre	12	12	9	84.6	3	7.7	0	0.0	3	0	0	7.7	39	
Strandfontein	45	66	39	72.5	27	13.0	15	7.2	9	6	0	7.2	207	
Tafelsig	1 320	2 859	2 832	54.5	3 069	23.9	1 947	15.1	678	129	27	6.5	12 861	
Eastridge	816	1 032	1 299	52.8	1 383	23.2	996	16.7	351	66	18	7.3	5 961	
Woodlands (Mitchells Plans)	594	627	798	40.5	1 152	23.1	1 020	20.5	624	141	27	15.9	4 983	
Lentegeur	819	1 125	1 311	40.2	1 887	23.3	1 797	22.2	927	201	27	14.3	8 094	
Beacon Valley	564	720	942	39.7	1 395	24.9	1 224	21.9	615	120	21	13.5	5 601	
Westridge (Mitchells Plain)	669	516	588	38.1	726	15.6	987	21.2	819	321	33	25.2	4 659	
Rocklands	717	663	912	35.3	1 434	22.1	1 575	24.3	942	225	18	18.3	6 486	
Portland	672	465	606	30.8	957	16.9	1 317	23.3	1 155	417	63	28.9	5 652	
Mandalay	177	150	168	21.3	273	11.7	468	20.1	639	384	66	46.8	2 325	
Colorado	24	24	15	18.6	33	9.7	72	21.2	93	60	18	50.4	339	
Strandfontein Village	285	189	282	18.0	480	11.4	915	21.8	1 215	711	129	48.9	4 206	
Weltevreden Valley	159	171	165	16.5	381	12.7	774	25.8	924	372	54	45.0	3 000	
Bay View	108	69	96	16.3	213	12.7	366	21.9	543	234	42	49.0	1 671	
Westgate	42	42	36	15.0	117	14.7	216	27.1	234	102	9	43.2	798	
San Remo	33	27	30	14.3	72	11.4	126	20.0	198	114	30	54.3	630	
Wavecrest	12	27	18	12.4	42	9.2	87	19.0	129	117	27	59.5	459	
Wolfgat Nature Reserve	0	0	0	0.0	0	0.0	0	0.0	0	0	0	0.0	0	
Mitchells Plain Total	7 068	8 784	10 146		38.2	13 644	20.1	13 902	20.5	10 098	3 720	609	21.2	67 971

Source: Statistics South Africa, (2011)

3.13.4. Monthly income by gender

In Figure 3.7 below it can be seen that the majority of the population within Mitchells Plain (25.2%) earn an income of between R3 201 and R6 400 per month. As can be seen in the figure below a larger proportion of males earn an income between those brackets (R3 201 and R 6 400) compared to females. What is also highlighted is that 7.3% of the population have no source of income at all. When looking at this in relation to gender it becomes apparent that more females (8%) have no income than males (6.6%).

Figure 3.7: Monthly income by gender



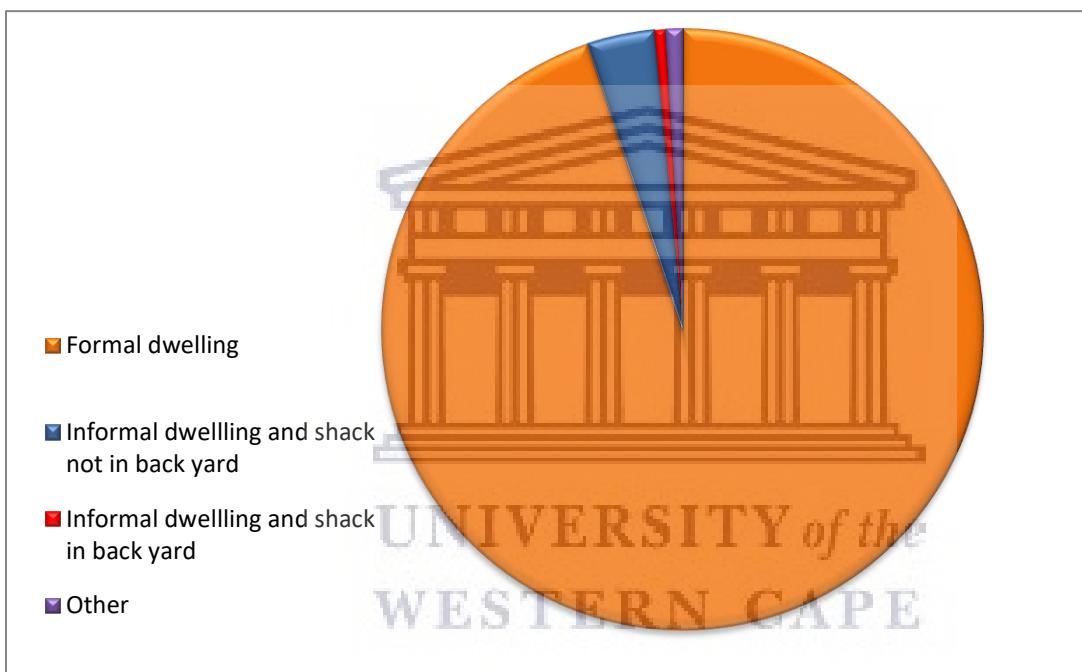
Source: Statistics South Africa, (2011)

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3.14. Dwelling profile

As can be seen in the Figure 3.8 below majority of the housing within Mitchells Plain is made up of formal dwellings. The green indicates the 94.9% of Mitchells Plains' residents live in formal dwellings, whilst 3.6%, indicated by the blue shows that its residents live in informal dwellings with a shack in the backyard. The red represents a further 0.6% that occupies an informal dwelling.

Figure 3.8: The types of dwellings in Mitchells Plain



Source: Statistics South Africa, (2011).

Table 3.11: Distribution of households by dwelling type

2011 Census Sub Place Name	Households in Formal Dwellings		Households in Informal dwellings (shack; in backyard)	Households in Informal dwellings (shack; NOT in backyard)	Households in Informal Dwellings	Households in Other Dwellings		Total Households (HH)
	Num	%	Num	%	Num	%		
Strandfontein	79	38.2	6	118	59.9	4	1.9	207
Tafelsig	11 178	86.9	1 440	69	11.7	174	1.4	12 861
Mitchells Plain Town Centre	31	88.6	3	0	8.6	1	2.9	35
Eastridge	5 630	94.6	249	11	4.4	64	1.1	5 954
Beacon Valley	5 319	94.9	217	13	4.1	56	1.0	5 605
Rocklands	6 262	96.5	134	19	2.4	72	1.1	6 487
Lentegeur	7 870	97.3	162	26	2.3	30	0.4	8 088
Westgate	778	97.6	13	5	2.3	1	0.1	797
Portland	5 518	97.6	84	14	1.7	35	0.6	5 651
Woodlands (Mitchells Plain)	4 848	97.1	74	7	1.6	62	1.2	4 991
Bay View	1 634	97.4	9	18	1.6	17	1.0	1 678
Mandalay	2 276	97.9	9	28	1.6	11	0.5	2 324
Westridge (Mitchells Plain)	4 571	98.1	38	20	1.2	30	0.6	4 659
Weltevreden Valley	2 962	98.7	20	7	0.9	13	0.4	3 002
Colorado	347	99.1	1	2	0.9	0	0.0	350
Wavecrest	467	98.9	4	0	0.8	1	0.2	472
Strandfontein Village	4 144	98.6	17	16	0.8	26	0.6	4 203
San Remo	628	99.5	1	0	0.2	2	0.3	631
Wolfgat Nature Reserve	0	0.0	0	0	0.0	0	0.0	0
Mitchells Plain Total	64 542	94.9	2 481	373	4.2	599	0.9	67 995

Source: Statistics South Africa, (2011)

3.15. Household services profile

Access to basic services such as clean water, energy, and sanitation and refuse removal is a basic human right (WCG 2016). Therefore, human development within a community is largely dependent on the accessibility and availability of basic services associated with housing. Thus, communities with higher access to basic household services have better human development and vice versa (CCT, 2016).

3.15.1. Water

Accessibility to clean water is an essential factor in maintaining a healthy lifestyle. According to the Western Cape Provincial Treasury (2013), water supplied or made available to residents

within the communities should be regarded as safe to reduce the spread of diseases within a community. The majority of Mitchells Plain residents have access to water inside their homes (95.9%), whilst 0.7% of residents do not have access to water. Residents who have access to piped water inside their yard include 2.7% whereas those with water outside their yard counts for 0.7% (Census, 2011).

Table 3.12: Types of access to water

Type of access to water	Number	Percentage %
Piped water inside the home	65 208	95.9
Piped water inside their yard	1842	2.7
Piped water outside their yard	456	0.7
No access to water	486	0.7

Source: Statistics South Africa, (2011)

3.15.2. Energy

The use of energy is a crucial component as it is needed in individuals everyday life, energy is frequently used for cooking, heating and lighting purposes. There are multiple sources of energy these include, natural and man-made. However, the use of these different energy sources has risks which relate to individuals health and safety (Western Cape Government Provincial Treasury, 2014). Electricity is recorded for three main functions in the Census 2011 namely lighting, cooking and heating. The majority of residents use electricity for those three functions.

Table 3.13: Types of energy

Type of Energy	Electricity		Gas		none	
	Number	%	Number	%	Number	%
Lighting	76 512	99.3%	123	0.2	156	0.2
Cooking	64 584	95%	2949	4.3	207	0.3
Heating	57 486	84.5%	915	1.3	8238	12.1

Source: Census, (2011).

3.16. Sanitation

According to the Western Cape Provincial Treasury (2014), sanitation is a means of promoting health through the provision of safe disposal and treatment of human waste. Access to a toilet advances physical health and also provides the user with a sense of human dignity. Where sanitation systems are inadequate, negative health effects can be extremely serious. Table 3.14 below depicts the type of sanitation which shows that most of the population's toilets are connected to a sewerage pipe and is able to dispose of their waste using a flush mechanism.

Table 3.14: Type of sanitation

Type of Sanitation	Number	%
Flush with connected to a sewerage pipe	64929	95.5
Flush with connected to a septic tank	462	0.7
Bucket toilet	966	1.4
None	999	1.5

Source: Census, (2011).

3.17. Refuse Removal

Refuse removal is an essential service that ensures that health-related problems are kept at bay. It also ensures that the physical environment will be protected. A lack of inadequate services is likely to result in uncontrolled and unregulated dumping (Western Cape Provincial Treasury, 2014). The majority of the residents in Mitchells Plain have to refuse collected by the City of Cape Town council.

Table 3.15: Types of refuse

Type of refuse	Number	Percentage %
Removed by the local authority or private company	67680	99.5
No rubbish disposal	111	0.2

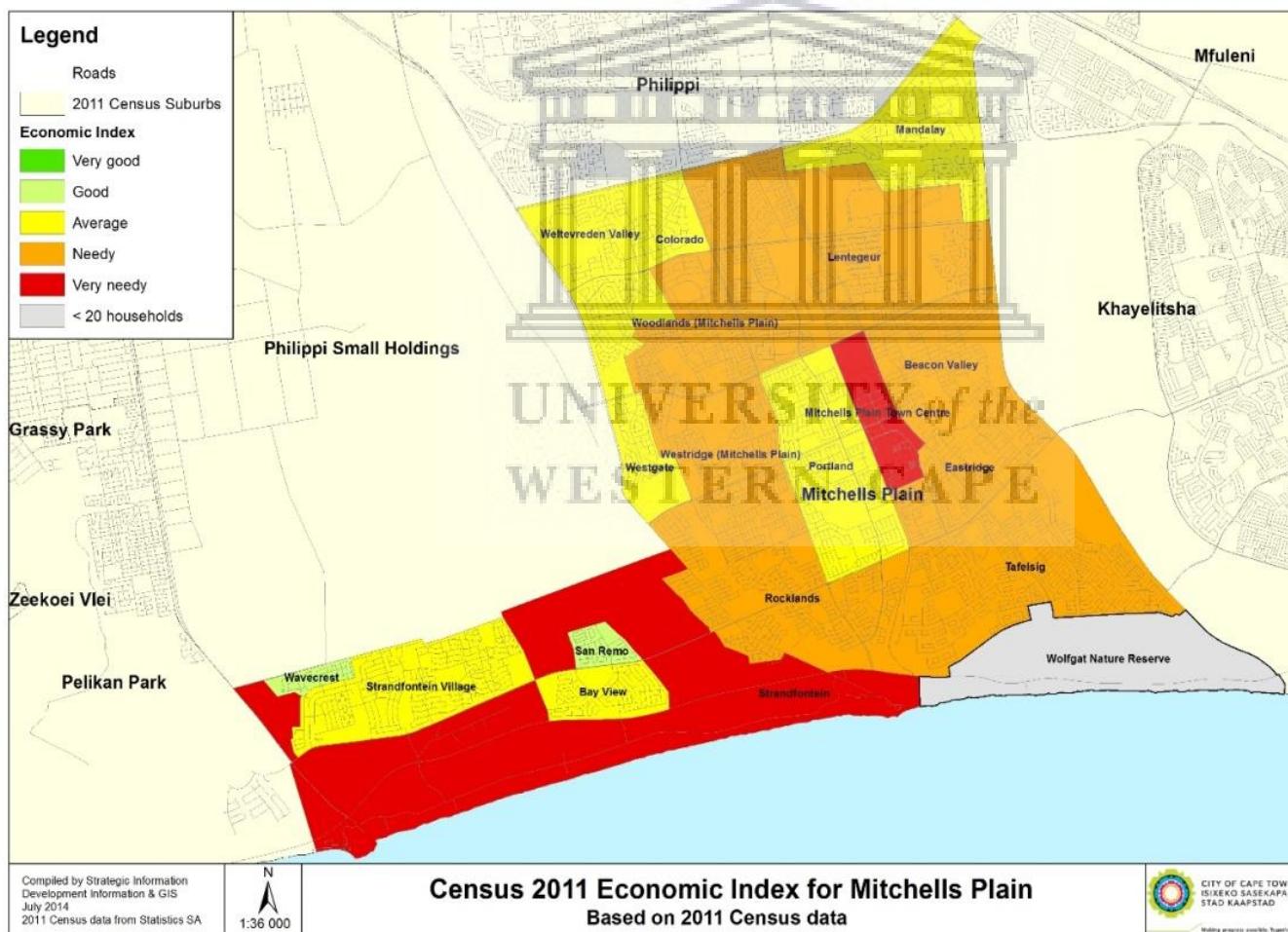
Source: Census, (2011).

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3.18. Economic index of Mitchells Plain

As can be seen in Figure 3.9 below, the majority of the sub-areas within Mitchells Plain are categorized as being ‘needy’. Additionally, there is an equal distribution of the sub-areas falling under the category of ‘average’ and ‘very needy’. The ‘very needy’ sub-areas situated predominantly on the coastal areas of Mitchells Plain, which could be partially due to its residents having limited access to both the formal and informal businesses within Mitchells Plain. Conversely, within this ward of Mitchells Plain, there are two areas that are categorized as being ‘Good’.

Figure 3.9: Economic index by sub-area in Mitchells Plain



Source: Census (2011).

3.19. Summary of chapter

The area of Mitchells Plain was designed for middle-income individuals; however, today the community consists of individuals belonging to both low-income and high-income economic group. This can be seen in the income demographics within Mitchells Plain which highlights that disparity between individuals income creates a difference in terms of food choice. This inconsistency contributes toward the difference in the type of lifestyle the individual is able to practice. This either resulting a positive or negative impact on an individual's food choice. Furthermore, from a geographical perspective most individuals are not situated in areas where supermarkets are easily accessible, this then resulting in them being limited in terms of access to particular food produce.



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CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

4. Introduction

This chapter presents the methodology and research design used to conduct the research. The study employed a mixed-method approach to get the necessary data needed for the study. This thesis uses the empirical data collected from *The Food choice and Body mass (BMI) in Adults and children: Evidence from the National Income Dynamics Study (NIDS) and empirical research from Khayelitsha and Mitchells Plain in South Africa*, research project (Dinbabo et al., 2016). It will also use Census 2011 as secondary data. However, this study focused on the area of Mitchells Plain due to time constraints, and because the sample size was sufficient to conduct an MA mini-thesis. To complement the quantitative data collected, qualitative research methods were used. These included semi-structured interviews, observation and focus groups which were conducted to get an in-depth understanding of the data. The data used for this study consist of both primary and secondary sources.

4.1. Research design

Research design is used to structure, plan and guide a study. It is used to ensure that the research method or methods employed are executed properly throughout the research process (Creswell, 2009). Research design explains all the parts needed to conduct a research study and includes the data collection methods, the sample size, and analysis. Moreover, the research design explains how these were used to answer the main research question (Creswell, 2009). In this study, a mixed-method approach was employed as the study investigated the relationship between gender and food choice amongst adults in the area of Mitchells Plain.

4.2. Research methodology

The research methodology is defined as the systematic way of solving problems (Mühl, 2014). It outlines and explains the specific procedures and techniques that are needed to analyse information about a particular topic (Wilkinson, 1998). The research methodology shows the readers two main factors. The first being how the data was generated and collected while the second factor highlights how the data were analysed (Wilkinson, 1998). Moreover, research

methodology allows the reader to evaluate the overall reliability and validity of a particular research project. The choice of method to be employed is determined by the type of information that is needed to be collected and analysed (Creswell, 2009). In the case of this research, a mixed-method approach was used as there were both numerical and interview data that was captured in order to get the results needed.

4.3. Conducting Qualitative Research

The qualitative research method attempts to achieve an in-depth account of societal norms. This is done by immersing oneself into the social space being studied. Qualitative researchers strive to uncover a social phenomenon that occurs within society. This is done by attempting to understand and uncover what these phenomena mean to the individuals experiencing it (Scott and Garner, 2013). “Researchers try to immerse themselves in the world experienced through the senses of other human beings by interviewing, observing, listening, reading documents, looking at artifacts, and sometimes by having the same bodily experiences as their research subjects” (Scott and Garner, 2013:11). This could include internal politics and systems within the society that allows it to function.

When conducting qualitative research, one gets a sense of a bottom-up approach as the researcher gets information from the actual individuals involved in the social phenomenon rather than those imposing the rules and regulations upon them (Sutton and Austin, 2015). By conducting research at this level the researcher is able to identify other issues which could lead to additional research. Scott and Garner (2013) describes this ‘back and forth’ motion as a crucial part of the qualitative process in that it allows the researcher to compare the data in such a manner that it becomes apparent that there are inconsistencies between the ‘world’ of the researcher and that of his/her research participants. Scott and Garner (2013) highlight that these inconsistencies between the researcher’s and participants’ lived experiences results in the development of a ‘dual consciousness’. Additional information will become apparent which highlights the inconsistencies between different societies and resulting from these two components a theory will develop. Theories are used to explain a social phenomenon as well as the individual’s experiences. According to Scott and Garner (2013:12), “Qualitative researchers are often impelled to try to break through this veil that separates us from one another and this

desire is as strong as the desire to carry out scientific research and expand knowledge about human beings in society.”

4.3.1. Qualitative Data Collection Methods

Qualitative research is used to explain and discover social phenomena within societies. It accomplishes this by using data collection methods. There are various qualitative data collection methods these include; interviews, participant observation, focus groups and internet data (Silverman, 1993). These data gathering methods are among the most commonly used in qualitative research. This study employed three main qualitative collection data methods: participant observation, semi-structured interviews, and focus group discussions.

4.3.2. Participation Observation

Observation is categorized into two parts, the first being ‘simple observation’. Babbie and Mouton (2001) explain that this type of observation is when the researcher remains an ‘outsider’. The researcher will not engage directly with the given society but acts as an outside observer. The second type of observation is more commonly used is ‘participant observation,’ a method that is a much more interactive process. This type of observation required the researcher to integrate him/herself into the study area.

Often this role becomes stressful as the researcher can become too comfortable within the research field and cannot remain objective whilst collecting data. Moreover, there are ethical issues that are needed to be considered. Researchers might come across information that is perceived as illegal or acts that are viewed as being immoral to the researcher. Refusing to partake might ruin the rapport developed with those being ‘studied’. Kelleher (as cited in Babbie and Mouton, 2001) stated that although there are these challenges, there is an equal amount of positive attributes that result from conducting participant observation. These include factors such as the researcher being able to notice aspects that are not apparent to outsiders, as individuals actions can tell the researcher more about a social phenomenon than words do. In this study, a simple observation was employed to gather non-verbalized information. These included factors such as information about the community as well as dynamics within the household.

4.3.3. Interviewing

The conversation is noted as being the easiest means of obtaining information, as well as the quickest means of getting to know another individual. This is done by asking questions and listening to the information being shared (Kvale, 2007). Herbert and Rubin argue that “The qualitative interviewing design is characterized by being flexible, interactive, and continuous, rather than prepared in advance and locked in stone” (cited in Babbie and Mouton, 2001:289). There are two distinctive types of interviewing: semi-structured interviews and in-depth interviews’. The semi-structured interview method is described by Babbie and Mouton (2001) as the most commonly used method of gaining data from subjects. The interview method is noted to be different, in that it does not compromise of predetermined responses. This method relies heavily upon the rapport developed between the researcher and the subject. The more comfortable the subject/s and researcher become the more information is gained. A key characteristic of this type of interviewing method is that the qualitative researcher does not have to stick to specific questions but rather uses the questions as a guide.

The second type of interviewing method is known as ‘In-depth interviews’. Babbie and Mouton (2001) state that this method of interviewing is not aimed at understanding the content provided by the subject. Rather it is concerned as to why the subject practices or thinks about a particular topic in a particular way. This method requires the researcher to probe the subject by revealing why. The outcome of conducting this type of interview is to understand the origin of norms and beliefs within the individual’s daily life (Babbie and Mouton, 2001). In this study, semi-structured interviews were used to conduct information in both the enumeration area of Mitchells Plain. This was done by selecting 50 households in the area of Mitchells Plain and using a semi-structured interview guide. The information gathered from these interviews provided the researcher with an in-depth understanding of factors that contributed to food choice and causes of obesity.

4.3.4. Focus Groups

Focus groups can be defined as “Any group discussion may be called a focus group as long as the researcher is actively encouraging of, and attentive to, the group interaction (Kitzinger and

Barbour, 1999 as cited in Barbour, 2007:2). There are two ways in which a researcher can conduct a focus group. The first method, according to Babbie and Mouton (2001: 292), is “getten-for-the-price-of-one.” This method requires the researcher to gather between ten and fifteen individuals and the researcher then needs to ensure that each subject within the focus group speaks in order for the researcher to walk away with individual responses rather than a group response.

The second type of focus group involves getting an overall understanding and opinion of a particular phenomenon, rather than receiving individual opinions. The advantages of running focus groups are that it can help a researcher obtain information about a sensitive topic, as individuals are more inclined to discuss/share information if they feel comfortable with their surroundings. Focus groups can also be helpful in accessing individuals who are considered hard to reach (Barbour, 2007). Moreover, focus groups, unlike that of participant observation, can obtain a substantial amount of data in a short amount of time (Babbie and Mouton, 2001). This research employed focus groups to get additional information on food choices and causes of obesity. In the area of Mitchells Plain, three focus groups were held. One focus group focused on females and another was a mixed focus group. The third focus group was held with children (state age group). The focus group consisted of between 7-12 participants. The focus groups were designed to reflect the opinions of members of the low-income community of Mitchells Plain (Dinbaboo, et al., 2016).

4.4. Conducting Quantitative research

Quantitative research focuses on the gathering of numerical data that is used to conduct various statistical tests. Quantitative research attempts to answers questions such as ‘how much’ and to ‘what extent’ through quantification. This is done to generate information on groups of people or to explain a particular phenomenon that occurs within a society (Creswell, 2009). Generating results for quantitative research can be less time consuming as there are multiple statistical programs – such as STATA and SPSS that can be used to generate variables and results.

The building blocks of any quantitative study are variables and constants. Christensen, Johnson, & Turner, (2015) define a variable as something which takes on different categories and values. There are different types of variables which are dependent on the type of research to be

conducted. Variable can be determined by levels measurement. There are two types of variables used when focusing on levels of measurement. The first being a categorical variable, this type of variable varies by kind, type or categories. The second type of variable is a quantitative variable, this variable varies in degree or amount but it is ultimately dependent on the phenomenon being studied (Christensen et al., 2015). The second form of variables used when describing the data are independent and dependent variables. An independent variable (IV) refers to the ‘cause’ of another. Dependent variable (DV) is usually influenced by one or more independent variable (Christensen et al., 2015). A constant is defined as something that cannot vary (Christensen et al., 2015). Gender is an example of a constant as males and females take on the value and cannot vary.

There are four main types of quantitative research designs. The first being descriptive, the second correlational, third quasi-experimental, and the fourth is experimental (Creswell, 2013). The data analysed can be collected through surveys, questionnaires, and polls. It allows for the manipulation of statistical data, which can be done by using programs such as STATA and SPSS. This study employed self-administered questionnaires to gather the data. It also used secondary data derived from the National Income Dynamics Study (NIDS). The study also used anthropometric measurements to generate the Body Mass Index (BMI) of participants.

4.4.2. Self- administered questionnaires

A total of 519 questionnaires were administrated in Mitchells Plain (Dinbabo et al., 2016). The quantitative questionnaire was divided into 12 sections and consisted of 160 questions. Section A dealt with the demographics of the sample population. Section B focused on obtaining information relating to the household characteristics while Section C dealt with employment and income this section is specifically aimed at adults (18+). Section D captured information on meals consumed and its sources; it also includes a 24-hour dietary recall, which captured specific food items eaten the previous day. Section E captured the eating habits of individuals and posed questions aimed at food preparation and its frequency. Section F captured information pertaining to eating habits specifically among adults (18+); it focused on mothers/caregivers eating habits and food choices for children. Section G and H captured weight management. This section was used to calculate individuals BMI. Section I captured self-perceived health status, as well as the

health conditions of individuals. Section J captured the knowledge of obesity from both adults and children. Section K-L was used to capture information pertaining to the child's best interest. The questionnaire allowed for sufficient information to be gathered on food choices amongst males and females.

In order to calculate the BMI of the research participants, an anthropometric measurement was taken. A maximum of 4 to 5 household members' BMI was taken. To calculate the BMI the height measurements were taken using instruments taken from UWC's Department of Public Health. Furthermore, weight was captured using scales.

4.5. Study population and sampling techniques

Due to the objective of the research, is focused specifically on the two age groups; the first being children aged five to eleven years of age and adults aged 18 and older. However, this research paper will only make use of the data pertaining to adults aged 18 and older.

4.5.2. Sampling procedure

The study used the cluster sampling technique to select the households and participants needed for the study. Crankshaw et al., (2001) define cluster sampling as a sample of clusters that are selected from the population to be studied. Using the cluster sampling method requires the researcher to divide the population group into smaller or separate groups. The researcher then selects households/participants from each of these smaller groups. This results in the researcher being able to get participants from the entire enumeration area (Crankshaw et al., 2001).

This study employed the cluster sampling method as the size of the research area was big and required to be divided into different subgroups. Geographically the Mitchells Plain area is too big and there are no household lists available for the area. Therefore, this type of sampling method was best suited. Moreover, there was a similar study conducted in Mitchells Plain in 2000 and cluster sampling was used (Crankshaw et al., 2001). In order to achieve the cluster sample technique, the study used the 2011 Statistics South Africa (Stats SA) framework to select the enumeration areas (EAs). Twenty-five (25) EAs were randomly selected in Mitchells Plain,

and the probability proportional to size (PPS) was used to ensure that each household had an equal probability of selection.

4.5.3. Selection of households

Twenty four households were selected from each of the 24 EAs in Mitchells Plain. This resulted in a sample of 600 for the Mitchells Plain. To select households, geographical coordinates were used to demarcate the EAs. Google Maps was used to select households for interviewing, this was done by selecting every nth house was selected. The nth household was selected by dividing the number of households in the EA by the expected amount needed in each household.

Table 4.1: Sample realization

Survey site	Expected sample size	Sample realized		Refusals
		No.	%	
Khayelitsha	600	532	89	68
Mitchells Plain	600	519	87	81
Total	1200	1051	88	149

Source: Field Survey, (2016).

4.6. Data analysis

Data analysis is an important factor as it allows the data that was collected to be examined and turned into information that can be applied in studies. This is done in multiple ways, as each research design employs different methods of obtaining information. In this study, both qualitative and quantitative research methods were employed which resulted in the use of descriptive, inferential and thematic analysis. Although the research conducted focused on gathering and analysing information from both the EAs of Khayelitsha and Mitchells Plain, this study focused on the area of Mitchells Plain due to time constraints, and because the sample size was sufficient to conduct an MA mini-thesis.

4.7. Quantitative data analysis

In statistics, there are two main categories, the first being descriptive statistics. This form of statistics allows the researcher to describe and summarize the data collected (Christensen et al., 2015). It also allows the research to understand the data better as well as making it understandable for the audience reading the research. Descriptive analysis is helpful in providing a context and general findings derived from data that was captured (Christensen et al., 2015). The second category uses inferential testing as this enables the researcher to venture deeper into the data and provide additional testing (Christensen et al., 2015). This is often in the form of hypothesis testing and estimation. In hypothesis testing the researcher aims at testing values of a population and in estimation the researcher aims at estimating values of the population. Inferential statistics are often used to show generalizations within populations (Christensen et al., 2015).

In this study, the statistical analysis program STATA was used to carry out both the descriptive and inferential analyses. Descriptive statistics allowed for tests to show frequency distributions, confidence intervals and the significance level between independent (Male and Female) and dependent variables (Food choice, income, environment, physical activity and so forth). STATA was also used to conduct inferential statistics (Kent State University, 2019).

4.8. Qualitative data analysis

In analysing the qualitative data, thematic analysis was used. The thematic analysis allows the researcher to gain a deeper insight into the data that was gathered. This type of analysis results in sub-themes to be generated, helping the researcher get a general understanding of the main factors that could be contributing to a particular phenomenon. Thematic analysis is done by following 5 main steps. The first is collecting the data. The second step requires coding the data, which is done by evaluating the data and creating ‘general’ labels; these labels are then defined (Howitt and Cramer, 2007). The third step requires the researcher to ensure that the labels are clear and cannot be misinterpreted. This is done by having labels checked by one or more persons to ensure consistency and clarity. These labels then get put into a codebook. The fourth step requires the researcher to use the codebook, and further identify themes and sub-themes.

These themes emerge from patterns that were found in the data (Howitt and Cramer, 2007). This can be found in conversation and vocabulary that is used. The fifth stage requires the researcher to finalize the name for each of these themes. For semi-structured interviews, the thematic analysis helps the researcher to sort and understand the transcribed data (Boyatzis, 1998; Howitt and Cramer, 2007).

4.9. Ethical considerations

This study used and followed the strict ethical guidelines enforced by the University of the Western Cape (UWC). Before the commencement of fieldwork, ethical clearance was needed from the Senate Higher Degrees Committee as well as the Senate Ethics Committee at UWC. Then the necessary precautions were taken to ensure that the participants were aware of what the study was about and their consent was received before the beginning of any interviews. This was done was ensuring the following:

- Researchers briefed the participants on the process of the interview and what the research was going to be used for.
- All adult participants signed a consent form to protect themselves and the researcher
- All child participants, parents were asked to sign consent forms.
- Consent forms and all other documents needed to be signed were written in English but communicated in English and Xhosa.
- Ward counsellors in particular EAs were contacted and briefed about the project and times that researchers would conduct interviews. This was to ensure the safety of the researcher and participants.

4.10. Study limitations

Due to the length of the questionnaire; 12 sections and 160 questions, a few respondents were reluctant to finish the questionnaire. Moreover, when conducting the research it was hard to interview all household members as some members were either in school or at work. What had become apparent in the research was that the majority of the sample size were females as most of the household heads were males and were at work during the research period. An additional limitation was the time period that researchers went out into the field, as it coincided with the

period of Ramadaan¹ which affected the responses from most Muslim participants, especially when asked about their 24 dietary recalls.

4.11. Reliability and validity

4.11.2. The validity of Statistical Tests

When measuring validity within research two factors should be noted, the first is that in order for your research to be valid, the instrument used to conduct the test should measure the concepts in question. Secondly, the concept being measured, should, in fact, be measured correctly (Bailey, 1978). Due to the unique data set, STATA was employed to do the statistical analyses of the data and information was backed up on external hard drives.

4.11.3. Reliability of Data Instruments

Reliability was ensured as research instruments were tested and the researcher was obligated to partake in training which showed them how to use the data instruments. The questionnaire went for various reviews and was refined multiple times to avoid confusion among participants and to appear as user-friendly as possible. When faced with questions about perceived health status individual were given visual aids to avoid confusion and to allow for a consistent module of measurement of perceived health status and body image. The questionnaire conducted multiple desktop studies to refine it further before researchers embarked into the field.

4.12. Summary of chapter

The study employed a mixed-method approach to get the necessary data needed for the study. This thesis uses the empirical data collected from The ‘Food choice and Body mass’ study and from Census 2011. To complement the quantitative data collected, qualitative research methods were used. These included semi-structured interviews, observation and focus groups which were conducted to get an in-depth understanding of the data. The data used for this study consist of both primary and secondary sources

¹ This is duration during the year, that for an entire month all Muslims do not eat from sunrise to sunset.

CHAPTER FIVE: DATA ANALYSIS

5. Introduction

This chapter analyses data collected in Mitchells Plain and presents findings based on the research questions. It also provides information regarding food patterns and factors contributing to food consumption patterns. This chapter does this by using both qualitative and quantitative information. While this research draws on basic quantitative data, the findings draw heavily on the qualitative data gathered from respondents. The quantitative findings are done by using empirical data and by applying cross-tabulation techniques to the categorical data. The qualitative analyses are based on information gathered from research participants and focused on a variety of themes ranging from eating habits to the determinants of food choice. This was done to showcase the gender disparity in terms of food choice in Mitchells Plain. The first section of the study draws on the quantitative findings of the study which is used to describe the demographic and socio-economic status of the sampled population. The second section of this chapter draws on the qualitative findings which highlight the difference in food choice by gender. This was done to provide information on why there is a difference in terms of food choice for particular food produce. This chapter ends with a conclusion which summarizes the entire chapter.

5.1. Socio-economic demographics in Mitchells Plain

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The demographics of a sample population are an important component in terms of understanding and interpreting research outcomes. Table 5.1 below profiles the social-economic characteristics of the sampled population in Mitchell's Plain. It cuts across the gender composition, age, marital status, racial and religious characteristics, educational attainment and employment demographics. For the purpose of this study, a total of (n=823) adults were surveyed in the area of Mitchells Plain.

Table 5.1: Socio-economic demographics of the sampled population in Mitchells Plain

Demographical Information		Frequency	Percentage (%)
Gender	Male	292	43%
	Female	387	57%
	Total	679	100%
Age dynamics	18-35	232	33.82%
	36-53	223	32.51%
	54-71	196	28.57%
	72-88	35	5.10%
	Total	686	100%
Religious Affiliation	Christianity	28	57.14%
	Islam	21	42.86%
	Traditionalist	7	1.02%
	Refused	3	0.73%
	Total	49	100%
Racial dynamics	Refused	5	0.73%
	Black	54	7.91%
	Coloured	619	90.63%
	Indian	5	0.73%
	Total	683	100%
Educational Attainment	None	16	2,39 %
	Primary	155	23,17%
	Secondary	433	64,72%
	Technical Collage	31	4,63%
	Tertiary	22	2,29%
	Did not answer	12	1,76%
	Total	669	100%

Source: Field Survey, 2016.

In Mitchells Plain out of the sample population (N=823) only, 679 participants responded to the gender-related question. When looking at the gender dynamics within the sampled population, the findings show that there are more females than males in Mitchells Plain. Table 5.1 highlights that the female population in Mitchells Plain makes up 57% of the overall population whilst males make up the remaining 43%. Although, it is not a significant difference in terms of the percentage between males and females at the household level, there are more females than males in each household.

When looking at the age distribution, the adult population refers to individuals aged 18 years and older. Majority of the sampled population is made up of adults aged 18-53. This age category makes up 66.33% of the sampled population. Adults aged 54-71 represent 28.57% of the population, whilst the remaining 5.10% represents adults aged 72-88 years of age.

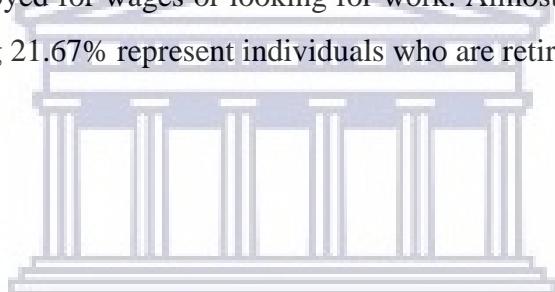
Furthermore, 53.22% of the respondents interviewed stated that they are married, which represents more than half of the sampled population. A further 29.69% stated that they were never married. The remaining, 17.1% stated that they were cohabiting, divorced or widowed. What the research highlighted was that out of the 43 respondents, who were divorced, 27 were females and the remaining 16 were males. Furthermore, out of the 47 respondents who noted that they were widowed 34 were females and 13 were males. In terms of food choice and purchase power, the statistics regarding the respondents shows that 27 households are headed by single females and out of these household's majority stated that they had children. This had an effect on the type of foods can be bought. The majority of the respondents noted that they have to buy not only what is affordable but what is going to stretch as they have families to feed. When looking at marital status

When looking at the racial categories in Mitchells Plain it is evident that the majority of the sampled population is made up of the coloured population. This racial category represents 90.63% of the population. The remaining 9.37% represents the African and Indian racial groups. In terms of the religion category Table 5.1 shows that 57.14% represents the respondents who are affiliated with Christianity. Individuals who conform to Islam represent 42.86%. The remaining 0.73% represents individuals who conform to the traditionalist religion.

When looking at the statistics related to educational attainment in Mitchells Plain it shows that 87.89% of the respondents answered that they either completed primary or secondary education.

A total of 22 respondents stated that they had completed tertiary education this represents 2.39% of the population. The remaining 2.39% represents those who have stated that they have received no formal education. This not only affects the type of food individuals consume due to lack of nutritional knowledge it also affects the employment status of the individuals.

In South Africa, there are four categories describing how income is generated. These categories include being self-employed, receiving private transfers, receiving a wage income or receiving public transfers (Carter and May 1999). Private and public transfers refer to ‘income ‘received from family members. Public transfers specifically refer to money received from governments, which often takes the form of grants or pensions or money received from a family member. As can be seen in Table 5.2 below, the employment status within Mitchells Plain shows that 2.13% of the respondents are students. 44.76% of the sample population represents individuals who either self-employed, employed for wages or looking for work. Almost 31% of the population is unemployed. The remaining 21.67% represent individuals who are retired or unable to work.



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Table 5.2: Employment Demographics and Household Income

Employment Profile		Frequency	Percentage (%)
Employment Status	Employed for wages	164	29,13
	Self-employed	42	7,46
	Looking for work	46	8,17
	Student	13	2,13
	Retired	122	21,67
	Unemployed	172	30,55
	Refused	4	0,72
	Total	563	100
Grants	Child support grant	30,51%	100%
	Old age grant	37,26%	100%
	Foster care grant	4,48%	100%
	Disability grant	10,53%	100%
Household income	No Income	12	1,53%
	R1-R1200	34	4,34%
	R1201-R2400	108	13,79%
	R2401-R3600	126	16,09%
	R3601-R4800	77	9,83%
	More than R4800	247	31,55%
	No Income	12	1,53%

Source: Field Survey, 2016.

Table 5.2 also shows the information relating to alternative means of income for the households. These include grants such as Old Age Grant (OG), Disability Grant (DG), Foster Care Grant (FCG) and Child Support Grant (CSG). As can be seen in Table 5.2, 30.51% of households in Mitchells Plain receive a child support grant. A further 4.48% of the sampled population is dependent on a foster-care grant. While 10.53% of the sampled adult residents in Mitchells Plain receive a disability grant and 37.26% of the sampled population receive an Old Age Grant.

When looking at household income within Mitchells Plain, the data shows that 31.55% of the population earns an income of more than R4800 per month while only 1.53% of its population has no source of income. This 1.53% represents the students and unemployed/ retired individuals. The unemployed/retired category represents individuals that receive a pension and grants. Moreover, individuals who are retrenched also receive benefits from the Unemployment Insurance Fund (UIF). This is not a permanent source of income as it only lasts a few months.

5.2. Situational Analysis

In Mitchells Plain individuals were asked questions regarding their eating habits and food preferences. This was done to determine the difference between food choice amongst males and females. This was also done to see what the perceived determinants of their food choices were. When asked the question '*what types of eater are you*' it becomes apparent that males and females enjoy consuming similar foods for multiple different reasons. Furthermore, when asked what type of foods they 'would like to eat', it became visible that choice was not available to most respondents as they were often unable to consume the foods they enjoy because they had to settle for what was available and what they could afford. Therefore affordability and distance are perceived as the most common determining factor in deciding the types of foods they are able to eat.

5.2.1. Changing dietary habits

Food consumption in South Africa has changed over the past decade; the impact of globalization has resulted in individuals changing their diets as they are now being exposed to different types of foods which are predominantly influenced by a western diet. This has resulted in a diet that is high in saturated fats, carbohydrates and low in fibre (Popkin and Gordon-Larsen, 2004). Literature shows that there are multiple factors that influence this change in diet which include, but are not limited to income, age, religion, and geographical location (Popkin, 2002). Aside from the factors mentioned above, there has been a nutrition transition which has resulted in a shift from traditional foods to 'convenient foods'. This refers to the consumption and energy expenditure that coincides with economic, demographic and epidemiological changes within a particular community, city or country (Popkin, 1998).

Table 5.3: Employment status in Mitchells Plain

Employment	Males	Females
Employed for Wages/Salary	36.64%	23.46%
Self-employed	9.90%	5.25%
Out of work and looking	6.90%	8.64%
A student	2.16%	2.47%
Retired	21.12%	22.53%
Unemployed	23.28%	36.42%
other	0.00%	0.62%
Not applicable	0.00%	0.31%
Refused	0.00%	0.30%
Total	100.00%	100.00%

Source: Field Survey, (2016).

As can be seen in Table 5.3, 23.46% of women stated that they are employed, while an additional 5.25% stated that they were self-employed. Due to the changing economic patterns within Mitchells Plain women are forced to enter the labour market to help contribute towards household expenses. Conversely, this has resulted in women having less time to devote to food preparation. However, with more females entering the workforce, less time is allocated for food preparation. Therefore, it can be argued that the growing nutritional transition within the community of Mitchells Plain, could be a result of both women entering the labour force as well as a rise of fast-food restaurants as Kentucky Fried Chicken (KFC), McDonald's and Burger King have become extremely popular within the community (Savage, Fisher and Birch, 2007).

Table 5.4: Responsibility for meal planning

Responsibility for meal planning	Males	Females	Total
Less than half	12,03%	5,34%	8%
Half	15%	14%	14%
Most	6,96%	17,94%	14%
All	16,46%	50,00%	37%
Total	100%	100%	100%

Source: Field Survey, (2016).

As can be seen in Table 5.4 above the majority of women in Mitchells Plain are responsible for meals planning. This resonates with literature that shows that women in most families are responsible for meal planning and feeding their families. Table 5.4 highlights this by showing that females are overall responsible for meal planning. Conversely, this has also resulted in an increase in non-communicable diseases (NCD) such as cholesterol, diabetes, high blood pressure, and heart disease.

Table 5.5: NCD in Mitchells Plain

Type of Non-Communicable Disease (NCD)	The percentage that suffers from NCD in Mitchells Plain %
Diabetes type1	8.33%
Diabetes type2	6.49%
Cancer	2.29%
Cholesterol	16.32%
High blood pressure	29.46%
Heart disease	7.48%
Total	70%

Source: Field Survey, 2016.

As can be seen in Table 5.5 there are at least a 5% and more of the sample population in Mitchells Plain that suffers from at least one of the above mentioned NCD's. This is a result of

multiple factors, however, NCDs such as cholesterol, diabetes and high blood can be directly linked to poor/bad eating habits (Center for Disease Control and Prevention, 2015). This resonates with studies that show individuals who change their diet patterns for economic reasons may develop a range of nutritionally-related diseases such as diabetes, cancers, and cholesterol (National Center for Health, 2015). Moreover, it has also resulted in a high rate of overweight and obesity due to ‘over-nutrition’ which is mainly caused by the excessive consumption of carbohydrate-dense foods, which is related to the excessive consumption of fast foods.

5.2.2. Dietary diversity and eating patterns.

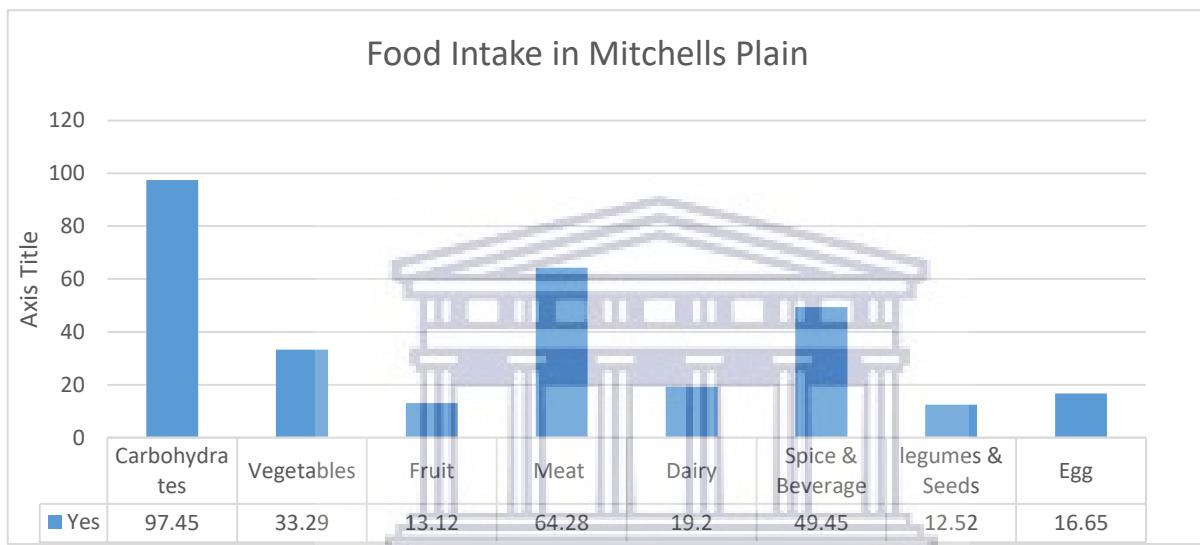
There are multiple ways to observe dietary diversity and dietary trends within a community. The most common method of doing this is by looking at one's dietary diversity. Dietary diversity is used to characterize the diets of individuals, communities, and households (FAO, 2010). Furthermore, it can be used to determine factors such as food security and the nutritional content and value of an individual's diet. Therefore, it is important to maintain a diverse diet, which requires one to consume food from different food groups. According to the World Health Organisation (WHO, 2019), a healthy and balanced diet consists of the following foods groups: vegetables, fruits, nuts, wholegrain and legumes (e.g. peas, lentils, and beans).

However, our food environments, in conjunction with factors such as income and gender, play a determining role in what type of foods the individual is exposed to. Food environments can be defined in terms of geographical access to food in a community or in a neighbourhood (Rideout, Mah, and Minaker, 2015). According to Battersby, (2011), food environments can affect people's food purchasing and eating choices as well as the quality of their diets and diet-related health outcomes.

5.3. Food intake in Mitchells Plain

This thesis examined food consumption amongst adult participants in Mitchells Plain. When looking at food choice in Mitchells Plain Figure 5.1 below shows the percentage of food intake per food group amongst adults in Mitchells Plain.

Figure 5.1: Food groups in Mitchells Plain



Source: Field Survey, (2016).

Figure 5.1 highlights that 97.45% of the respondents noted that they eat foods belonging to the carbohydrates food group. This is partially due to the fact that the type of foods belonging to this food group includes foods from a range of healthy products such as fruits and vegetables to unhealthy foods such as pastries, white bread, and sweetened goods. The second highest food group consumed is Meat: 64.28% of the respondents stated that they consume meat products such as red meat, chicken, sausage and processed meats, highlighting that the remaining 35.72% eats foods that exclude meat products. Literature highlights that dietary constraints which are often enforced by cultural or religious specifications can act a contributing factor in terms of food choice. The dietary specification in relation to food choice plays a role in shaping what an individual is able to eat or not. In Mitchells Plain the three dominant religions are Christianity, Islam, and Traditionalist. Each religious group has specific dietary specifications and requirements; some are stricter than others. In terms of specification for Christians, there are none, however, individuals may choose whether or not they would like to consume alcohol or

whether they would like to consume meat or not (Patience, 2016). In Islam the dietary specifications are much more specific; Muslims must eat Halaal (lawful) foods. This entails consuming food from a Halaal slaughtered animal. Haram (prohibited) foods include products such as; pork and non-halaal animal-derived additives. In Mitchells Plain, supermarkets are not equally distributed, this has resulted in some individuals having to travel far distances in order to purchase foods that meet their specific dietary needs. These highlighting how one's food environment limits the types of foods individuals are exposed to. Furthermore, the cost implications associated with obtaining certain products have shaped individuals diets as they often have to reduce the intake of particular food product in order to satisfy their dietary specifications and income brackets.

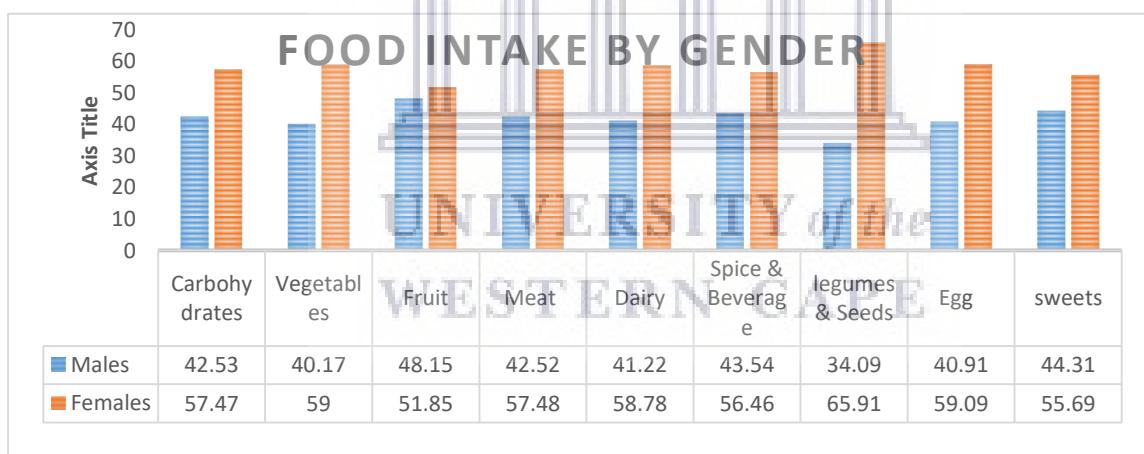
Therefore, when looking at religion in conjunction with factors such as geographical location and economics it becomes apparent that these factors often shapes the type of foods the individual is exposed to and is able to consume. As can be seen in Table 5.1 below, 42.8% of the individuals are Muslim. Table 5.2 also highlights that 39% of the overall sample population is unemployed. This result in an individual being limited in terms of the foods they are able to eat. Literature highlights this by showing that one's 'social class' or ones 'economic status' shapes the types one is able to eat (Turner *et al.*, 2018).

Furthermore, approximately 50% of respondents stated that they eat spices and beverages; this is due to the fact that spices are used in food preparation. When looking at the consumption of fruits and vegetables, 33.29% of the respondents stated that they consume vegetables whilst only 13.12% of the respondents stated that they eat fruits. This is also due to the cost associated with obtaining good quality fruits and vegetables in Mitchells Plain. This can be seen in research that highlights that the cost of a quality product is extremely expensive. Literature also highlights that the preference for fruits and vegetables is a predictor for long-time healthy eating behaviour (Rasmussen *et al.*, 2006). The consumption of fruits and vegetables is also linked to preference. This is developed as a result of individuals being familiar with a particular food product, which then results in a preference for eating particular food produce. Figure 5.1 also shows that a further 19.2% of the respondents stated that they consume foods belonging to the dairy products food group.

5.4. Food choice and gender

Although food choice is driven by multiple factors and food culture determines what individuals are able to eat. Gender plays a role in that it shapes the way people think about particular foods, as well as the nutritional value of it. Figure 5.2 below shows that women in Mitchells Plain consume a higher percentage of food across all food groups compared to that of males. This can be argued to be a result of females practicing a much more diverse diet than males. This statement is consistent with the literature, which highlights that women, in general, consume a much more diverse diet than males (Arganini et al., 2012). Research goes on to explain that women's food choice is predominantly driven by maintaining a healthy lifestyle, and due to the fact that women would like to maintain a good looking physique. As well as the fact that women are less skeptical about nutritional information compared to males. Therefore, females are more inclined to attempt to practice a much more diverse lifestyle than males.

Figure 5.2: Food intake by gender



Source: Field Survey (2016).

5.5. Chi-Square

In order to find out if there is a significant relationship between gender and food choice tests were run by gender and food groups. As can be seen in Table 5.6 below each food group showed that there is no significant difference between males and females and the different food groups.

Table 5.6: Chi-Square test

Food Groups	Degree of freedom	P-value
Carbs	2.5757	0.109
Fruits	1.0425	0.307
Veg	8.6094	0.003
Meat	0.1454	0.703
Eggs	0.2077	0.649
Dairy products	0.1818	0.670
Legumes, seeds and nuts	3.1860	0.074

Source: Field Survey (2016).

Although there is no significant difference between males and females across the various food groups, this is a result of multiple factors. These include, but are not limited to factors such as finance, distance, education and time. Gender does, however, play a strong role in terms of preference and choice, yet income and distance are noted as being amongst the top determinants in terms of food choice.

5.6. Analyses of food choice by gender

This section presents the findings of the study area based on the qualitative information gathered in Mitchells Plain. The qualitative research findings analyse the information from the research participants on a variety of themes ranging from eating habits to determinants of food choice. This was all done to showcase the gender disparities in terms of food choice in Mitchells Plain. This section begins with the importance of dietary diversity and eating patterns by gender which highlights the types of foods males and females consume. The second section then goes on to evaluate prominent factors that influence food choice and food consumption patterns by gender.

The section concludes by presenting a summary of the findings of both quantitative and qualitative.

5.6.1. Vegetable versus meat intake

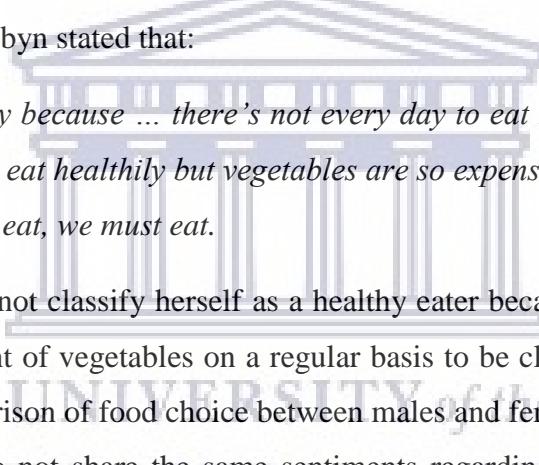
According to Tian, Boyce, Henry, and Shrivastava (2002), males and females differ greatly when it comes to food consumption patterns, especially when factors such as culture, religion, and finances are taken into account. Males often consume much more “hearty” foods such as meat, pasta, and fried food. Moreover, they are also noted to enjoy more “fast-foods” than females. Females, on the other hand, are associated with consuming “lighter” foods such as poultry meats, vegetables, and salads (Arganini et al., 2012). Similarly, in Mitchells Plain, there is a strong association between males and meat consumption compared to females. This is supported by literature which shows that females are more concerned about their weight than males and this subconsciously shapes what individuals eat and can be reflected in the types of foods they choose to eat (McCue, 1996:163). When females were asked about food choice, it became apparent that there are multiple underlying factors that shape what they eat, and that food choice is not based solely on preference but by body shapes as well.

When individuals were asked about food preference the majority of the females stated that they preferred having a higher percentage of vegetables than meat in their diets. This is consistent with literature that shows that females prefer a higher ratio of vegetables on their plate than meat (Beardsworth, Alan, Bryman, Alan, Keil, Teresa, Goode, Jackie, Haslam, Cheryl, Lancashire, and Emma, 2002). This can be seen in a response from Sharifa from Westridge who stated that she “*like[s] carrots, cucumber, lettuce, cabbage stuff like that... spinach*” to be included in her diet. A similar response can be seen by Aida from Tafelsig who, when asked to explain what a regular meal would consist of, explained that she, “*like[s] vegetables and sweet potato*”. Similar responses came from other females in Mitchells Plain. Conversely, when males were asked about food intake respondents answered very differently.

When male respondents were asked about their favourite foods, most stated that they preferred eating both meat and vegetables, but with a higher percentage of meat on their plates than vegetables. This can be seen in a response from Mark from Westridge who stated that “*I prefer chicken, fish and ... and steak*”. A similar response can be seen by Shafiek from Westridge who

stated he preferred to have more meat on his plate than vegetables. Marlon from Tafelsig stated that he “*like[s] junk food*” because “*it tastes nice.*” When probed further, Marlon explained that his food choice is shaped by the taste and that he does not consider his health at all.

These findings resonate with a study done Beardsworth et al., (2002) which highlights that women tended to favour ‘healthier’ meals. The study showed that women rated healthier meals to be higher in pleasure and convenience than men did. Similarly, the study conducted by Beardsworth et al., (2002) highlights that females are more likely to consume more vegetables and healthier foods because they associate it with maintaining a healthy lifestyle. This can be seen in the response by Robyn from Westridge who stated that she enjoys eating vegetables and went on to explain that the older she has become the more she realizes the importance of consuming vegetables. However, she also stated that she is unable to purchase vegetables on a regular basis due to cost. Robyn stated that:


I'm not... not healthy because ... there's not every day to eat healthily. Maybe once in a week ..., but I like to eat healthily but vegetables are so expensive to buy like, to eat every day, what there is to eat, we must eat.

Robyn stated that she does not classify herself as a healthy eater because she feels she does not consume a sufficient amount of vegetables on a regular basis to be classified as a healthy eater. When looking at the comparison of food choice between males and females. It can be argued that in Mitchells Plain males do not share the same sentiments regarding food choice and healthy eating as females. This statement coincides with a study conducted in the United States, which showed that men do not share the same values as females in terms of their attitude towards the consumption of vegetables (Emanuel, et al., 2012). Women in Mitchells Plain described vegetable consumption as being an important component in maintaining a healthy lifestyle and maintaining a balanced diet. For example, Tasneem from Woodlands stated that “*No, I don't think it's [my diet is] healthy because umm if you—the healthy food is like if you eat like vegetables and that, most vegetables are healthy.*”

When looking solely at the consumption of meat, the majority of the respondents stated that they consume meat because they enjoy the taste of it as well that they understand the nutritional value of it. However, what is noticeable is that there is a higher consumption of chicken than red meat; this has been noted as being a result of the financial constraints associated with obtaining it. This

can especially be seen in Table 5.7 below, most females are responsible for shopping; therefore, they were able to provide more insight into why they prefer buying chicken opposed to meat.

Table 5.7: Responsibility for shopping

Responsibility for shopping	Males	Females	Total
Less than half	7,59%	6,90%	7%
Half	18%	14%	16%
Most	15,19%	24,90%	21%
All	20,89%	42,15%	34%
Total	100%	100%	100%

Source: Field Study, (2016).

Table 5.7 above, highlights the frequency of shopping done by males and females. As can be seen in Table 5.7 women are noted as being more active in terms of shopping within households. This results in them ultimately being responsible for food choice on a household level. When women were asked about what shapes their decision regarding food choice they responded by stating that not only is food choice determined by price but by the brand quality and familiarity with a particular brand. They stated that this played an important role in deciding what type of brand to purchase. However, the price also plays a huge role in determining what to purchase and in what quantity. According to Simone from Strandfontein:

I suppose it's more people's choice. Like some people, they can't afford to buy the brands so they have to go for [what they can afford] but I'm sure if they had a choice they would stick to the [brand] cause it tastes nice and you enjoy it better... I will normally just go and try it out first and I'm always like a very good judge of character. I always could look at a thing and I don't want to eat, like to me it just not going to taste right and then nine out of 10 times it is like that. I'm a picky person so I just don't give me anything to eat because I won't just eat.

Simone goes on to explain that in her household she is the one that is in charge of the foods and the brands that they eat in the household. This is a common response from females respondents as most of them stated that often when they are in the stores they are the ones that make the 'on the spot' choices, as there are times that the stores do not have the usual brands that they are

familiar with and they are then forced to buy another brand that will be equally liked and by their family. Moreover, female respondents also state that when they do send a mail to the store they often send them with a shopping list.

Therefore, women are noted as playing an important role in terms of the type of foods that individuals eat in the household as can been in the statement above made by Simone. This can be seen in the statement made by Simone from Strandfontein: “*Yes because my husband is diabetic so that is why we also started to become disciplined by you know eating in moderation and taking all the fats and stuff off.*” On a household level, women play an important role in terms of food choice because they often take into account the entire households wants and needs and try to satisfy everyone’s dietary needs and wants.

5.6.2. Age, gender and food choice

In literature, it is apparent that women are noted as being more receptive to the idea of including vegetables in their diets than males. Studies have highlighted that men prefer meat and foods that appear more ‘hearty’ compared too ‘green’ foods. Females are noted as enjoying a more ‘diverse’ diet with a preference for ‘greens’ compared to starchy and unhealthy looking foods. When looking at literature on food choice, gender, and age it becomes apparent that younger males tend to enjoy fast foods, and are the less inclined to consume healthy foods, especially large portions of vegetables and salads compared to young females. In Mitchells Plain a similar trend appears: younger male participants aged 18-25 stated that they enjoyed more fast foods and meat than healthy-looking foods, compared to young females. Younger females described enjoying a much more diverse diet because it is healthier. This can be seen in responses by Tasneem who, when asked what she considered as a healthy diet, stated that “*I like to eat my vegetables with my chicken; the – the umm, pumpkin and butternut, carrots, squash. That with the chicken and a little bit of rice*”.

Although the majority of male respondents have stated that they enjoy more meat than vegetables, older male respondents highlighted that due to their age and health conditions they are forced to include more vegetables in their diets. This can be seen in the case of Richard from Portlands who responded to the question regarding what type of eater he is. Richard stated: “*Yes I am both*”. Richard went on to explain that he consumes both meat and vegetables because he is

aware that both are healthy and are needed to maintain a healthy diet. He also stated that he enjoys eating more vegetables than meat because he knows that too much meat is not healthy for him due to his age. Richard stated that he does not enjoy consuming fatty and unhealthy foods and that is why he prefers a higher percentage of vegetables on his plate than meats. By contrast, Shafiek from Westridge stated that he enjoys eating both vegetables and meats but prefers eating more meat. Shafiek is a younger male respondent and went on to state that he prefers eating more junk food and meats because he enjoys the taste of it.

5.6.3. Frequency of meat and vegetable intake

When looking at the frequency of meat and vegetable consumption it becomes apparent that factors such as taste, finance, and lifestyle often shaped why they eat what they eat. Sharifa from Westridge stated that although she enjoys cooking food that includes vegetables the cost of getting fresh vegetables is expensive as she has to travel far in order to get to the bigger supermarket to get affordable fresh produce. Sharifa went on to explain that the produce sold at the local shops in Strandfontein is not the best grade and it is way too expensive. This has been a common response from the respondents, especially in the area of Strandfontein, as they do not have access to big supermarkets and feel that they are being overcharged at their local shops. Kelly from Westridge shared a similar response regarding the implication of cost on the frequency of vegetable consumption. Kelly stated that: "*Ohhh if I could eat it every day, you know if the money is there because it seems to be very expensive nowadays. So, if I could eat it every day I would have it every day. I eat it when I can.*" A similar response can be seen by Anthony who when asked what type of eater he is stated that he was a "budget eater", when probed further Anthony went on to elaborate that his budget control what he eats and that although he enjoys eating particular foods he is unable to buy them on a regular basis because often it is too expensive. Maryam from Portlands stated that:

I mean foods stuff in the shop it's expensive. I don't think people can eat that healthy anymore. ... To be like a healthy person it costs... it's not on not for the lower class people maybe the [rich] people that are there... they can stiff afford to eat things like that.

These findings resonate with a study conducted by Sedibe et al. (2014) highlights that the lack of consumption of healthy food was linked to price and accessibility.

The research conducted in Mitchells Plain highlighted that due to the inconsistency in terms of income individuals diets differed. Some of the individuals are faced with food insecurity due to lack of purchasing power. Fatima from Woodlands explains how and what shapes the food she eats, Fatima states that:at night umm as I told you sometimes then I make a pot of food. If there's not a pot of food then we go sleep on bread, tea and whatever there is to put on the bread". When probed further Fatima explained that:

"I would describe [my diet as being] unhealthy because there isn't always that, Uhm, Uhm, the money for buying, you see. What you actually need you wouldn't use the money for... there is only money for need [you] see what [I] mean [by] is that we can only buy what we can afford to buy, you see?

Nadine in Mitchells Plain who explains that her diet consists of:

dry nuts and the beans that I like, like my eggs, my fish, my meat and milk. I am not a lover for cheese but there will be cheese in the fridge, and I don't like umm, what is this now? The butter, the - and cream and them all, I think this is your basic [that should be] in your house.

When probed further it becomes apparent that Nadine is able to practice a diverse diet because she can afford to. Even though, the literature states that the majority of females prefer a higher consumption of vegetables, while males a higher consumption of meat/poultry meat than vegetables in their plate. Income plays a huge role in determining what individuals are able to eat.

Moreover what also became apparent is that family plays a role in terms what respondents enjoy eating eat this can be seen by Azizah from Westridge who expressed her love for vegetable food: ... you know I love tomato food, I love tomato food but I can't eat raw tomatoes." When Azizah was probed further regarding her love for vegetable food she explained that "We [family] were raised with-- with -- with vegetables food." She also stated that although she was raised with vegetable foods she enjoys eating vegetable food as well "I like it [vegetables]. There [look] I am making butternut food now". This resonates with literature which highlights the role of the

family. The family should be considered as an important factor when listing influences of food choice. The role family plays in terms of the type of food one consumes; literature highlights that individuals often make meals that they are familiar with. Therefore, it can be seen that amongst the respondents that have stated that they are responsible for food preparation have stated that they enjoy particular foods because they were raised eating those types of foods. This can be seen in a response by Jacky from Portlands who stated: “*...when we were growing up my parents gave us always [ate] veggies*”. This highlights that aside from factors such as economics, family plays a big role in terms of food choice as the majority of individuals that prepare the food, prepares food that they are familiar with.

5.6.4. The consumption of dairy products

Dairy products are known as being a source of multiple vitamins and nutrients for both adults and children. According to Lee and Cho (2017) dairy products are considered super-foods due to their nutritional value. Dairy products are a source of protein, potassium, calcium, fatty acids, and vitamin B and D. Lee and Cho (2017) goes on to explain that the consumption of dairy is important as it can be consumed to prevent cardiovascular disease, type 2 diabetes and low blood pressure. However, the consumption of excessive dairy intake can also lead to cholesterol because many of these products are high in saturated fats (United States Department of Agriculture, 2015). Moreover, according to the FAO (2018) the consumption of milk, yogurt and cheese has become an important component within individuals who follow a western diet. In other countries, dairy intake was not that high, such as in Asian countries. The consumption of dairy products is low due to the type of diet that they follow (Won lee and Cho, 2017).

When looking at the consumption of dairy products in Mitchells Plain, the majority of respondents noted that they have milk as part of their breakfast. The majority of females stated that they have milk on their tea. Nadine in Mitchells Plain said that “[*The] first thing in the morning I wake up, [I] make a cup of coffee [with milk]*”. This is usually added with their cereal or in a cup of coffee or tea. Male respondents noted that they consume more coffee than tea as part of their breakfast, while the majority of women stated that they prefer drinking tea compared to coffee. The big difference in the consumption of tea and coffee was the sugar intake. Females

stated that they take 1 to 2 teaspoons of sugar whilst the average sugar intake for males was 3 teaspoons.

When looking at yogurt intake, females have shown a liking to yogurt, especially those who have children, as they stated that consuming yogurt products provides them and their children or grandchildren with the sufficient vitamins and calcium which is good for bones and will reduce the risk of osteoporosis. This is supported by literature which highlights the positive effects of dairy consumption. The majority of women have also noted that yogurt acts as a good and healthy substitute especially when they are on the go or as a snack at work and it acts as a healthy snack for their children. Men, on the other hand, listed that they enjoy eating it but would not go out of their way to purchase it. If it is found in the household they would eat it. However, both males and females who had consumed yogurt products from a young age often enjoy it in their adulthood and are more inclined to purchase it as adults compared to those who did not eat it on a regular basis in their youth. This is also partially related to the fact that yogurt products are not seen as a necessity and is often viewed as being expensive. Although, most of the respondents noted that even though they enjoy eating yogurt it is an expensive product. They are only able to consume it when they have extra cash.

When looking at cheese intake within the area it had become apparent that this is considered a common lunchtime meal. A sandwich, according to most of the respondents, is a quick and easy meal to make. When asked about what they put on the sandwiches the majority of the respondent answered cheese, polonies (processed meat) or peanut butter or jam. This all depends on what the respondent likes or dislikes. What became noticeable was the income variable. A ‘basic’ sandwich for some was bread peanut butter and butter; for others, it was cheese or polony, lettuce, and cucumber. This can be seen in the case of Shafiek from Westridge who explained what he would put on his regular sandwich: “*Okay it will be bread, with mayo, maybe cheese or polony and lettuce*”. As can be seen in the response from Shafiek in his description of his sandwich he has a variety on his sandwich.

5.7. Perceived determinants of food choice

In terms of understanding the difference between food choice and gender in Mitchells Plain, the data collected highlighted two dominant factors that shape the types that they are able to

consume. The most prominent factor in terms of wanting to live and practice a healthy lifestyle is related to one's economic status. When looking at the general income bracket for the majority of the individuals who work in Mitchells Plain the income distribution is not equal as some individual's income ranged from R500-R4000 where some individuals were dependent solely on monthly social grants. When looking at income in relation to expenses one can come to a general consensus that the income range amongst Mitchell Plain respondents does not allow for a substantial amount for purchasing food.

Table 5.8: Perceived barriers to eating healthy

Barriers to eating healthy	Males	Females	Overall impact
Lack of income	38.68%	35.00%	36.47%
Healthy food is expensive	26.42%	36.25%	32.33%
Time constraints	3.77%	5.63%	4.89%
Personal bad habits	9.43%	6.25%	7.52%
Eating outside the home	2.83%	1.88%	2.26%
No reason	3.77%	1.88%	2.63%
Unavailability of produce	100.00%	0.00%	1.13%
Health reasons	7.55%	8.75%	8.27%
Unemployment	0.94%	3.75%	2.63%
Doesn't cook	3.77%	0.63%	1.88%
Total	100.00%	100.00%	100.00%

Source: Field Study, (2016).

Therefore, what becomes apparent whilst conducting the interviews is that there is not a big difference in terms of food consumption between the genders because a big determining factor in terms of food choice if that of finances. Although, individuals would like to eat differently because they have different preferences they cannot due to their circumstances as it does not allow for it. This can be seen in a response by Catherine from Westridge who was asked a question regarding brand choice. Catherine stated that: "*No, no, no, it's too expensive. If I must choose ... then I will buy it [known brands] but it's too expensive*" The response from Catherine highlights the fact that individuals are restricted by their income and in some case their location, it was noted by multiple respondents as preventing them to eat a variety of foods. Price plays a huge role in term of what one is able to eat. When interviewees were asked about what type of

brands they eat respondents noted that they purchase what is available. This making the difference between gender and food choice minimal as individuals are unable to eat what they really enjoy. Moreover, they are constantly having to compromise and purchase only what they can afford.

5.7.1. The age of the fat-free, gluten-free products

The introduction of low-fat, fat-free dairy products has provided consumers with various options in terms of dairy products. However with the rise of gluten-free, organic products consumers are often left with feeling confused and overwhelmed when trying to purchase products majority of the time those who are adequately informed are able to pop in stores and purchase what they need and move to the next aisle. However, the consumer that is not up-to-date with the latest health trends and practices this can be a daunting task. In the area of Mitchells Plain, the average consumer has limited purchasing power which results in the choice not always being determined on what the best product or the healthiest choice is, but rather what is ‘value for money’. When respondents were asked about what they would like to eat and drink a common answer would be ‘*we eat what there is*’. This being self-explanatory, adults in the area of Mitchells Plain are faced with making choices about foods to eat and often ‘sigh’ when asked about how they make this food choice. This is because their choice is completely driven by ‘*what is available*’ and ‘*at the right price*’. To desire a food item is a norm as we are human and we see and want to experience different cuisines, but to be able to successfully satisfy this desire is the constant struggle for these individuals as they do not have the financial capability to do so. Not only do they have the inability to always purchase what they desire they are even forced to compromise on the foods that they enjoy.

5.7.2. Distance travelled to purchase foods

Location, according to the majority of the respondents, acts as a barrier in terms of getting affordable and good foods. The distance between shops and residential areas often led to respondents eating what was stocked locally. This is due to the fact that traveling to bigger supermarkets cost respondents more as well as they don’t always have enough time to travel. When looking at the design of the area of Mitchells Plain, it is apparent that not all the areas are

situated close to supermarkets; rather, they are surrounded by smaller shops that stock products that might not always be the cheapest or the freshest. This then results in respondents having to purchase what is available rather than what they would prefer. This can be seen in a response by Erica from Strandfontein who stated that “*Yeah, no my daughter takes me once a month to do my shopping because this here is convenient shops it’s very pricey and we haven’t got supermarkets*”. Due to the cost implications of buying from smaller shops, respondents also noted that they do not get as many foods for their money, than if they had to purchase from bigger supermarkets. Moreover, they also noted that they are not offered a variety of foods. Due to these reasons, they are not able to always purchase the healthiest foods.

Battersby (2011) explains that one’s food environment plays a crucial role in terms of explaining what foods are available for individuals to consume. Therefore food choice is driven by the environment and in conjunction with Socio-Economic Status (SES) within the community. In Mitchells Plain there are multiple different SES groups, this has resulted in a difference in terms of household income. As can be seen in Table 5.2 the majority of the individuals staying in Mitchells Plain earn between the brackets of R500- R8000. Furthermore, Table 5.2 shows that there is a high rate of unemployment in the area; this resulted in a few households being completely dependent on the income of the breadwinner. This resonates with literature which shows that food cost is a barrier for low-income families to healthier food choice (Lo *et al.*, 2009). Perfecting a balanced diet requires an individual to consume foods from multiple food groups. In Mitchell's Plain majority of the respondents survive of a limited income and maintaining a balanced diet is not always possible. This was easily seen when respondents were asked about the foods “they eat” and “why they eat those types of foods”.

5.8. Summary of chapter

This chapter provided analyses of food choice amongst the adult population in Mitchells Plain. It also provided important information about the impact of particular factors that have shaped the type of food that is consumed. Although the quantitative information showed that there was no significant difference in terms of food intake and gender, it did highlight the possible reasons contributing to this. Although, the majority of the literature states that there is a difference between food choice and gender, this study showed that due to the geographical location and

income levels, participants are unable to purchase. The qualitative information also shows that there is no difference in terms of gender and food choice, but rather between the foods they ‘would like to eat’ and not ‘what they are able to eat’. However, the data highlights that people tend to consume particular foods that are easily accessible and foods that suit their lifestyle needs. This can be seen in the case of respondents who, for example, go to the gym and who need to consume meals that are high in protein or foods that will not affect one's cholesterol or diabetes. In Mitchells Plain, food choice is mainly determined by the financial state of the individual and location. This then makes the diversity amongst the genders not significant because the majority of the respondents within the area earns a similar income and has reported the same barriers and determinants of food choice within the community.



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CHAPTER 6: RESEARCH FINDINGS, RECOMMENDATIONS, AND CONCLUSION

6. Introduction

The aim of this research is to explore food choices amongst adults in the area of Mitchells Plain with a special focus on the gender dynamic it used the data collected from the empirical data collected from *The Food choice and Body mass (BMI) in Adults and children: Evidence from the national income dynamics study (NIDS) and empirical research from Khayelitsha and Mitchells Plain in South Africa*, research project (Dinbabo et al., 2016). This thesis focused primarily on Adults aged 18 and older in the area of Mitchells Plain. Within the scope of the study, the research highlighted that there are particular foods that are consumed between males and females in Mitchells Plain in South Africa; as well as the determinants of this food choice. The thesis highlighted that factors such as income, distance, preference, and social and cultural factors played a big role in shaping the types of foods individuals are both exposed too and able to consume.

6.1. Research findings

The thesis begins by highlighting the types of foods that were consumed in the area of Mitchells Plain; it does this by grouping foods into particular food groups namely carbohydrates, meat, vegetables and fruits, dairy products, spices, and beverages. The thesis then goes on to explore the difference between food choices amongst adults in Mitchells Plain? And what are the determinants of food choice amongst males and females in Mitchells Plain?

6.1.1. Food choice in Mitchells Plain

This thesis highlights that 97.45% of the respondents noted that they eat foods belonging to the carbohydrates food group. This is partially due to the fact that the type of foods belonging to this food group includes foods from a range of healthy products such as fruits and vegetables to unhealthy foods such as pastries, white bread, and sweetened goods. The second highest food group consumed is Meat: 64.28% of the respondents stated that they consume meat products

such as red meat, chicken, sausage and processed meats. This highlighting that the remaining 35.72% eats foods that exclude meat products. The literature highlights that dietary constraint which is often enforced by cultural or religious specifications can act a contributing factor in terms of food choice. Furthermore, approximately 50% of respondents stated that they eat spices and beverages; this is due to the fact that spices are used in food preparation. When looking at the consumption of fruits and vegetables, 33.29% of the respondents stated that they consume vegetables whilst only 13.12% of the respondents stated that they eat fruits. This is also due to the cost associated with obtaining good quality fruits and vegetables in Mitchells Plain. A further 19.2% of the respondents stated that they consume foods belonging to the dairy products food group.

6.2. Food choice and Gender

Women in Mitchells Plain consume a higher percentage of food across all food groups compared to that of males. This can be argued to be a result of females practicing a much more diverse diet than males. This statement is consistent with the literature, which highlights that women, in general, consume a much more diverse diet than males (Arganini et al., 2012). Research goes on to explain that women's food choice is predominantly driven by maintaining a healthy lifestyle, and due to the fact that would like to maintain a good looking physique. As well as the fact that women are less skeptical about nutritional information compared to male. Therefore, females are more inclined to attempt to practice a much more diverse lifestyle than males.

6.2.1. Vegetable vs. meat intake

When individuals were asked about food preference the majority of the females stated that they preferred having a higher percentage of vegetables than meat in their diets. This is consistent with literature that shows that females prefer a higher ratio of vegetables on their plate than meat (Beardsworth et al., 2002) When male respondents were asked about their favourite foods, most stated that they preferred eating both meat and vegetables, but with a higher percentage of meat on their plates than vegetables.

6.2.2. Age, gender and food choice

Literature shows that women are noted as being more receptive to the idea of including vegetables in their diets than males. Studies have highlighted that men prefer meat and foods that appear more ‘hearty’ compared too ‘green’ foods. Females are noted as enjoying a more ‘diverse’ diet with a preference for ‘greens’ compared to starchy and unhealthy looking foods. When looking at literature on food choice, gender, and age it becomes apparent that younger males tend to enjoy fast foods, and are the less inclined to consume healthy foods, especially large portions of vegetables and salads compared to young females. In Mitchells Plain a similar trend appears: younger male participants aged 18-25 stated that they enjoyed more fast foods and meat than healthy-looking foods, compared to young females. Although the majority of male respondents have stated that they enjoy more meat than vegetables, older male respondents highlighted that due to their age and health conditions they are forced to include more vegetables in their diets.

6.2.3. Frequency of meat and vegetable intake

The data highlighted that factors such as taste, finance, and lifestyle often shaped why they eat what they eat. These findings resonate with a study conducted by Sedibe et al. (2014) highlights that the lack of consumption of healthy food was linked to price and accessibility. The research conducted in Mitchells Plain highlighted that due to the inconsistency in terms of income individuals diets differed. Some of the individuals are faced with food insecurity due to lack of purchasing power.

6.2.4. The consumption of dairy products

When looking at the consumption of dairy products in Mitchells Plain, the majority of respondents noted that they have milk as part of their breakfast. The majority of females stated that they have milk on their tea. Male respondents noted that they consume more coffee than tea as part of their breakfast, while the majority of women stated that they prefer drinking tea compared to coffee. The big difference in the consumption of tea and coffee was the sugar intake. Females stated that they take 1-2 teaspoons of sugar whilst the average sugar intake for

males was 3 teaspoons. When looking at yogurt intake, females have shown a liking to yogurt, especially those who have children, as they stated that consuming yogurt products provides them and their children or grandchildren with the sufficient vitamins and calcium which is good for bones and will reduce the risk of osteoporosis. Men, on the other hand, listed that they enjoy eating it but would not go out of their way to purchase it. In terms of cheese intake within the area, it had become apparent that this is considered a common lunchtime meal. A sandwich, according to most of the respondents, is a quick and easy meal to make.

6.3. Perceived determinants of food choice

The most prominent factor in terms of wanting to live and practice a healthy lifestyle is related to one's economic status. When looking at the general income bracket for the majority of the individuals who work in Mitchells Plain the income distribution is not equal as some individual's income ranged from R500-R4000 where some individuals were dependent solely on monthly social grants. Therefore, what becomes apparent whilst conducting the interviews is that there is not a big difference in terms of food consumption between the genders because a big determining factor in terms of food choice is that of finances. Although, individuals would like to eat differently because they have different preferences they cannot due to their circumstances as it does not allow for it.

6.3.1. The age of fat-free, gluten-free products

Due to the rise of gluten-free, organic products consumers are often left with feeling confused and overwhelmed when trying to purchase products majority of the time those who are adequately informed are able to pop in stores and purchase what they need and move to the next aisle. However, the consumer that is not up-to-date with the latest health trends and practices this can be a daunting task. In the area of Mitchells Plain, the average consumer has limited purchasing power which results in the choice not always being determined on what the best product or the healthiest choice is, but rather what is 'value for money'. When respondents were asked about what they would like to eat and drink a common answer would be '*we eat what there is'*'

6.3.2. Distance travelled to purchase foods

Location, according to the majority of the respondents, acts as a barrier in terms of getting affordable and good foods. The distance between shops and residential areas often led to respondents eating what was stocked locally. This is due to the fact that traveling to bigger supermarkets cost respondents more as well as they don't always have enough time to travel. When looking at the design of the area of Mitchells Plain, it is apparent that not all the areas are situated close to supermarkets; rather, they are surrounded by smaller shops that stock products that might not always be the cheapest or the freshest. This then results in respondents having to purchase what is available rather than what they would prefer.

6.4. Recommendations

Literature highlights that promoting a healthy lifestyle and healthy diets is a key component in terms of controlling and preventing overweight and obesity. Moreover, it can reduce the risk of NCDs such as diabetes, high blood pressure, and cholesterol. Although, these diseases are often genetic, controlling one's food intake helps reduce the early development of it and can help reduce the contraction of additional disease. Based on the above findings, the followings recommendations are proffered.

- **Affordability:** lack of purchasing power is often a direct result in terms of restricting one's food choice. Therefore, it is recommended that initiatives and strategies be put in place to allow individuals from poor income communities to be able to access affordable and nutritious foods.
- **Nutrition education:** Knowing what one is consuming and understanding the nutritional value is two completely different factors. The one refers to merely just understanding the face value of the food item being consumed whilst the other refers to understanding why it is important to consuming the particular food item. Moreover, there is a growing need to bridge the gap in terms of nutrition and food knowledge across both genders and age groups. Therefore, it is recommended that educational initiatives be put in place to help better educate the community about the nutritional importance of particular food and the health benefits resulting from the consumption of it.

- **Further research:** Research regarding food choice has been covered globally, however, research incorporating the gender dynamic in relation to understanding food choice remains limited. The few research surrounding food choice and gender is predominantly conducted in high-income countries which makes it difficult to use as a comparison for low to middle-income countries. Therefore, it is recommended that additional research be conducted that explores food choice from a gendered perspective.

6.5. Conclusion

This thesis showed that in terms of the quantitative data amongst the sampled population in Mitchells Plain, there was no significant difference in terms of food intake and gender. However, it did highlight the possible reasons contributing to this. This included factors such as; lack of income, geographic location, and time constraints. The qualitative information also highlighted that there is no difference in terms of gender and food choice in Mitchells Plain. However, the data highlights that people tend to consume particular foods that are easily accessible and foods that suit their lifestyle needs. This can be seen in the case of respondents who, for example, go to the gym and who need to consume meals that are high in protein or foods that will not affect one's cholesterol or diabetes. In Mitchells Plain, food choice is predominantly determined by the financial state of the individual and location. This then makes the diversity amongst the genders not significant because the majority of the respondents within the area earns a similar income and has reported the same barriers and determinants of food choice within the community.

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Appendices

CHI 2 analyses

```
. tab CarbohydrateIntake Gender, cchi2 chi2
```

Key
frequency
chi2 contribution

CarbohydrateIntake	Gender to household member			Total
	Male	Female		
0	10	6		16
	1.4	1.1		2.5
1	282	383		665
	0.0	0.0		0.1
Total	292	389		681
	1.5	1.1		2.6

Pearson chi2(1) = 2.5757 Pr = 0.109

```
. tab VegetableIntake Gender, cchi2 chi2
```

Key
frequency
chi2 contribution

VegetableIntake	Gender to household member			Total
	Male	Female		
0	172	185		357
	2.3	1.8		4.1
1	120	204		324
	2.6	1.9		4.5
Total	292	389		681
	4.9	3.7		8.6

Pearson chi2(1) = 8.6094 Pr = 0.003

```
. tab MeatIntake Gender, cchi2 chi2
```

Key
frequency
chi2 contribution

MeatIntake	Gender to household member		Total
	Male	Female	
0	110 0.1	141 0.0	251 0.1
1	182 0.0	248 0.0	430 0.1
Total	292 0.1	389 0.1	681 0.1

Pearson chi2(1) = 0.1454 Pr = 0.703

```
. tab Milk_MilkproductIntake Gender, cchi2 chi2
```

Key
frequency
chi2 contribution

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Milk_MilkproductIntake	Gender to household member		Total
	Male	Female	
0	238 0.0	312 0.0	550 0.0
1	54 0.1	77 0.1	131 0.1
Total	292 0.1	389 0.1	681 0.2

Pearson chi2(1) = 0.1818 Pr = 0.670

```

Pearson chi2(1) = 0.1178 Pr = 0.731

. tab SweetIntake Gender, cchi2 chi2

```

Key
frequency
chi2 contribution

SweetIntak e	Gender to household member			Total
	Male	Female		
0	196 0.2	274 0.1		470 0.3
1	96 0.3	115 0.3		211 0.6
Total	292 0.5	389 0.4		681 0.9

Pearson chi2(1) = 0.8565 Pr = 0.355

```
. tab FruitIntake Gender, cchi2 chi2
```

Key
frequency
chi2 contribution

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FruitIntak e	Gender to household member			Total
	Male	Female		
0	253 0.1	347 0.1		600 0.1
1	39 0.5	42 0.4		81 0.9
Total	292 0.6	389 0.4		681 1.0

Pearson chi2(1) = 1.0425 Pr = 0.307

```
. tab Legumes_Nuts_SeedsIntake Gender, cchi2 chi2
```

Key
frequency chi2 contribution

Legumes_Nu ts_SeedsIn take	Gender to household member			Total
	Male	Female		
0	262 0.2	331 0.2		593 0.4
1	30 1.6	58 1.2		88 2.8
Total	292 1.8	389 1.4		681 3.2

Pearson chi2(1) = 3.1860 Pr = 0.074

```
. tab Egg Gender, cchi2 chi2
```

Key
frequency chi2 contribution

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Egg	Gender to household member			Total
	Male	Female		
0	247 0.0	324 0.0		571 0.0
1	45 0.1	65 0.1		110 0.2
Total	292 0.1	389 0.1		681 0.2

Pearson chi2(1) = 0.2077 Pr = 0.649

Employment status in Mitchells Plain

. tab Employment Gender

Employment status	Gender to household member		Total
	Male	Female	
Not Applicable	0	1	1
Refused	0	1	1
Employed for wages/sa	85	76	161
Self-employed	23	17	40
Out of work and looki	16	28	44
A student	5	8	13
Retired	49	73	122
Unemployed	54	118	172
Other (specify)	0	2	2
Total	232	324	556



Food intake by Gender

. tab CarbohydrateIntake Gender

CarbohydrateIntake	Gender to household member		Total
	Male	Female	
0	10	6	16
1	282	383	665
Total	292	389	681

. tab VegetableIntake Gender

VegetableIntake	Gender to household member		Total
	Male	Female	
0	172	185	357
1	120	204	324
Total	292	389	681

```
. tab MeatIntake Gender
```

MeatIntake	Gender to household member		
	Male	Female	Total
0	110	141	251
1	182	248	430
Total	292	389	681

```
. tab Milk_MilkproductIntake Gender
```

Milk_MilkproductIntake	Gender to household member		
	Male	Female	Total
0	238	312	550
1	54	77	131
Total	292	389	681

```
. tab Spice_BevIntake Gender
```

Spice_BevIntake	Gender to household member		
	Male	Female	Total
0	147	201	348
1	145	188	333
Total	292	389	681

```
. tab SweetIntake Gender
```

SweetIntake	Gender to household member		
	Male	Female	Total
0	196	274	470
1	96	115	211
Total	292	389	681

. tab FruitIntake Gender

FruitIntake	Gender to household member			Total
	Male	Female		
0	253	347		600
1	39	42		81
Total	292	389		681

. tab Legumes_Nuts_SeedsIntake Gender

Legumes_Nuts_SeedsIntake	Gender to household member			Total
	Male	Female		
0	262	331		593
1	30	58		88
Total	292	389		681



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Barriers for eating healthy

. tab Reasonsnohealthy Gender, row col

Key
frequency
row percentage
column percentage

Reasons for wanting to eat healthily	Gender to household member			Total
	Male	Female		
Lack of income	41	56		97
	42.27	57.73		100.00
	38.68	35.00		36.47
Healthy food is expen	28	58		86
	32.56	67.44		100.00
	26.42	36.25		32.33
Time constraint	4	9		13
	30.77	69.23		100.00
	3.77	5.63		4.89
Personal bad habit	10	10		20
	50.00	50.00		100.00
	9.43	6.25		7.52
Eating outside home	3	3		6
	50.00	50.00		100.00
	2.83	1.88		2.26
No reason	4	3		7
	57.14	42.86		100.00
	3.77	1.88		2.63
Unavailability of the	3	0		3
	100.00	0.00		100.00
	2.83	0.00		1.13
Health reasons	8	14		22
	36.36	63.64		100.00
	7.55	8.75		8.27
Unemployment	1	6		7
	14.29	85.71		100.00
	0.94	3.75		2.63
Doesn't Cook	4	1		5
	80.00	20.00		100.00
	3.77	0.63		1.88
Total	106	160		266
	39.85	60.15		100.00
	100.00	100.00		100.00

. tab Mealspreparation Gender

Responsibility in meal Preparation	Gender to household member		
	Male	Female	Total
Refused	0	1	1
None	95	33	128
Less than half	23	23	46
Half	27	34	61
Most	14	55	69
All	33	153	186
11	1	0	1
Total	193	299	492

. tab Mealsplanning Gender

Responsibility in meal Planning	Gender to household member		
	Male	Female	Total
Refused	0	1	1
None	95	35	130
Less than half	28	18	46
Half	26	39	65
Most	12	59	71
All	33	149	182
11	1	0	1
Total	195	301	496

. tab Foodshopping Gender

Responsibility in shopping	Gender to household member		
	Male	Female	Total
Refused	0	1	1
None	76	35	111
Less than half	17	27	44
Half	35	41	76
Most	29	69	98
All	38	126	164
55	0	1	1
Total	195	300	495

Food intake in Mitchells Plain

. tab CarbohydrateIntake

Carbohydrat eIntake	Freq.	Percent	Cum.
0	18	2.22	2.22
1	794	97.78	100.00
Total	812	100.00	

. tab VegetableIntake

VegetableIn take	Freq.	Percent	Cum.
0	441	54.31	54.31
1	371	45.69	100.00
Total	812	100.00	

. tab MeatIntake

MeatIntake	Freq.	Percent	Cum.
0	291	35.84	35.84
1	521	64.16	100.00
Total	812	100.00	

. tab Milk_MilkproductIntake

Milk_Milkpr oductIntake	Freq.	Percent	Cum.
0	661	81.40	81.40
1	151	18.60	100.00
Total	812	100.00	

. tab SweetIntake

SweetIntake	Freq.	Percent	Cum.
0	537	66.13	66.13
1	275	33.87	100.00
Total	812	100.00	

. tab FruitIntake

FruitIntake	Freq.	Percent	Cum.
0	704	86.70	86.70
1	108	13.30	100.00
Total	812	100.00	

. tab Spice_BevIntake

Spice_BevIn take	Freq.	Percent	Cum.
0	414	50.99	50.99
1	398	49.01	100.00
Total	812	100.00	

. tab Legumes_Nuts_SeedsIntake

Legumes_Nut s_SeedsInta ke	Freq.	Percent	Cum.
0	711	87.56	87.56
1	101	12.44	100.00
Total	812	100.00	

. tab Egg

Egg	Freq.	Percent	Cum.
0	675	83.13	83.13
1	137	16.87	100.00
Total	812	100.00	