

FAT TAX AND FOOD CONSUMPTION

by

DOMINIC LEBOHANG STOROM

Student number: 26336848

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Supervisor:

Mrs H Du Preez

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ABSTRACT

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by

DOMINIC LEBOHANG STOROM

STUDY LEADER: MRS H DU PREEZ
DEPARTMENT: TAXATION
DEGREE: MASTER COMERCII

The concept of a fat tax is a heavily debated topic around the world (given increasing levels of obesity and overweight) as a measure to be used by legislators to control the consumption of food items that are seen to cause obesity and overweight. The purpose of a fat tax can be likened to that of a sin tax (used to control consumption of products seen as vices to society).

Little research has been carried out on fat tax in South Africa as the debate surrounding the levels of obesity has only been initiated on a national level in recent years. However, given the significant threat which high levels of obesity and overweight pose to South Africans (the fourth fattest nation in the world), the viability of any measure that would curb the consumption of unhealthy foods by South Africans should be investigated.

The purpose of this study is to determine whether the introduction of a fat tax would affect consumer consumption habits by deterring consumers from purchasing unhealthy foods and in this way begin to lower the levels of obesity observed in the country.

This study consists of a review of various literature in favour of, and against the implementation of sin and fat taxes, a detailed investigation into the effect of the levying of sin taxes by the South African Minister of Finance on tobacco and alcohol consumption and a survey researching the possible impact that an implemented fat tax would have on consumer consumption patterns in South Africa.

Key words:

Fat Tax

Obesity/Overweight

Sin taxes

Unhealthy food

South Africa

OPSOMMING

VETBELASTING EN VOEDSELVERBRUIK

by

DOMINIC LEBOHANG STOROM

STUDIE LEIER: MRS H DU PREEZ
DEPARTEMENT: BELASTING
GRAAD: MAGISTER COMERCII

Die begrip “vetbelasting” as ‘n metode wat aangewend kan word deur wetgewers, om die verbruik van voedselsoorte wat tot vetsugheid en oorgewig aanleiding kan gee, te beperk, is vandag wêreldwyd ‘n ernstige punt van bespreking. Die doel van ‘n vetbelasting kan vergelyk word met sondebelasting wat aangewend word om die verbruik van produkte wat as ‘n euwel deur die gemeenskap beskou word, aan bande te lê.

Uiters beperkte navorsing oor vetbelasting is in Suid-Afrika onderneem aangesien die debat rondom die vlakke van vetsugheid in die land redelik onlangs eers op nasionale vlak aandag geniet. Gegewe die ernstige bedreiging wat hoë vlakke van vetsugheid egter vir Suid-Afrika (die vierde vetste nasie in die wêreld) inhou, is dit noodsaaklik dat enige metode wat aangewend kan word om die gebruik van ongesonde voedselsoorte te beperk deeglik ondersoek moet word. Die doel van hierdie studie is om vas te stel of die instelling van ‘n vetbelasting suksesvol sal wees om verbruikerspatrone sodanig te verander dat verbruikers weerhou sal word om ongesonde kosse te eet en sodoende die vlakke van vetsugheid in die land te verlaag.

Die studie bevat ‘n oorsig van die literatuur wat beide ten gunste van, en teen die instelling van ‘n vetbelasting is, ‘n gedetailleerde ontleding van die effek van die instelling van sondebelastings deur die Minister van Finansies op die verbruik van tabak en alkohol asook ‘n navorsingsoorsig van die moontlike invloed wat die instelling van ‘n vetbelasting op verbruikerspatrone in Suid-Afrika mag hê.

Sleutelwoorde:

Vetbalasting

Vetsug/oorgewig

Sondebelasting

Ongesonde kos

Suid-Afrika

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Obesity is fast becoming a significant issue of concern for governments worldwide with the United Nations (UN) citing obesity as the fifth leading cause of death in the world in the year 2008 (WHO, 2012b). Furthermore, the World Health Organisation (WHO) indicated that in the year 2008 an estimated 1.5 billion adults above the age of 20 were overweight and of the overweight adults, over 200 million men and nearly 300 million women were obese. The increased prevalence of obesity is not only confined to adults. The WHO identified childhood obesity as increasingly prevalent with an estimated 43 million children under the age of five being overweight or obese according to a study carried out in 2011 (WHO, 2012b).

The statistics surrounding the increased levels of obesity and overweight citizens in the member nations of the UN is of such grave concern that the UN has labelled the phenomenon an epidemic (WHO, 2012b).

Obesity is a condition that occurs when a person consumes more energy (in the form of food) than their bodies can expend (WHO, 2012b). This leads to the body storing unused energy in fat cells and, therefore, the affected person's body mass is increased by fat. Obesity and overweight in persons affected by the condition can be caused by various factors.

These factors have been studied by numerous researchers over the years and have been attributed to a number of issues. According to Goedecke, Jennings and Lambert (2006), '...genetics, early life influences, dietary intake, level of physical activity, socio-cultural factors, education, stress and parity are the underlying mechanisms and most important determinants (factors) of obesity and overweight'. The British National Health Service (NHS) which functions as the leading health authority in the United Kingdom, has highlighted the leading causes of obesity. The NHS has attributed obesity to the following

factors: lifestyle choices (eating habits), lack of physical activity, genes and other medical conditions (NHS Choices, 2010a).

Body mass index (BMI) is a measure used to quantify whether a said person is underweight, weighs a normal weight or is overweight or obese. The Centres for Disease Control and Prevention in the United States of America (USA) define overweight as a BMI of 25 or more and obesity as a BMI which exceeds 30 (Centres for Disease Control and Prevention, 2011 (b)).

The UN and governments across the world have become aware of the significance of obesity due to its effects on the citizens of particular countries. The UN points out that ultimately, obese persons become a burden to the national health budgets as these citizens cause significant strain on the state's health systems. Furthermore, the risk factor in respect of the following non-communicable diseases is increased with an increased BMI in adults: cardiovascular diseases (mainly stroke and heart disease); diabetes; sleep apnoea and respiratory problems; musculoskeletal disorders (especially osteoarthritis – a highly disabling degenerative disease of the joints) and some cancers (endometrial, breast and colon) (WHO, 2012 b).

Overweight and obesity also have a significant and adverse effect on children who suffer from the condition. Childhood obesity is associated with a higher chance of: adult obesity (which will lead to the adult suffering from the diseases mentioned above); premature death; disability in adulthood; breathing difficulties; increased risk of fractures; hypertension; insulin resistance and adverse psychological effects (WHO, 2012 b).

The World Health Assembly adopted the *WHO Global Strategy on Diet, Physical Activity and Health* resolution in 2004 (WHO, 2012c). The document describes the actions needed to support healthy diets and regular physical activity. The strategy calls upon all stakeholders to take action at global, regional and local levels to improve diets and physical activity patterns at the population level.

Due to the abovementioned resolution adopted by WHO, governments across the world are discussing the possible measures to improve the diets of individual members of the

population. The following governments are in the process of discussing, or have already implemented certain measures to reduce the obesity levels in their countries.

- The United Kingdom (UK) is considering levying a fat tax, following the example of the Danish government, on foods containing more than 2.3% saturated fat as a means of minimising the huge rising danger to health and financial cost to its health service caused by obesity (Campbell, 2011).
- The government of France legislated a form of 'fat tax' on the purchase of all sugary drinks in the country in a bid to combat increasing levels of child obesity and to increase the state coffers (Watson, 2011).
- The government of Denmark has implemented a fat tax on all food produce high in saturated fats and sugars. The Danish tax will be levied on all foods which contain more than 2.3% saturated fat including butter, milk, oils, meats and pre-cooked foods, such as pizzas (Leger, 2011).
- The government of Hungary introduced a fat tax in the last quarter of 2011. The aim of the fat tax was to curb the increasing levels of obesity. The tax will be levied on food high in saturated fats, sodas and alcohol (Hungary had not previously levied a tax on alcohol) (Thompson, 2011).

The levels of obesity in South Africa exceed the obesity levels in some of those countries listed above which have introduced fat tax in an attempt to control the levels of obesity and overweight.

A study regarding chronic diseases in South Africa between 1995 and 2005 found that 29% of men and 56% of women in South Africa were obese at the time the study was carried out (Goedecke, et al. 2006). This exceeds the 33.8% level of obesity observed in the USA and 24.5% levels observed in the UK. The levels of obesity in South Africa far exceeded the levels recorded in Denmark (11.4%), France (11.1%) and Hungary (18.8%) (Leger, 2011; Thompson, 2011; Watson 2011) – All of which have introduced a 'fat tax'. The study undertaken by Goedecke, et al. (2006) highlights the significance of the obesity epidemic in South Africa amongst both adults and children.

Given the increasing levels of obesity and overweight coupled with the ever increasing cost of the diseases on the national budget, is it worth questioning whether the government of South Africa should consider a fat tax in an attempt to decrease the impact of obesity and overweight on the population in view of the resolution on physical activity and health as adopted by WHO (WHO, 2012c)?

A fat tax has the same characteristics as a sin tax (also known as excise duties and levies) as the tax has been designed to deter consumers from the consumption of a vice product (harmful to society). The idea of a fat tax involves levying a tax on food products deemed to be possibly harmful (due to fat content) whilst a sin tax is levied on a product that the government wants the population to consume less of, by making it more expensive.

The primary reason for the levying of excise duties is to ensure that the state has a steady, constant and collectible source of revenue and, secondly, to influence consumer behaviour (South African Revenue Service, 2012). According to the South African Revenue Service, the excise duties are manipulated to discourage the consumption of products harmful to human health (e.g. tobacco).

As the substance and intention of a fat tax is similar to that of a sin tax, the effects or results of the implementation of sin taxes will need to be taken into account in the deliberations surrounding the possible implementation of a fat tax.

1.2 PROBLEM STATEMENT

Some of the factors that lead to increased risk of obesity have been identified by Goedecke, et al. (2006) as genetics, early life influences, dietary intake, and level of physical activity, socio-cultural factors, education, stress and parity. Given the number of factors that increase the likelihood of becoming obese, there is not one sound answer as to how to decrease levels of obesity and overweight in South Africa.

According to information obtained from the NHS Choices (2010b), the best way to treat obesity is to reduce the number of calories in a diet and to increase exercise. Another leading world authority on health-related issues has found that obesity and overweight can

be reduced by limiting energy intake from total fats, increased consumption of fruit and vegetables, limiting the intake of sugars, and engaging in regular physical activity (WHO, 2011 (c)).

The Directorate of Chronic Diseases, Disabilities and Geriatrics was established by the South African Department of Health in 1996 according to Goedecke, et al. (2006). The South African government established guidelines for the prevention and management of diabetes, hypertension, hyperlipidemia and overweight along with a national food-based dietary guideline. Furthermore, the government has launched an inter-sectoral strategy aimed at the promotion of healthy lifestyles and a change from risky behaviours among the youth. The government's plan to tackle obesity and overweight involves an educational approach to the problem. The strategy seeks to educate the population about consuming vegetables, limiting the intake of sugars and engaging in physical exercise.

Apart from the government's educational approach to the problem, there are no other measures other than awareness programmes employed to change the diets of consumers in the country. Educational awareness alone may not be sufficient to change the behavioural or consumption patterns and lifestyles of consumers. Given that the government has already instituted taxes that are aimed at changing the consumption choices of consumers (sin taxes), it has yet to consider a fat tax to be used to encourage consumers to make healthy choices.

Few studies have been undertaken relating to the implementation and effect of a fat tax in South Africa. One such example of a study carried out regarding the implementation of a fat tax in South Africa was carried out by Talbot (2011). The latter study sought to determine whether a fat tax could be levied as an additional source of fiscal income for the government of South Africa as well as bring about a behavioural change in the consumers of South Africa. Talbot's (2011) study found that the introduction of a fat tax could be substantiated in South Africa and that due to the fiscal difficulties faced by the country and the advent of the National Health Insurance scheme (NHI), the possibility of a fat tax should be researched thoroughly before implementation.

From a theoretical perspective, this study will determine the ability of a fat tax to manipulate consumer food consumption choices.

1.3 RESEARCH QUESTIONS

This study will attempt to answer the following research questions:

- Was the implementation of a sin tax on alcohol and tobacco able to manipulate the consumption volumes of alcohol and tobacco?
- Could a fat tax be used by the government to influence or manipulate the consumption of unhealthy foods?

1.4 RESEARCH OBJECTIVES

The study will be guided by the following objectives:

- To determine whether the implementation of sin tax on alcohol and tobacco was able to reduce or increase the use or purchase of the particular products which are subject to sin taxes by investigating the relationship between the levying of a sin tax and the consumption levels observed.
- To determine whether the introduction of a fat tax will be able to similarly influence the consumption of fatty and unhealthy foods through a survey that seeks to determine whether an additional tax on unhealthy foods will influence consumers to purchase healthier alternatives.

1.5 DELIMITATIONS AND ASSUMPTIONS

1.5.1. DELIMITATIONS

The following delimitation applies to the study:

- The population sampled for the questionnaire will only be based in the city of Pretoria, South Africa and excludes all other major metropolitan areas in South Africa.

1.5.2. ASSUMPTIONS

The study was carried out based on the following assumptions:

- The term 'fat tax' is loosely associated with the additional cost levied by a revenue authority on certain foodstuff. The levying of a fat tax would lead to the cost of the unhealthy foodstuff to a consumer to increase significantly in order to promote the purchase of healthier food. The introduction of such a tax may create an unfair advantage to some food manufacturers in terms of the Competition Amendment Act of 1999. Paragraph 2 (purpose of the Act) provides that one of the purposes of the Act is 'to provide consumers with competitive prices and product choices' (Competition Amendment Act of 2009). An introduction of such a tax may be contrary to the purpose of the Act. This study will, therefore, assume that the requirements of the Competition Act will be met should an additional levy on unhealthy food be introduced.
- Price considerations will be the only determining factor that will change the minds of consumers in purchasing foodstuff.
- The profit margins on cigarettes and alcohol have remained constant over the years that the trend is being investigated.
- The profit margins on unhealthy foods have remained constant over the years that the trend is being investigated.

1.6 DEFINITION OF KEY TERMS

This section of the document seeks to explain the technical terms used throughout the document in order to increase the reader's understanding of the terms used.

'Body mass index' (BMI) is an index of weight-for-height that is commonly used to classify overweight and obesity in adults (WHO, 2012a). BMI is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m^2).

'Budget speech' refers to the annual fiscal budget speech presented by the Minister of Finance of the Republic of South Africa to parliament outlining the government's allocation

of funds to various ministries. Furthermore, the annual budget speech is an opportunity for the Finance Minister to increase and decrease sin taxes levied on goods and services seen as a vice (if consumed) by the residents of the Republic of South Africa.

The term 'fast food' refers to food that is prepared and sold by fast food outlets and restaurants.

The term fat tax is used to refer to an additional levy on the cost of a foodstuff deemed to be unhealthy in terms of fat content and health properties.

'Minister of Finance' is the minister appointed by the President of the Republic of South Africa in charge of the National Treasury. The following ministers served a term as Minister of Finance of the Republic of South Africa since 1992: Derek Keys (1992-1994), Chris Liebenberg (1994-1996), and Trevor Manuel (1996-2009) and Pravin Gordhan (2009 - time of study).

The term 'obesity' means 'abnormal or excessive fat accumulation that may impair health' (WHO, 2012a).

The term 'sin tax' is the common name used for excise duties and levies which are collected on tobacco products, wine, spirits (liquor product), malt beer and other fermented beverages. 'The secondary function of these duties is to influence consumer behaviour, meaning that Government may manipulate excise duties and levies to discourage consumption of certain harmful products (to human health) as well as harmful to the environment' according to the South African Revenue Service (2012).

The term 'street food' refers to food prepared and sold by street vendors.

'Unhealthy food' refers to foodstuff high in saturated fats as well as foodstuffs high in processed sugar.

Table 1: Abbreviations used in this document

Abbreviation	Meaning
BMI	Body mass index
CBD	Central business district
GDP	Gross domestic product
HIV/AIDS	Human immunodeficiency virus/acquired immunodeficiency syndrome
NHI	National Health Insurance
NHS	British National Health Services
SABMiller	South African Breweries Miller Limited (Plc)
SARS	South African Revenue Service
UK	The United Kingdom
UN	United Nations (World Governing Body)
USA	The United States of America
WHO	World Health Organisation

1.7 OVERVIEW OF THE CHAPTERS OF THE STUDY

The study consists of seven parts (each a chapter in the study). Each of the chapters focus on the following aspects of the study:

- An introduction to the study
- Obesity
- Sin tax
- Fat Tax
- Research design and methods
- Results from the survey carried out
- Conclusion

A detailed literature review on obesity is presented in chapter 2 (that follows). In that chapter, the researcher reviews literature on the following aspects: the argument as to

whether obesity is a disease or a lifestyle, the increased prevalence of obesity around the world and in South Africa, the causes of obesity and the increased prevalence of obesity in children in South Africa and around the world. This is discussed in order to provide a background against which the study is performed.

A detailed literature review on sin taxes (their historical background) has been performed in chapter 3 of the study. Various viewpoints of various researchers regarding the implementation of sin tax has been investigated. The researcher has also performed a detailed study comparing the levels of sin taxes levied by the South African government on beer and cigarettes to the level of consumptions recorded in the country in an attempt to determine whether sin taxes in South Africa were able to manipulate consumption of products attracting the sin tax.

Chapter 4 is an overview of the viewpoints in favour of, and against the implementation of a fat tax in an attempt to manipulate consumption habits of consumers. A detailed review of the history of the fat tax as well as the WHO's stance on the matter have been detailed in the chapter. Furthermore, those countries which have considered, or have already implemented a form of a fat tax have been identified in the chapter as well. The arguments in favour of, and against the implementation of a fat tax provided in the chapter have been used in the conclusion of the study.

Chapter 5 discusses the research design and methodology. It provides a detailed explanation of the nature of the research activities that have been undertaken in the performance of this study. The sampling techniques and the method of data analysis used in the survey carried out have been discussed in the chapter. A detailed account of the research ethics applicable to the study has also been set out in the fifth chapter.

In chapter 6 of the study, the researcher analyses the data that has been obtained from the survey that was carried out. The results of the survey are represented graphically and a brief analysis provided.

The final chapter of the study presents the conclusion. In this chapter, the researcher summarises all information obtained in undertaking the study. Most importantly, the

researcher comes to a conclusion on whether the study was able to meet the research objectives of the study set out in chapter 1.

CHAPTER 2

OBESITY

In this chapter, the concept of obesity is discussed with a detailed investigation of the causes of the condition as well as the effects the condition can have on persons suffering from it. The importance of this chapter is that it sets the background against which the study has been carried out. As one of the purposes of the study is to determine whether the introduction of a fat tax will change the consumption patterns of consumers, the literature review presented below seeks to illustrate the link between obesity and food choices as well as the current situation in this regard in South Africa. All of these aspects are important to an understanding of whether a fat tax is an appropriate means of raising revenue in the South African environment.

2.1 MEDICAL CONDITION

Obesity is defined by different people in various ways. People generally define obesity as the medical condition of a person who is significantly overweight. BMI is a measure that ensures that there is consensus regarding what is considered obesity and overweight.

One can interpret BMI as a measure of a person's weight compared to their height. According to the Centres of Disease Control and Prevention (2011b), a BMI exceeding 30 indicates that a person is obese whilst a BMI between 25 and 29.9 indicates that a person is overweight. It can, therefore, be understood from the mathematical formula used to calculate BMI that a person's weight ought to be proportionate to their height.

There are numerous questions surrounding the seriousness of obesity. Questions are raised as to whether obesity is a medical disease or a lifestyle chosen by those who are obese.

The National Health Service of the UK states that lifestyle choices are an important factor in influencing the weight of a person (NHS Choices, 2010a). The NHS links an individual

person's lifestyle choices to obesity and is, therefore, of the opinion that obesity is a condition brought about by lifestyle choices and not a disease.

Kahan (2012) argues that obesity is a disease as it meets the definition of a disease. A disease is defined as an impairment of the body or one of its parts resulting from various causes, such as infection, genetic defect, or environmental stress, characterized by an identifiable group of symptoms (Kahan, 2012). He proceeds to make the following qualifications of the disease:

- Obesity impairs the body. Kahan (2012) argues that development of other diseases impairs the body as the person will begin to develop metabolic, hormonal and cellular disruptions which may lead to premature death.
- Obesity is the result of various causative factors. Kahan (2012) argues that obesity is driven by a constellation of factors, such as genetics and stress.
- Obesity is identifiable by a group of symptoms. Kahan (2012) argues that weight gain, difficulty in breathing, difficulty in moving, skin changes and joint pain (to name a few) are all symptoms of obesity.
- According to WHO (2011(b)) a raised BMI is a major risk factor to a person contracting non-communicable diseases and some cancers.
- According to Goedecke, et al. (2006) obesity can lead to the following diseases: type two diabetes, coronary heart disease, hypertension, cancers, psychological implications, osteoarthritis and morbidities in children.
- According to Kahan (2012) obesity can lead to premature death due to the susceptibility of an individual who suffers from obesity to develop other chronic illnesses and diseases.

Obesity is a disease. There is sufficient research available to indicate that a person suffering from obesity will become subject to various health consequences. It is also clear that obesity increases the risk of attracting other medical conditions, such as diabetes and heart disease which costs the government millions to treat annually. In conclusion, obesity is classified as a disease as it has the ability to impair the functioning of the body (Kahan, 2012). And, as such, the government needs a planned response to tackling the disease amongst its citizens.

2.2 INCREASED PREVALENCE

Obesity was identified as the fifth leading cause of death in the world in the year 2008 according to the WHO (2012b). In South Africa particularly, the global pharmaceutical company GlaxoSmithKline has undertaken a study and found that 61% of the South African population are obese or overweight (Kerr, 2012).

2.3 CAUSES OF OBESITY

The most agreed-upon causes of obesity have been described as follows:

2.3.1. Genetics

According to the WHO Global Strategy on Diet, Physical Activity and Health 'genes are important in determining a person's susceptibility to weight gain' (WHO, 2012 (c)). Furthermore, according to Goedecke, et al. (2006), researchers have reported that a 75% of the variation in percentage body fat and total fat mass is determined by culture and lifestyle, whereas 25% can be attributed to genetic factors.

The genetic make-up of an individual is important to determine their predisposition to obesity. However, it is not as important as culture and lifestyle (which include early life influences, dietary intake, levels of physical activity, education and socio-cultural factors).

2.3.2. Dietary intake

According to WHO (2012b) 'an increased intake of energy-dense foods that are high in fat, salt and sugars but low in vitamins, minerals and other micronutrients' is considered one of the fundamental causes of obesity. This supports the belief that the cause of obesity is the consumption of energy faster than the body can consume it.

According to Goedecke, et al. (2006) '...although excessive calorie intake is responsible for the development of obesity, high fat diets promote fat accumulation significantly more than high carbohydrate diets because of the high energy density, metabolic efficiency,

palatability, poor regulation and weak satiating effect of fat. This is especially relevant in South Africa where the increased urbanisation associated with the adoption of a more westernised diet, which is higher in saturated fat and has less carbohydrate and fibre than a 'traditional diet'.

The rapid urbanisation of South Africa and the growing size of the middle class in the country have led to South Africans adopting diets extremely high in sugars and saturated fats leading to people consuming more energy than they can expend. This results in fat accumulation, overweight and obesity (Mail & Guardian, 2012).

According to WHO (2012b) the rapid rise in incomes and urbanisation has altered diets to include foods high in fats, saturated fats and sugars (sweet sugary drinks, fatty fast foods, etc).

The consumption of foods that are high in fat is a significant contributor to the state of obesity in individuals. The study focuses on the possible changing of people's diets through a fat tax. The tax will seek to ensure that foods high in fat are not as cost effective to obtain as a healthier alternative.

According to Food Navigator.Com (2004), a study carried out by the USA Department of Agriculture confirmed that persons who consumed fast foods had increased calorie consumption rates and ultimately a greater risk of obesity and overweight.

Obesity is caused by a number of factors, an unhealthy fatty diet being one of the contributing factors. In fact, the WHO (2012b) recognises only diet and physical activity as the biggest and most significant contributors to obesity.

2.3.3 Level of physical activity

In a study that sought to understand the underlying causes of obesity the WHO (2012b) commented that: 'A large shift towards less physically demanding work has been observed worldwide...less physical activity is also found as a result of the increase in automated transport, technology in the home, and more passive leisure pursuits'...It has, therefore,

been established that persons worldwide are becoming less physically active due to technological advances and because the world economy has become less labour intensive.

The level of activity of a people cannot be changed or affected by a fat tax. For this factor to be addressed, the South African government needs to implement programmes that educate the population regarding the need for physical activity required in maintaining a healthy weight.

2.3.4. Socio-cultural factors

Goedecke, et al. (2006) indicate that research has shown that in South Africa being overweight is not associated with the HIV/AIDS stigma in the black community (underweight persons are assumed to be carriers of the virus). The research pointed out that, to the black population, an overweight body represents: happiness, beauty and affluence, amongst other things.

The socio-cultural factors which contribute to overweight among people, especially black people in South Africa, cannot be addressed through a fat tax (Goedecke, et al., 2006). Changing the socio-cultural misconceptions about health will require government intervention to educate people that being overweight will have significant health ramifications in the long run.

2.3.5. Education

In the study carried out by Goedecke, et al. (2006) some correlation between body size and the level of education of the respondents in the study was established. The study found that the lower a person's level of education, the more skewed (negatively) is the person's perception of body weight. This means that the least educated individuals believed that overweight bodies were most pleasing to the eye (Goedecke, et al., 2006). The study also revealed that women with smaller waists were the most educated (Goedecke, et al., 2006:73). This indicates that the more educated the women were, the healthier they kept their weight.

The lack of education can be linked to the lack of knowledge regarding general health and healthy eating habits. The level of general health knowledge of the people of the country has to be increased in order to address this factor.

2.3.6. Stress

Goedecke, et al. (2006) has found that persons who had high levels of stress tend to eat more in order to reduce the levels of activity in their chronic stress response network (in order to not think about what causes the levels of stress to increase).

Psychological illnesses like stress cannot be treated by external interventions as it is not a physical condition. Obesity linked to stress eating can only be addressed by means of psychological help for the affected person and not by means of a fat tax.

2.4. CHILDREN

Obesity is not only confined to adults as children (both in South Africa and internationally) are increasingly becoming prone to obesity (WHO, 2012b; Kerr, 2012).

2.4.1. Current status

WHO (2012b) estimates that, in 2010, there were 43 million children under the age of five who were overweight. The report further states that childhood obesity, which was 'once considered a high-income country problem is on the increase in low- and middle-income countries, particularly in urban settings' (WHO, 2012b).

Obesity is fast becoming common amongst children. The situation is no different in South Africa. 'There has been a significant increase in childhood obesity in South Africa' (Kerr (2012). Research undertaken in South Africa by GlaxoSmithKline, a pharmaceutical company, revealed that 17% of the children in South Africa are overweight or obese (Kerr, 2012).

2.4.2. Possible reasons for childhood obesity

According to Kerr (2012): 'South African children have a high degree of exposure to fast food and unhealthy snacks'. This is backed up by the research that was carried out by Goedecke, et al. (2006) which also attributed the rapid urbanisation and the adoption of westernised diets which are high in saturated fats and contain less carbohydrates and fibre to obesity.

Children's exposure to the fast food industry, lack of physical activity (WHO, 2011(c)) and unhealthy snacks are a factor in the increasing levels of obesity in children in South Africa.

2.4.3. Implications for children

Obesity and overweight in children have significant effects on the child in the formative years of the child's life as well as far-reaching effects on the child's life as an adult. According to the research conducted by Goedecke, et al. (2006): 'obesity and overweight have psychological implications...body image issues, unhappiness and disordered eating. Research has shown that overweight during adolescence has important social and economic consequences. Children who are obese are also more likely to develop eating disorders later on in life than healthy weight children' (Goedecke, et al., 2006)

2.4.4. Addressing the problem with the parents

According to research conducted by KidsHealth (2012), family members of the same family unit were found to have the same eating habits, enjoyed the same activities, enjoyed the same level of physical activity, have the same attitude towards being obese and overweight and that other studies have shown that a child's risk of obesity greatly increases if one or more of the parents are overweight or obese. Therefore, parents have the ability to influence the eating/consumption decisions taken by their children. These particular lifestyle decisions can be influenced from the parental perspective in order to change the attitudes and lifestyles of the children.

2.5 SOUTH AFRICA'S SITUATION

The level of severity of the overweight and obesity situation in South Africa cannot be disputed since researchers claim that South Africa is the fourth fattest nation in the world. Furthermore, more than 61% of the population are classified as being obese or overweight. (Kerr, 2012)

With such statistics the South African population, according to studies undertaken by (Goedecke, et al., 2006; Kahan, 2011; WHO, 2011 (b)), is more prone to develop the related diseases. Some changes are required to be made that will affect the whole population of the country by the government to change the statistics. Is the levying of a fat tax the catalyst required to begin to reduce the levels of obesity in the country?

The *Mail & Guardian* (2012) reported that there were diseases with little visible symptoms that were silently killing South Africans. Most of the diseases were in fact preventable as the primary cause of most of these diseases lies in the fact that South Africans consumed too much food and drink and exercised too little. The *Mail & Guardian* (2012) acknowledges that the primary cause is oversimplified. However, the increasing westernisation and urbanisation of the country has led to persons living more sedentary lifestyles which have also led to an increase in the consumption of fast food (high in salt, sugar and fat).

The result of these sedentary lifestyles is that the diseases classified as 'silent killers' is hypertension, type two diabetes, heart attacks and a negative impact on both the private and public health sectors.

2.6. CONCLUSION

The prevalence of obesity and overweight in South Africa is high. This bodes ill for both adults as well as children in the country. Many factors can be linked to the cause of obesity, many of which cannot be controlled externally (genetics, stress and education). Therefore, level of physical activity as well as dietary intake (Fat Tax applicable) are the means by which immediate intervention can take place. Immediate intervention in the form

of physical activity can only take place through educational approaches (as the government cannot prescribe exercise to be performed by its citizens). The purpose of the study was to determine whether dietary intake can be influenced in the same manner in which the government seeks to influence the consumption of products that are subject to sin taxes by the levying of a fat tax, if it is possible to do so. The chapter that follows seeks to understand what sin taxes are, as well as to illustrate the effects that the increase or decrease in the sin tax has had on the consumption of the products that are subject to the sin tax.

CHAPTER 3

SIN TAX

One of the purposes of the study is to determine whether the introduction of sin tax was effective in changing consumer behaviour (in consuming products that are subject to a sin tax). This chapter consists of three parts to fulfil this purpose. Firstly, a review of the literature is provided which deals with the history, the purpose as well as opinions in favour of, and against the use of a sin tax. Secondly, data was collected regarding beer sales in South Africa and compared to sin taxes levied by the Minister of Finance in order to establish whether the beer sin tax was successful as an attempt to curb consumption. Lastly, similar data was collected in respect of tobacco sales as well as the sin tax levied to establish whether the tobacco sin tax was successful as an attempt to curb consumption.

3.1 HISTORICAL REVIEW OF SIN TAX

3.1.1 'Sin tax'

The term 'sin tax' is normally used in place of the term 'excise duties and levies'. The South African Revenue Service is the sole revenue service in South Africa tasked with the collection of excise duties and levies.

3.1.2 History and purpose of sin taxes

The primary purpose of the imposition of excise duties and levies is fiscal by nature. It is levied to provide the State with an easy and collectable constant stream of revenue. For this reason, the criteria used to select a product suitable for this purpose is basically that it should be fast moving, high volume daily consumables and in addition to this, mostly non-essential products (eg. alcohol and tobacco products) hence the name 'Sin Taxes' (South African Revenue Service, 2012).

The secondary function of these duties and levies is to influence consumer behaviour, meaning that Government may manipulate excise duties and levies to discourage the

consumption of certain harmful products harmful to human health (such as tobacco products) as well as harmful to the environment (South African Revenue Service, 2012).

In view of the above statements, primarily, all sin taxes are to provide the government with a steady collectible stream of income for the Fiscal authorities. The secondary purpose (which is not diminished by the first) is to influence consumer behaviour. According to the South African Revenue Service (2012), excise duties and levies generate approximately 10% of the total national revenue collected from taxes by the South African Receiver of Revenue. This suggests that the primary goal of the sin tax is achieved as it gathers substantial revenue for the government on fast-moving and high volume goods.

The idea of a sin tax is not a new idea. According to the South African Revenue Service (2012), excise duties were first recorded in history when they were levied in England by Charles II in 1643 in order to fund his civil war against Charles I. Therefore, the idea of an excise duty, which is easily collectable and an easy source of income, is an old and tested idea.

In South Africa, excise duties and levies are levied in terms of Schedule No 1 of the Customs and Excise Act No 91 of 1964. According to South African Revenue Service (2012), excise duties are levied on the following:

- Specific excise duty products: fuel/petroleum products, tobacco products, malt beer, traditional African beer, spirits/liquor products, wine, other fermented beverage; and
- *Ad volorem* excise duty products: motor vehicles, electronic equipment, perfumes.

3.2 ARGUMENTS FOR, AND AGAINST SIN TAX

Baldwin (2004) questions whether a sin tax can be used in order to correct the behaviour of people, and help control the environmental issues that are being experienced. The author is of the opinion that outlawing something is less effective than letting it be and charging a fee on that specific activity.

Baldwin (2004) states that sin taxes on alcohol work better than prohibition did and that they may work for other harmful substances too.

He points out that the introduction of an environmental sin tax may be as successful in changing behaviour as the introduction of sin taxes on alcohol (Baldwin, 2004). He believes that the introduction of a sin tax on alcohol was effective and can be used as a yard stick in measuring the potential successfulness of the implementation of a new sin tax to address environmental issues and any other issues that affect people for which a sin or vice tax (tax levied to alter behaviour or consumption patterns) can be levied.

Baldwin (2004) questions why a similar approach is not followed to address some of the environmental ills that are being witnessed in the world. He advocates punishing bad behaviour instead of outlawing it. Baldwin proposes that environmental ills should be legalised, but that a fee should be charged to persons who transgress. His logic is that those who want to pollute should be allowed to pollute and in return pay cash (allowing the state to generate revenue).

The shortcoming of the study is that it does not address fat tax as a definite tax that can alter the behavioural patterns of consumers. However, as the researcher applies it to another form of tax, the idea remains aligned with the idea of the study that has been undertaken. However, Baldwin's views of placing a sin tax on a product to change behaviour are directly aligned with the purpose of the current study because this study attempted to determine whether the introduction of a fat tax would have the desired effect (would lead consumers to purchase healthier alternatives) (Baldwin, 2004).

There are, however, researchers and authors who have questioned the levying of the sin tax by various revenue authorities throughout the world, and put forward various reasons for scrapping or abolishing sin tax .

According to an article in *The Economist* (2011): "smoking rates have been falling for decades. Some 45% of people smoked in the mid -1970's; now 21% do. High taxes are one reason. So are public campaigns, changing social mores (traditions) and smoking bans in workplaces introduced in Britain in 2007. The Office of Budget Responsibility in the

United Kingdom predicts that tobacco receipts, now 0.6% of GDP, will supply half of that by 2030”.

The abovementioned article also maintains that the main reason that government revenues from cigarettes will decrease to 0.3% of GDP in 2030 is due to illegal trade in cigarettes because the smoking population of the UK has been enticed into illegally importing cigarettes into the country in order to avoid the increasing excise duties payable on cigarettes. It stresses that sin tax is not the only reason why smoking rates in Britain have decreased. The decrease can be ascribed to tighter smoking control, illegal trade in cigarettes as well as sin taxes.

However, *The Economist* (2011) expresses the opinion that decreasing sin taxes, as a result of the tax having the desired effect and decreasing consumption, will have to be supplemented by another type of tax as the government budget will still require sin taxes to be collected. Although sin taxes are not the only reason for decreased consumption, they have the ability to alter the spending habits of the consumers of the products that are seen to be a vice to society. The evidence is that the number of smokers in Britain as well as the consumption of alcohol has declined due to the introduction of increased sin taxes. However, the decreased revenue collection will only lead to additional taxes being raised in order to collect the same fiscal revenues which may not be appreciated by the public at large.

Lane (2004) questioned the use of the sin tax as a means to immediately decrease budget deficits in the State of Michigan, USA as she was of the opinion that the 75 US cents tax on cigarettes helped the federal government to fill immediate gaps in the budget and did nothing to correct the deeper chronic problem of the multimillion dollar mismatch between the revenues that the state generated and what the state spent in 2004. Lane (2004) dismissed the idea of a sin tax for the primary purpose of breaching the fiscal deficit that the State of Michigan had been experiencing at the time. As pointed out above, government’s purpose for levying a sin tax is to collect a steady stream of income (South African Revenue Service, 2012).

Lannoye (in Lane, 2004) recommended that the State of Michigan should implement a tax that would provide long-term sustainable tax revenues as the issue with revenues collected from products seen as vice products is that the revenues grow and will even out in future as the revenues do not continue growing as the budget burdens of the government, such as healthcare increase.

Criticism has also been levied against sin taxes due to the notion that they will be bad for small business and for society as a whole.

Keating (2010) argues that the sudden attempts by government and certain lobby groups to impose sin taxes on certain industries is driven by the government's need to generate tax revenues and has nothing to do with the perceived notion of wanting better health or saving the environment. Keating (2010) states that sin taxes spell trouble on various fronts:

- All increases in sin tax repatriate money from the private sector to the government.
- Increases in prices as a result of sin taxes will negatively affect consumers as they will be met with increased prices and fewer choices.
- Retailers directly experience lost sales due to higher tobacco, alcohol and food taxes.
- As cigarette taxes increase, additional costs related to an expanding underground economy are engendered while smuggling feeds larger criminal activity.

Keating (2010) argues that with the increase in price levied by sin and food taxes, the greater economy is affected as the government in effect takes a substantial portion of revenues that ought to be in the public sector.

Keating's (2010) main argument against behavioural taxes (sin and fat taxes) is that they create a 'nanny' state where consumers are 'looked after' by the government who will gain control over its citizens. Keating (2010) maintains that:

'...not only does government wind up grabbing more dollars from the pockets of consumers and cash registers of businesses, but politicians and special interests gain more control over everyday decision-making – from the types of cars people drive to what they eat and drink'.

Keating (2010) dismisses the use of a sin tax to change consumer behaviour as in his opinion, this creates a 'nanny' state.

3.3 INFLUENCE OF SIN TAX ON CONSUMER BEHAVIOUR IN SOUTH AFRICA

Table 2 and table 3 represent data collected in determining the effect of a sin tax on the consumption of products that are subject to a sin tax. A comparison between the increase or decrease in sin tax levied by government and the increase or decrease in the levels of consumption of the products that are subject to sin tax was performed and is presented.

Tobacco and beer were chosen for this comparison as the two products (subject to a sin tax) that were investigated.

Source of data for table 2:

The beer consumption (litres) was obtained from the annual financial statements of SABMiller representative for the financial years 2002 up to 2012 (South African Breweries Miller Plc, 2012). The increase (excise duty) per litre was obtained from the annual budget speeches presented to parliament by the Finance Minister of South Africa for the same period (South African Government Information, 2012).

Source of data for table 3:

The cigarette consumption in tons data was obtained from the Datamonitor (2011) report on tobacco consumption in South Africa. The increase (excise duty) per pack of 20 cigarettes was obtained from the annual budget speech presented to parliament by the South African Minister of Finance for the same period.

3.3.1 Beer consumption

The Minister of Finance of the Republic of South Africa tables a budget in parliament at the beginning of the government fiscal year. In the budget, the Minister determines the excise duties (sin taxes) that will be levied on each type of product.

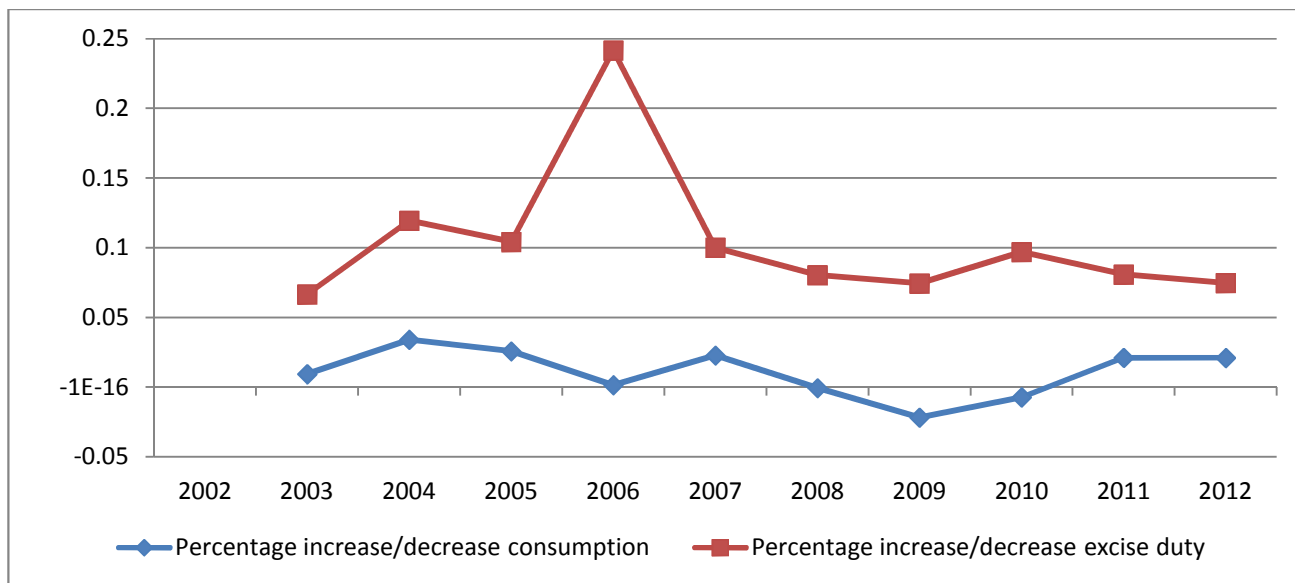
Data was collected from the budget speeches of the Minister of Finance for the fiscal years 2002 up to (and including) 2012 in order to determine the increases in the excise duties that were levied. The minister's budget speeches were obtained from the government's website (South African Government Information, 2012). The website contains archived speeches made by the Minister dating as far back as 1990. The Minister-announced cent increase in the excise duty per litre of beer sold was recorded in the table for the year applicable. Table 2 represents the data collected from the financial statements of SABMiller as well as data collected from the Minister's budget speech. The minister's budget speeches were deemed to be the most accurate source of the levels of excise duties that are to be charged as the speech is delivered in parliament and the laws deemed to be enacted once they are spoken in parliament.

Data regarding beer sales per litre in the country were obtained from the annual financial statements of South African Breweries Miller Limited (Plc) (South African Breweries Miller Plc, 2012). The use of the company's sales in South Africa was deemed to be representative of all beer sales in the country as the market share of the company in South Africa has been estimated at 90% according to the Bureau for Economic Research (2008). SABMiller is therefore the single largest and most representative distributor of beer in South Africa.

Table 2: Beer consumption compared to excise duty (2002 – 2012)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Beer consumption (litres)	24,200	24,428	25,261	25,912	25,951	26,543	26,526	25,949	25,761	26,306	26,859
Increase per litre (Budget speech)	6	7	13	13	32	17	15	15	21	19	19
Excise per litre	102	108	121	134	166	183	198	212	233	252	271

Figure 1: Beer consumption vs. Excise duty increase (%)



The data represented in Figure 1 indicates that there is not a significant correlation between the percentage movements in the excise duties levied on beer and the consumption of the beer products themselves.

The researcher noted that in the year 2006 there was a significant increase in the excise duty payable on beer which led to negative growth in the consumption of beer (beer sales recorded by SABMiller). The 2006 year stands out as the only year in which the increase in excise duty was able to lead to a slower growth in sales of beer in the country. This can be ascribed to the fact that a significant increase in excise duties was implemented in the year 2006. It is important to note, however, that beer consumption still increased in the year concerned but not at the rates experienced in the years 2005 and 2007 (South African Breweries Miller Plc, 2012).

The years 2009 and 2010 were the only two years over the 10 year period reviewed in which beer sales have had a negative growth. The SABMiller annual financial statements were inspected in order to obtain insight into the reason for the declines experienced by the company in the financial years concerned. Every other year has shown percentage increases in beer volume sales as the excise duty on beer has increased as well (South African Breweries Miller Plc, 2012).

According to the annual financial statements for 2009, a decrease in beer consumption was noted as consumers purchased less premium beers. Furthermore, legislation came into effect in the Western Cape against the informal trading of beer (SABMiller, 2009).

According to the annual financial statements for 2011, negative growth in beer sales was experienced due to the economic environment in South Africa which posed difficulties throughout the financial year (SABMiller, 2010).

According to the Business Monitor International (2012) the beer market in South Africa is deemed to hold a large amount of growth prospects as the emerging middle class in South Africa continues to grow. This may be a reason why beer consumption is not affected by changes in the excise duty levied on the product as beer sales have been seen to increase over the period despite increases noted in excise duties as well. Furthermore, SABMiller continues to produce beer for low income groups whose levels of consumption continue to grow in South Africa (Business Monitor International, 2012).

Lastly, as far as beer sales and excise duties levied are concerned, evidence is available to suggest that the negative correlation between the percentage change in beer sales and percentage change in excise duties levied on beer is indicative of the fact that an excise duty on beer has not been effective in its secondary purpose of manipulating the consumption patterns of consumers (South African Revenue Service, 2012). Based on the results noted above, one could conclude that a sin tax on beer does not change the consumption patterns of consumers.

3.3.2 Tobacco consumption

The same approach followed in the analysis of the increase or decrease in the consumption of alcohol and the increase or decrease in excise duties was followed in determining the relationship between tobacco consumption levels and the excise duties levied. Table 3 below represents the raw data that was obtained from the annual budget speech as well as the raw data obtained from the report on tobacco consumption in South Africa as published by Datamonitor (2011).

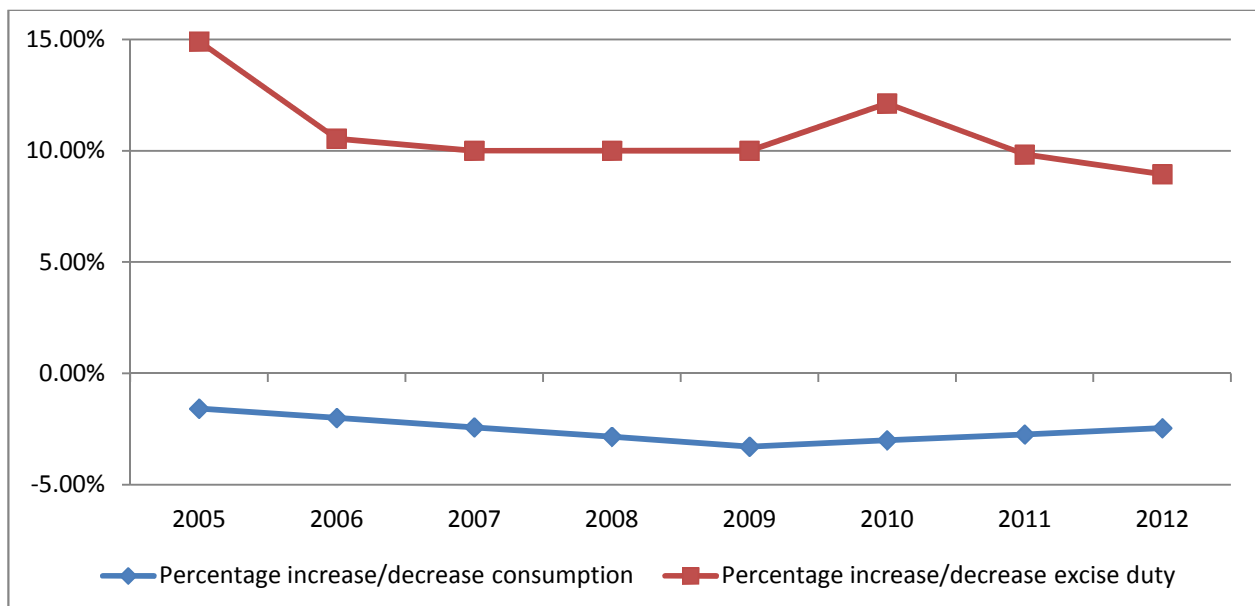
Data was collected from the Minister of Finance’s budget speeches for the fiscal years 2002 up to (and including) 2012 in order to determine the increases in the excise duties that were levied (South African Government Information, 2012)

The tobacco consumption levels were obtained from the tobacco consumption report as reported in the research carried out by Datamonitor (2011). This was found, by Datamonitor, to be the most comprehensive indicator of the consumption of tobacco in South Africa as it provides an overall view of consumption in the country. The aforementioned report is, therefore, considered the most appropriate source of data for purposes of the study as the data is focused on the South African market.

Table 3: Tobacco consumption compared to excise duty (2004 – 2012)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Cigarette consumption	23,125	22,760	22,306	21,767	21,150	20,456	19,843	19,301	18,828
Sin tax increase per pack of 20	389	64	52	55	60	66	88	80	80
Total excise	429	493	545	600	660	726	814	894	974

Figure 2: Tobacco consumption vs Excise duty increase (%)



Tobacco consumption in South Africa has shown negative growth over the period investigated whilst there is an increase in excise duties on cigarettes. This indicates that

an increase in the excise duties in respect of the sale of tobacco products leads to a corresponding decrease in the sale of the tobacco in the country (Figure 2).

Evidence drawn from the data obtained from table 3, which has also been graphically presented in figure 2, shows that excise duties on tobacco affect the consumption of the product as an increase in the excise duty levied led to a decrease in consumption as there is noted negative growth in tobacco sales over the period noted. However, the level of increase in excise duties levied does not lead to the same significant decrease in the consumption of tobacco. Significant movements identified are dealt with below.

In 2006, the increase in the excise duties levied on tobacco only increased by 10% as compared to the 15% increase noted in the 2005 year. However, a greater decrease in consumption was noted since the decrease in consumption increased from -1.58% to -2%. This effect is deemed noteworthy as expectation would dictate a better decline in consumption percentage (one less greater than -1.58%).

In 2010, a significant increase in the excise duty levied on tobacco was noted. However, the decrease in consumption was lower than the increase noted in the 2009 year.

3.4 CONCLUSION

Tobacco sales seem to be influenced by an increase in excise duties, as the increase in excise duties resulted in a decrease in consumption. However, the correlation between the two is deemed to be low as the percentage change in excise duty and percentage change in tobacco consumption are not in proportion. Therefore, although excise duties have an effect on the consumption of tobacco, the effect is deemed to be weak (not significant).

Chapter 4 provides a detailed account of the opinions of authors in favour of a fat tax as well as those researchers who oppose the fat tax. Furthermore, the role played by a fat tax in the consumption of food is also investigated.

CHAPTER 4

FAT TAX

The concept of a fat tax is introduced in this chapter. Its origins, the different countries which have implemented it and those countries considering implementation, as well as the various means by which it can be introduced are all discussed in this chapter. The opinions of medical practitioners, academics and politicians regarding the implementation of the fat tax have been explored in the literature review on the topic.

4.1 CONCEPT OF FAT TAX

Given the increased levels of obesity in the world and the fact that obesity-related illnesses are the fifth leading cause of death in the world according to the WHO (2011 (b)), the introduction of a fat tax seems a viable method or option for governments around the world. In attempting to change the consumption patterns of all their respective citizens, various governments are contemplating taxes on fatty foods to save people from themselves (AFP News Agency, 2011; Williams, 2011).

According to Chouinard, Davis, LaFrance and Perloff (2007) there are two approaches to taxing fatty or unhealthy foods.

- The first approach would be to tax an entire class of unhealthy food. The approach has been used in applying a fat tax on the consumption of sugary sodas or snacks in order to influence consumption and is often used by legislators.
- The second approach involves taxing the various components of the food based on a proportion of their fat content according to Leicester and Windmeijer (in Chouinard, et al., 2007).

Thus, there are two approaches to the Fat Tax scenario. On an administrative level, the first approach propagated would be far easier for the revenue authority in the country to quantify and collect. Ease of administration is one of the considerations when establishing a new tax. Therefore, the first approach would be easier to promote than the second approach.

4.2 BRIEF HISTORY

The idea of a fat tax is not a relatively new idea. The idea was initially thought of in the 1980's. According to Leger (2011) in the early eighties, Kelly D. Brownell, Director of the Rudd Centre for Food Policy and Obesity at Yale, proposed that revenue from junk foods should be used to subsidise healthier foods and nutrition campaigns. Since then, fat taxes have been implemented in countries across Europe as well as some states in the USA. The fat tax has been implemented in various ways with some countries, such as Denmark choosing to levy the tax on the various components of the food (AFP News Agency, 2011). Other countries have opted to introduce a fat tax on an entire class of food stuff. For instance, France levied a fat tax on all sodas (Watson, 2011).

4.3 OPINIONS IN FAVOUR OF, AND AGAINST A FAT TAX

Mozes (2011) identifies certain foods and liquids that ought to be subject to a fat tax. The foods identified include foods high in calories or low in nutritional value. Sugary soft drinks, for instance, are in the category of foodstuff that ought to be subject to a fat tax. The call for a fat tax has been substantiated by Mozes (2011) as he has found that the cost of healthy food is higher than the cost of unhealthy food in the USA and that introducing a fat tax would discourage the purchase and consumption of unhealthy food. Mozes (2011) further states that a fat tax could be used as a type of subsidy for healthy alternative food. Healthier food alternatives and additional revenue which government can plough back into obesity awareness campaigns are all benefits that an instituted fat tax may bring (Mozes, 2011).

Mozes (2011) supports a type of fat tax on sugary goods for the potential revenue that it can generate for the government as he explained that a one cent tax on all soft drinks sold could generate 1,5billion US dollars. Furthermore, the revenues could be used to augment the government's current 1,5million dollar Childhood Obesity Prevention Programme (Mozes, 2011). Educational programmes have also been identified by the WHO as one of the instruments that can be used in the fight against obesity and overweight (WHO, 2011(c)). However, the author also highlights the fact that a fat tax alone will not make any

significant strides in reducing obesity, and that educational programmes still need to be in place to promote healthy eating habits among children and adults.

Mozes's (2011) view that a fat tax can be used to subsidise healthy food is supported by Brownwell (in Leger, 2011) who proposed that some receipts from the sale of junk food be used to subsidise healthier alternatives and educational awareness programmes.

The use of fat tax proceeds for the subsidising of an alternative health aimed programme has been central to the fat tax debate. In the South African context, proceeds on the tax can be used to increase awareness with regard to government health awareness-related programmes.

Leger (2011) provides further evidence of the fact that a fat tax is beneficial to both the government (Ministry of Health of the UK) and the individuals on which it is levied. According to Leger (2011) researchers at Oxford University and Nottingham University claimed that a 17.5% VAT on unhealthy foods could save over 3,000 lives a year in Britain by reducing the occurrences of serious obesity complications such as diabetes and cardiovascular diseases.

Allias, Bertail and Nichèle (2010) conducted a study to try and quantify the effects of a fat tax on the purchases of French households. A nutritional approach was adopted. According to the report, in the short term, the introduction of a fat tax will not have a material effect on the nutritional goods that the French households (across various income groups) would consume. Furthermore, the study also found that the fat tax will cause a slight difference in the body weight of the households, in the short term, with greater effect in the long term (Allais, et al., 2010). The study carried out by the researchers was thorough and scientific as they used economic models to determine the effect of introducing a fat tax on products.

Denmark became the first country in the world to implement a fat tax system in October 2011 according to AFP News Agency (2011). Various difficulties were experienced by the country in the implementation of the fat tax.

According to AFP News Agency (2011) 'Denmark's Confederation of Industries says that the costing system is a bureaucratic nightmare for producers and outlets'. The spokesperson for the Danish Confederation of Industries further commented that 'the way that this has been put together is an administrative nightmare and I doubt whether it will give better health'. A fat tax is described as an additional tax that would prove to be ineffective as the additional cost would just be passed down to the consumer and a potential loss in Danish jobs would follow (AFP News Agency, 2011).

The Danish Confederation of Industries identified the following administrative issues with regard to the implementation of a fat tax: costing systems had to be changed, consumers would have to pay additional prices, which are the aim of the tax, and foreign exports into Denmark required exporters to declare levels of fat saturation. These are the issues which were not considered by the legislators (AFP News Agency, 2011).

Furthermore, the European Union was studying the legal aspects of the tax in greater detail as there were competition issues on which the tax would have an impact (AFP new agency, 2011). The competition issues in respect of the fat tax may be a consideration that any legislator might have to consider. The major problem with Denmark's approach is that the nutritional content of the food is taxed and not an entire class of food as in approach number one as described by Chouinard, et al. (2007). The second approach adopted has been found by Chouinard, et a.l (2007) to be more of an issue to administrate and thus the administration issues in Denmark with regard to implementation of a fat tax.

Sinha (2011) discussed the possibilities of introducing a fat tax on unhealthy foodstuff to curb obesity. He debates both the introduction of fat tax as well as the non-introduction of the fat tax in India (India and South Africa are both members of the BRICS group of developing nations with similar economic constructs at the time the study was undertaken). Sinha (2011) stated that it is possible that awareness about correct dieting and the correct exercise may be a better strategy in fighting the increasing levels of obesity.

Misra (in Sinha, 2011) believes that taxing citizens of a country for being obese is an extreme measure that would be more suited for more developed countries where citizens

have access to basic knowledge about health and diet and where exercise and fitness facilities are available. Better measures for a country like India would include enhancing awareness about correct diet and physical activity and for the government to create an environment conducive to healthy lifestyles by the provision of parks that would help citizens maintain healthy body weight and fitness levels. Because India has an economic structure and social construct closely matched to that of South Africa (both are members of the BRICS developing nations) the same argument can be followed as to why a fat tax cannot be levied in South Africa. Misra (2011) is of the opinion that an educational approach is more applicable. This educational approach has already been adopted by the South African Government (Goedecke, et al. 2006).

However, the largest disparity between India and South Africa is the recorded levels of obesity. According to Sinha (2011), there are 4.4 million men and 8 million women who are obese in India. In a country where the population exceeds 1 billion, the percentage of obese persons amounts to approximately 1.24%. The levels of obesity recorded in South Africa outweigh those levels recorded in India. The international pharmaceutical company GlaxoSmithKline has estimated that 61% of the South African population is overweight or obese (Kerr, 2012). There is a large difference between South Africa and India as far as the gravity of the obesity issue is concerned. This statement can be made solely based on the percentage prevalence of the disease.

4.4 IMPLEMENTATION OF A FAT TAX IN DIFFERENT COUNTRIES

The governments of the following countries (listed below) have introduced a fat tax with the hope of reducing obesity levels in their respective populations although the list is not exhaustive:

- France (Watson, 2011)
- Denmark (Leger, 2011)
- Hungary (Thompson, 2011)

A short discussion on each country will follow.

4.4.1 France

France approved a fat tax on sugary drinks, such as Coca-cola and Fanta in 2011. Watson (2011) identifies the reason why the French government introduced a fat tax. France has over 20 million citizens who are overweight or obese with obesity levels rising quickly. The fat tax on sugary sodas was introduced as a measure to make the products expensive in order to deter people from purchasing them as readily and easily as they once did. The introduction of the fat tax is seen as a corrective measure on the consumption behaviours of the French people (Watson, 2011). The government of France went even further by rationing mayonnaise and tomato sauce in the school cafeterias in an attempt to curb increasing levels of obesity caused by the consumption of fast foods in the country (Watson, 2011).

According to Watson (2011) the new measures which levy six cents per litre on sugary drinks are expected to raise in excess of the equivalent of 100 million British Pounds for the French budget. It is estimated that the fat tax on sugary goods will become a significant source of government collected taxes which may be used by the government for fiscal spending (Watson, 2011).

4.4.2 Denmark

Denmark became the first country in the world to legislate a fat tax according to a report by AFP News Agency (2011) which also provides details on the products that will be subject to the fat tax.

According to AFP (2011) the fat tax is levied on all products containing more than 23 % saturated fats (eg. butter, milk, oils, meats, pizza). The tax was approved by the Danish Parliament in 2011 making it the first country in the world to introduce the tax.

With the approval of the Danish parliament, Denmark became the first country in the world to introduce a fat tax. The fat tax approach followed by Denmark is the approach explained by Chouinard, et al. (2007) 'to tax the unhealthy component of foods; for example, a tax on

foods as a proportion or percentage of their fat content'. This system has been identified as an administrative nightmare by legislators in Europe.

4.4.3 Hungary

Hungary introduced a fat tax on all foods that the government considered to be unhealthy. The foods that are subject to a fat tax in Hungary include: crisps (chips), soft drinks and chocolates, amongst others (Euractiv, 2011).

The main reason behind the levying of a fat tax in Hungary was cited as 'to boost the nation's health' (Euractiv, 2011). Hungary is estimated to be the seventh most obese nation in Europe with 18.8% of its adult population classified as obese (Thompson, 2011). The government of Hungary intends to allocate the additional tax revenues to healthcare costs in the country (Thompson, 2011). The Hungarian government is expecting to raise over 70 million Euros and is of the opinion that the allocation of the revenue to healthcare is equitable as one minister was quoted as saying 'those who live unhealthy will have to contribute more' (to healthcare costs) (Cheny, 2011).

Other than being a tool which the government is trying to make use of to fight rising levels of obesity in the country, the revenues generated from the levying of a fat tax will be used to pay the cost of healthcare in the country.

4.5 OTHER COUNTRIES CONSIDERING IMPLEMENTATION

The governments of the following countries have considered implementation of a type of fat tax on the consumption of unhealthy and fatty foods:

- Authors have been advocating for a fat tax to be levied throughout the USA (Mozes, 2011; Chouinard, et al., 2007).
- In the European Union, countries like Romania and Finland are considering a fat tax (Leger, 2011; Cheny, 2011).
- The UK is considering levying a fat tax which will be aligned to the fat tax model as implemented by Denmark (Leger, 2011; Campbell, 2011).

- Some authors are advocating for a fat tax to be implemented in India as the levels of obesity are increasing in the developing world (Sinha, 2011).

There is widespread investigation and discussion about the levying of a fat tax taking place all around the world. Obesity was sighted as the number one reason why the fat tax ought to be considered by the abovementioned countries in all the literature reviewed relating to fat tax.

4.6. CONCLUSION

Fat tax has been widely debated in the literature as illustrated above, and arguments as to whether the implementation is justified and whether it will be effective have been put forward. Evidence has been shown with regard to the implementation of fat tax in various countries as well as the reflections of other countries about implementing the tax. The chapter explained the various means by which a fat tax can be levied. The chapter that follows provides a detailed explanation of the research design and methods that have been implemented in order to achieve the purpose of the study.

CHAPTER 5

RESEARCH DESIGN AND METHODS

A survey was conducted in order to answer the questions posed in the study. This chapter explains the research design and methods employed in carrying out the study.

5.1. DESCRIPTION OF INQUIRY STRATEGY AND BROAD RESEARCH DESIGN

The researcher undertook a survey of persons across three main parts of the City of Pretoria, South Africa. In the study, the researcher sought to meet one of the research objectives of the study, namely, to determine whether the implementation of a fat tax would be able to change the consumption habits of consumers. In preparing for the survey to be performed, the following process was followed by the researcher:

- The survey questionnaire was designed. The researcher ensured that the questionnaire addressed the research objective.
- The population groups from which the respondents were to be selected were defined. The study covered population groups with high, middle and low incomes.
- The survey was conducted by the researcher. Individuals were identified, the questionnaire and its related aides were issued to each respondent and he or she was given time to respond to questions posed in the questionnaire.
- The respondents were identified on a convenient basis based on their proximity to the researcher at the time the survey was carried out. This is known as convenience sampling.
- The answered questionnaires were folded and put into an envelope so that the researcher could demonstrate to each respondent that the questionnaire was indeed completed on an anonymous basis.
- The researcher collated the results in Excel processing using the two- and three-point scale. The collated results were sent to a statistician at the University of Pretoria for analysis.
- The data were analysed by the statistician and the results were communicated to the researcher.

- The researcher took the analysed results from the statistician and presented them graphically so that they could be easily understood.
- Based on the results of the findings of the survey, a conclusion was arrived at for the purposes of the study.

A case study inquiry strategy was used in the study. The method of inquiry was motivated by the fact that the assessment of the successfulness of a tax can only be made once the tax has been implemented. Therefore, it was deemed desirable to carry out a historical review of the tax levels that have been levied in the past as well as the consumption that followed so that an understanding of the effects of the levying of the tax can be understood and also illustrated. Furthermore, the method of inquiry addressed one of the key research objectives of the study which sought to determine whether the levying of sin taxes has indeed been effective in changing the consumption habits of the consumers upon which it was levied.

A survey of ordinary consumers in the Pretoria Metropolitan area was undertaken. The survey asked questions that attempted to determine whether consumers' spending choices could be influenced by a fat tax on certain foodstuff that might be deemed as unhealthy. Classifying the inquiry method of the study as a survey is also in line with the definition 'research strategy that involves the structured collection of data from a sizeable population. Although the term 'survey' is often used to refer to the collection of data by means of questionnaires, it includes other techniques such as structured observation and structural interviews' (Saunders, et al., 2009).

The method of inquiry was motivated by the fact that no fat tax had yet been levied in South Africa during the time the study was conducted. Furthermore, the countries that have implemented fat tax have done so very recently (in relation to the date that this study was conducted) and would not have the necessary data that would determine whether consumer habits have changed from the date that the tax was levied.

The following descriptors best describe the broad research design of the study:

- *Empirical research.* The study is classified as an empirical study as the researcher collected and analysed primary data.
- *Exploratory research.* According to Saunders, et al. (2009:592) exploratory research is 'research that aims to seek new insights into phenomena, to ask questions, and to assess the phenomena in a new light'. The research undertaken asked consumers whether a fat tax can change spending and, or consumption habits with regard to food. In addition, the research was intended to seek insight into vice taxes and their ability to influence and, or change the habits of consumers.
- *Primary data* – Saunders, et al. (2009:598) define primary data as 'data collected specifically for the research project being undertaken'. By conducting the survey the researcher gathered information and data specifically for the purposes of the study.
- *Quantitative data* – Saunders, et al. (2009:598) define quantitative data as 'numerical data or data that have been quantified'. The data collection techniques that were used in the study generated numerical data from both respondents and from a detailed search of sales patterns from sin taxes.

5.2. SAMPLING

Sampling was required as the study population is vast and resources (such as time) might not allow the entire population to be surveyed. Sampling techniques would provide the researcher with a range of methods that would allow for a reduction of the volume of data that is needed to be collected. (Saunders, et al., 2009:210). Listed below is a brief overview of the sampling method used in the study.

A survey was conducted in order to establish whether the introduction of a fat tax would lead to changes in the consumption behaviour of consumers in the Pretoria Metropolitan area.

For the survey:

- The target population was identified as the citizens of the Pretoria Municipality in South Africa. The population residing within the municipal boundaries was selected as

the target population because it is subject to the same laws and regulations as the rest of the country.

- The respondents surveyed were stratified into low, middle and high income groups.
- A total sample of 45 respondents was selected for the study.
- A sample of 15 respondents within each of the different income group environments identified was questioned for the survey at random at the convenience of the researcher.
- The selected persons were questioned during September 2012.

The selected respondents were sampled using the convenience sampling method and on an anonymous basis as well. According to Leedy and Ormrod (2010), convenience sampling identifies people who are available for questioning. Respondents were required to fill out the income bracket to which they belong as well as their race. The respondents were distributed over the various income brackets in order to ensure that the results of the survey could be applied to various income groups as well as to the various race groups.

For the purposes of the study, income groups were stratified as follows:

- The low income group area would be the townships surrounding Pretoria. The township of Mamelodi was selected for this population. According to estimates made by Affordable Land & Housing Data (2012) the annual average income per household in the township is R30 000 or less. This makes it one of the lowest earning areas in the City of Pretoria.
- The high income group area would be the suburbs of Pretoria East. In the year 2010, Pretoria East was thought to be the area in South Africa with the highest average household income per month which was estimated at R28 651 which is equal to R343 812 per annum (Marketing Update, 2010). Therefore, it is accurately classified as a high income earning area of the city.
- The middle income group area would be the central city. According to Insight Outdoor (2012), the residents of the City of Pretoria earn an average of R140 000 per annum. The respondents in the city would be classified as the middle income earning group among all the population groups selected for the study as their average income can be

positioned between the income earned in the township and that earned by respondents in the suburbs in the eastern parts of the city.

The research objective of the study was to determine whether the implementation of a fat tax would be able to change the consumption habits of consumers. The units of analysis were as follows:

- All individuals sampled in the study (total population level);
- Individuals in the stratified income groups; and
- Individuals in the geographical population areas (Mamelodi township, Suburbs in the East of Pretoria as well as the central business district of Pretoria).

The limitation of the sampling method used was as follows:

- The study relied on the honesty of the respondents to identify the income group to which they belonged.

5.3 DATA COLLECTION

The data was collected personally by the researcher. It was anticipated that the collection of the data would be over a period of one week.

The researcher administered the collection of data from the various respondents and ensured that the respondents understood the purpose of the study so that the questions could be answered in a manner that would be truthful and honest. Therefore, a participant observation approach was adopted.

A pilot study was conducted before the actual participants in the survey were asked to answer the questionnaire. This was to ensure that any issues that might hamper the data collection activities would be picked up and addressed before the actual survey was carried out. The pilot study was conducted with two individuals who were asked to respond to the questionnaire without any help from the researcher. Once the pilot study was completed, the test respondents were allowed to ask the researcher questions about the

various items in the questionnaire and provide feedback as to whether the questions were easy enough to answer or whether they experienced any difficulty in answering the questions.

The researcher anticipated that collection of this data would take place over a period of between two to four weeks.

The following issues were included as items in the questionnaire:

- The annual income of the respondent;
- Whether the respondent purchases take-away food;
- The respondent's ordinary purchasing habits would be determined by showing (in the questionnaire) take-away food at normal prices compared to a more healthy meal at a comparable price. The consumers were asked to make a choice between the two alternatives. The responses would be used to determine the ordinary spending habits of the respondent; and
- The respondent's spending habits would then be assessed to determine the influence of fat tax (in the questionnaire) by increasing the price of the unhealthy fast food (while the price of the more healthy option was kept constant) in order to establish if the respondent would make the same purchase decisions.

These characteristics of the survey were measured on a two- and a three-point scale with only two options available for the respondent's answer to some questions and three options available in respect of other questions. This was to ensure that conclusive data would be obtained from the survey and that respondents did not have undecided responses to the questions.

The main disadvantage of convenience sampling is that it is only appropriate for research problems which are not complex in nature (Leedy & Ormrod, 2010). However, this did not have an impact on the study as the research question is simple in nature.

The annual income of the respondent would be a vital aspect to the study as it would be important in the data analysis. The spending habits of the different income earning groups

would provide an indication of which income group would be most affected by the tax and, thus, the regressive nature of the tax would be determined.

The respondents' purchasing habits had to be established initially to determine whether the respondents were unhealthy food consumers. The main reason for doing this was so that when unhealthy food was introduced as an expensive option on the questionnaire; relevant data could be extracted showing whether a tax on the unhealthy food would change the consumption habits of people.

5.4. DATA ANALYSIS

The researcher did not require any special equipment or facilities to gather or analyse the data that was collected.

A conclusion on whether the sin taxes would affect the levels of beer consumption was drawn from the data plotted on graphs created from the raw data that were processed.

As part of the survey, respondents were asked to fill in the questionnaire on a random basis. The completeness of the survey data was checked by counting the number of responses that had to be collated for data analysis (the researcher ensured that there were 30 response sheets that would be analysed). The researcher ensured that the data collected was accurate by observing the respondents.

The data collected by means of the questionnaires were summarised according to the number of respondents who selected a particular answer. This enabled the researcher to analyse the data collected to contribute to the results of the survey.

For each question for which the respondent was required to give an answer, the response to the question was analysed. Thus, the researcher was able to identify the answer most frequently chosen by the respondents. In addition, through statistical analysis (aided by a statistician), the researcher was able to identify statistically significant relationships between the answers given by the different income earners and the relationship of this data within different the geographical areas. The p-value was used in this regard.

This method of data analysis was adopted as the researcher believed that it would provide the most valuable analysis of information when the data was analysed. Furthermore, this method is generally adopted in the analysis of data where a scale system is used to illicit responses from respondents in a study.

The researcher anticipated that full analysis of the data would take a period of one week (aided by the statistician). This is because primary data had to be captured, analysed and presented in a suitable manner by the researcher.

5.5 ASSESSING AND DEMONSTRATING THE QUALITY AND RIGOUR OF THE RESEARCH DESIGN

a. Measurement

The survey carried out measured the respondent's responses to questions posed by the researcher. The results of the survey were analysed by the researcher (into basic raw data in a spread sheet). The raw data was sent to the statistician who performed statistical analysis on it. The data processed was used to graphically measure the responses of the respondents to the questions in the questionnaire. The graphical representations were used as measurement units for responses to specific questions. The researcher was then able to calculate the effect of the fat tax on consumer behaviour.

b. Replication:

This study would be easily replicable as the methods followed in the preparation of the survey as well as the techniques that were used in the data analysis are easily followed. Furthermore, the study would create an opportunity for feasibility and impact studies with regard to a fat tax to be carried out by other researchers using this study as a point of departure.

c. Generalization:

The results of the survey are confined to the populations in which the survey was carried out.

A detailed briefing of the respondents took place before the survey was undertaken to ensure that they understood the purpose of the study as well as its research value if the questionnaire was completed correctly in order to overcome any factors which may contribute to incorrect response to the survey.

5.6. RESEARCH ETHICS

The following research ethics were applicable to the study:

- The anti-plagiarism declaration was signed by the researcher binding himself to the anti-plagiarism measures undertaken by the University of Pretoria.
- The participants in the survey took part voluntarily. They were not offered any reward or incentive to participate in the study. The respondents had the right to withdraw from the study without facing any negative consequences.
- At all times during the collection of data and subsequent analysis of the data collected, the physical and psychological well-being of the respondents in the survey was protected.
- The informed consent of the participants was obtained prior to collecting data.
- The confidentiality of the respondent's responses to the questionnaire was ensured. The respondents were not required to divulge any personal information that would link them to the survey.
- Permission was obtained from organisations and religious institutions whose employees and churchgoers participated in the survey.
- The researcher maintained objectivity at all times throughout the study to ensure that data obtained was not falsified or fabricated to meet individual bias.

5.7. CONCLUSION

The research design and methods adopted in conducting the survey were described in this chapter. The research methods produced the results that have been documented by the researcher in chapter 6.

CHAPTER 6

RESULTS OF RESEARCH SURVEY

This chapter presents a detailed analysis of the results obtained from the responses to the research questionnaire in the survey that was undertaken by the researcher in an attempt to answer the following research question posed in Chapter 1:

- Could a fat tax be used by the government to influence or manipulate the consumption of unhealthy foods?

The chapter is divided into two parts. The first part is an overall view of the results of the survey whilst the second part of the chapter highlights the most significant relationships that were identified in the survey. It is important to keep in mind that the survey population resides in three different identifiable areas of the city: a township, the central business district and the affluent suburbs of the east. The results presented below make reference to these three different population groups as there may be significant differences in the responses given by these different population sets. This is explained in the second part of the chapter.

6.1. OVERALL RESULTS OF THE STUDY

6.1.1 General characteristics of the population

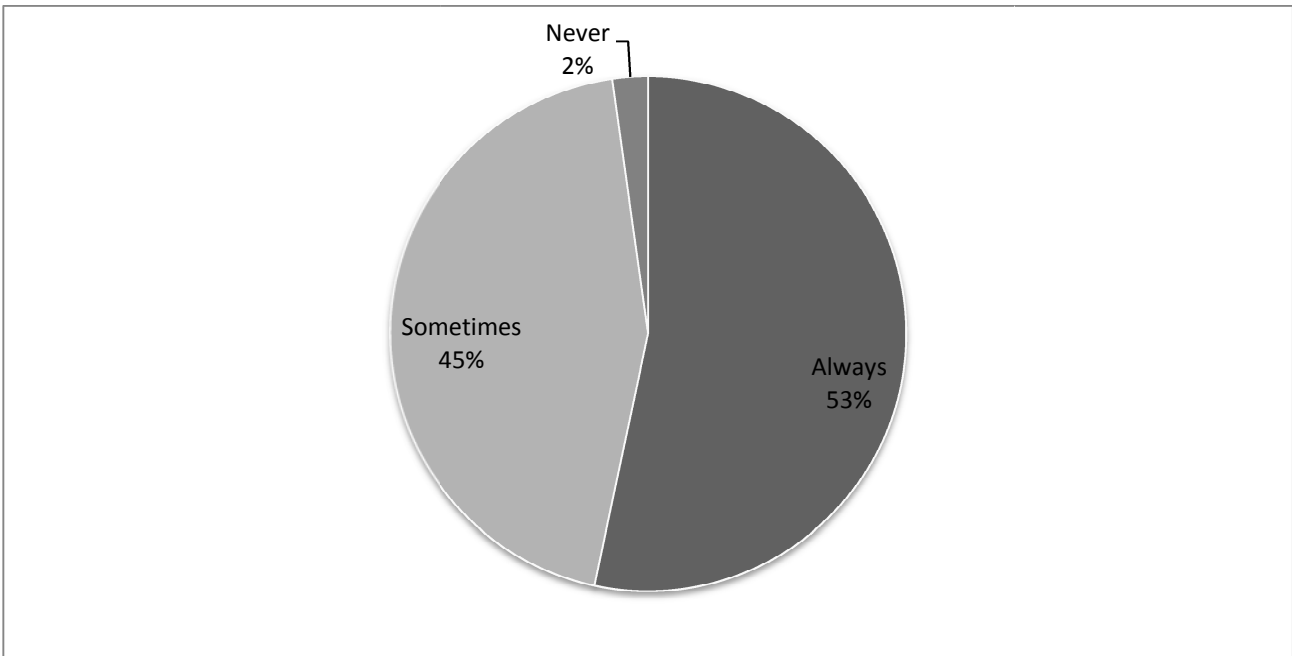
The average age of the respondents who participated in the study was found to be 32 years with a difference of 42 years between the oldest (58 years) and youngest (16 years) respondent. The majority (91% of the total population) of the respondents in the study were between the ages of 16 and 50 years with 9% of the correspondents being older than 50 years. The consumers over the age of 50 years in South Africa represent only 6% of the adult population in the country (UCT Unilever Institute of Strategic Marketing, 2012). The population sampled is, therefore, a close approximation to the age distribution of the consumer population in the country.

The income levels of the population were determined by reference to the answers that were given by respondents. The income groups with the most significant income levels were those individuals who earned Rnil to R3 000 per month (20%) and those persons who earned between R12 001 and R15 000 (22%) per month. Overall, 38% of the population earned between Rnil and R12 000 whilst only 22% earned more than R18 001 per month. The rest of the population (40%) indicated that they earn an income of between R12 001 and R18 000 per month.

6.1.2. Food purchases: price sensitivity

Respondents who participated in the survey were asked whether they took price into consideration whenever they made food purchases. This question was asked in an attempt to determine whether the respondents would be sensitive to price changes. Figure 3 indicates the extent to which respondents take the price of any food item into consideration when buying food.

Figure 3: Percentage respondents sensitive to pricing on food



Only 2% (one person) indicated that they never take price into consideration in the purchasing of food whilst 45% indicated that they take the price sometimes into consideration whilst and 53% indicated that they always take price into consideration when

purchasing food. All the population groups answered the question in a similar manner. It can, therefore, be deduced that a majority (97.78%) of all people take the price of food into account before purchasing food.

This finding is significant for the purposes of the study as the very basis of a fat tax is to levy an additional amount on a product in order to make it more expensive. It is also significant as it highlights the fact that the respondents, in general, are price sensitive. Based on the response, one can assume that the respondent’s purchasing habits could be influenced by an external price factor.

6.1.3 Fast food consumption patterns

Central to the fat tax debate is the fact that the rapid increase in personal income has led to altered diets which are high in fats and sugar (linked to the intake of fast-foods) (WHO. 2012b). The consumption of fast foods by the three different population groups was also investigated. Figures 4, 5, 6 and 7 provide a detailed breakdown of respondent consumption patterns recorded in the three different population groups.

Figure 4: KFC, Chicken Licken, Nandos, Hungry Lion

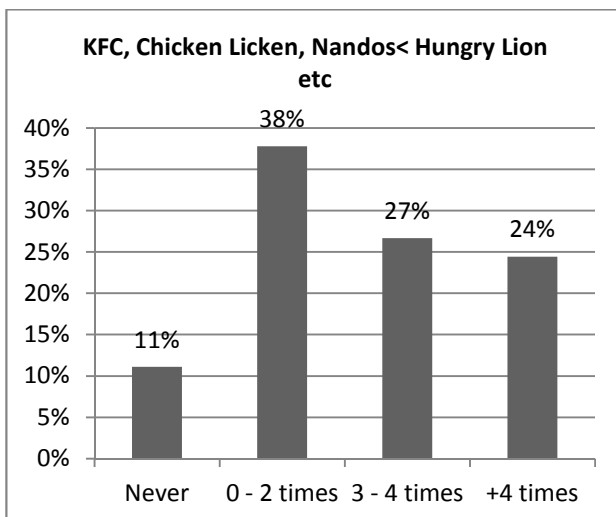


Figure 5: McDonalds, Spur, Steers, Spathlo (street foods)

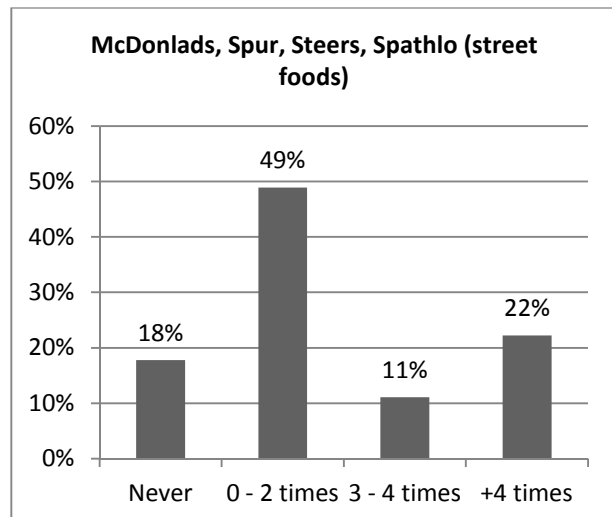


Figure 6: King Pie, Pie City, London Pie



Figure 7: Ready-made foods (Woolworths, Pick 'n Pay)



Figure 4 indicates that on average, nearly two-thirds (64.45%) of the respondents surveyed purchase KFC, Chicken Lickin and Hungry Lion between two and four times a month whilst 24% of respondents indicated that they purchased these products more than four times a month with convenience being sighted as the number one reason why they purchase the chicken products.

The respondents were asked how often they purchase McDonalds, Spur, Steers and other South African street foods like spathlo (bunny chow). 49% of the respondents purchased this type of food less than twice a month (including never) while 22% stated that they purchased the food more than four times in a month (Illustrated in Figure 5).

Ready-made pies have become widely accessible in South Africa today with companies like King Pie having opened more than 290 franchise stores (King Pie, 2012) and Pie City 165 stores (Pie city, 2009). The pie companies view their businesses as quick service food outlets (King Pie, 2012) and not as restaurants. With this in mind, respondents were asked to quantify how often they had pie in a month. Figure 6 is an illustration of the fact that 60% of all respondents indicated that they never purchase pies at all with preference being cited as the most common reason as to why pies are not bought (respondents indicated that pies were only purchased for situations in which there is no alternative as pies were their least favourite fast-food item). Only 13% of all participants indicated that they consume pies more than three or more times per month.

Figure 7 illustrates the respondents' responses to the question 'how often do you purchase ready-made foods?' Ready-made foods have become an increasing necessity in South Africa given the rapid urbanisation of the country which has caused people to focus their time on their jobs and family commitments (Deli Counter, 2012). 60% indicated that they purchase ready-made foods less than twice per month. Of interest is that 38% indicated that they would purchase a ready-made meal more than three times a month.

The observations made above were similar throughout all the population groups with no single population group displaying significant differences to the norm. This means that the results were consistent in all three respondent groups surveyed.

Based on the results above, it is evident that people purchase fast food on a regular basis. Thus they consume food products which are high in energy, fat and salt content on a regular basis.

The questions that followed in the questionnaire sought to establish whether the tendency to purchase foods high in fat, salt and sugar intake can be influenced.

6.1.4. Fatty fast foods versus healthy alternative

The respondents were shown a picture of a cheese burger and fries as option 1 and a so-called 'avocado wrap' with lettuce as option 2. They were asked which meal they would normally purchase at a restaurant. At this stage, the price of the meals was identical and the only difference between the two meals, was the meals themselves.

Figure 8: Respondent preference (initial response: identical pricing)

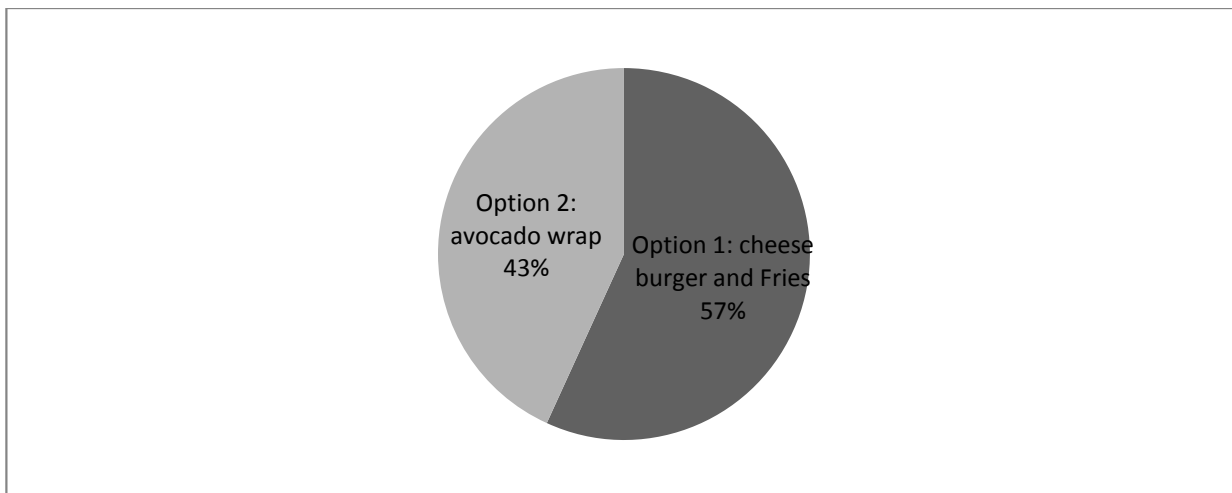


Figure 8 shows that 57% of respondents chose the cheese burger and fries as opposed to the 43% who chose the ‘avocado wrap’ with lettuce. This was similar throughout the three population groups.

Then the price of the cheeseburger was increased (in order to simulate a fat tax) by 20% and the respondents were requested to make a choice between the two options in the questionnaire again. The price of the ‘avocado wrap’ was retained at the levels it was for the initial question posed to the respondents asking them to choose between a cheeseburger and the avocado wrap (thus price of avocado wrap was not increased making the cost of cheeseburger 20% more expensive)

Figure 9: Respondent preference (cheese burger 20% more expensive than avocado wrap)

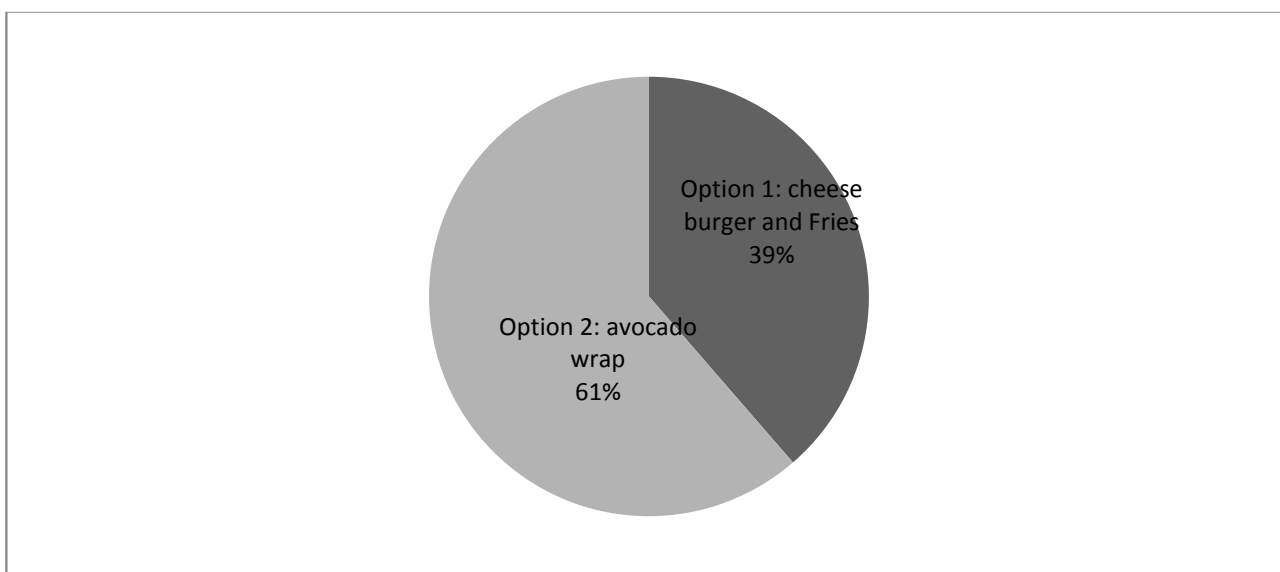
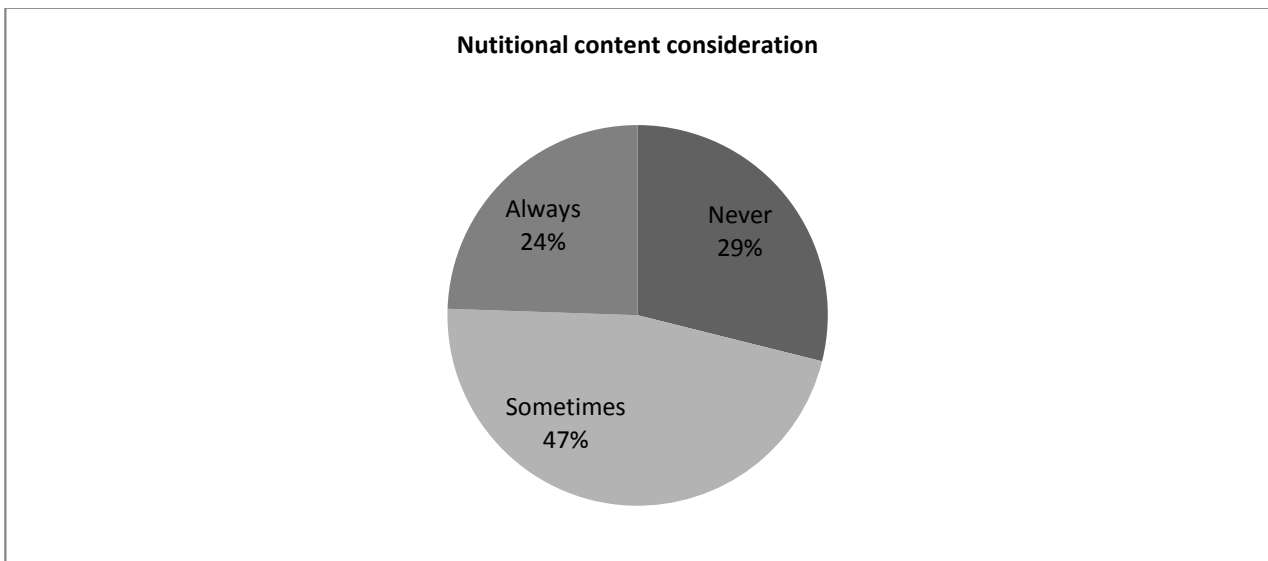


Figure 9 indicates that from the initial responses, 18% of the respondents who participated in the survey were influenced in their choice of food by the price increase as they changed their response from option 1 (cheeseburger) to option 2 ('avocado wrap') as there was an 18% increase in the 'avocado wrap' choice.

Figure 9 indicates that a price differential was able to influence food choice among the respondents as the marked difference in the percentage of respondents who chose cheeseburgers decreased significantly when the price of the cheeseburger was increased with the 20% fat tax simulation.

Finally, the nutritional information for both products was introduced to respondents and after being requested to carefully study the nutritional content, the respondents were asked if their choice of food would be influenced by nutritional content.

Figure 10: When will nutritional information affect food choice (food)



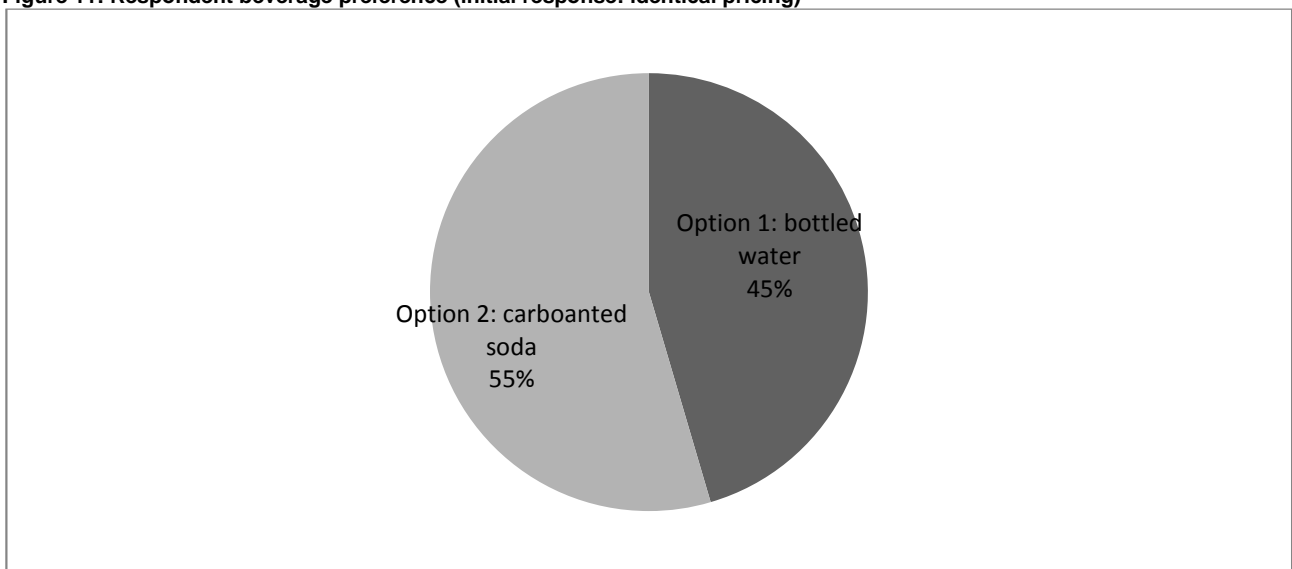
As indicated in Figure 10, a significant total of 71% of the respondents indicated that nutritional content would influence their choice of food when the percentages of those who responded that nutritional content would influence their decision always or sometimes were combined.

6.1.5 Sugary drinks versus healthy alternative

The same approach was followed in an attempt to determine whether the introduction of a fat tax on a carbonated (sugary) drink would deter consumption of the drink.

Initially, respondents were shown pictures of a bottle of water and of a well-known carbonated drink. The respondents were asked which drink they would normally order at a restaurant. The price of both the bottle of water and the bottle of carbonated drink were set as identical.

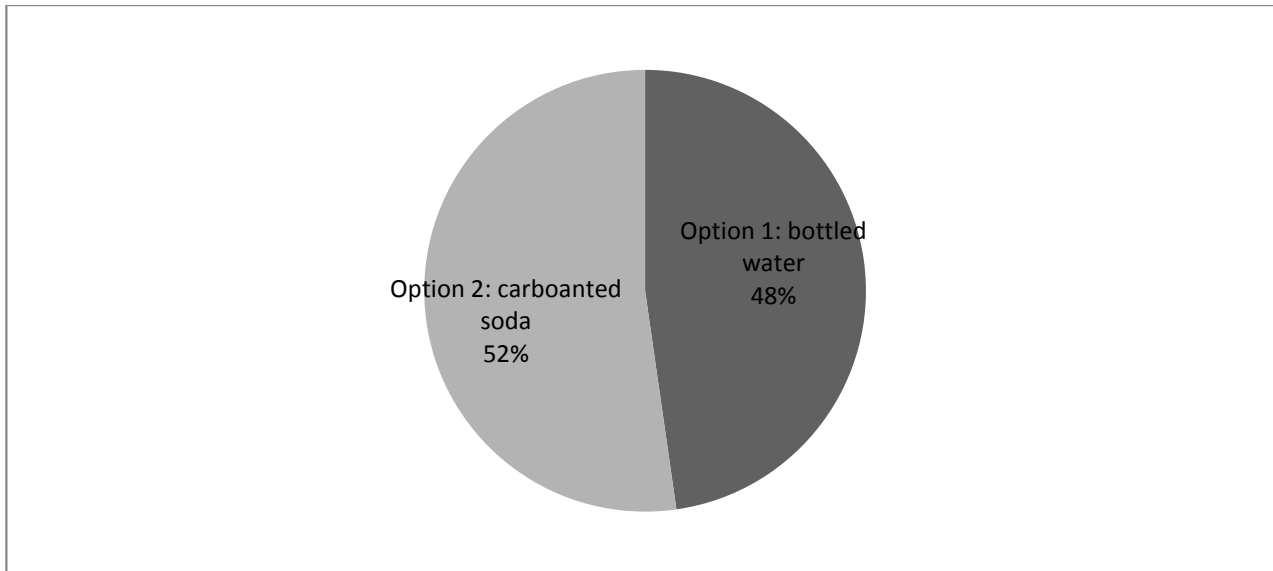
Figure 11: Respondent beverage preference (initial response: identical pricing)



55% of the respondents indicated that they would have a bottle of water as opposed to the 45% who chose the carbonated drink as illustrated in Figure 11.

Thereafter, the price of the carbonated drink was increased by 20% to imitate the effect that a fat tax would have on the price of the carbonated drink. The price of the water was retained at the levels it had been for the first question so that the price differential between the two options is only the difference caused by the levying of a 20% fat tax

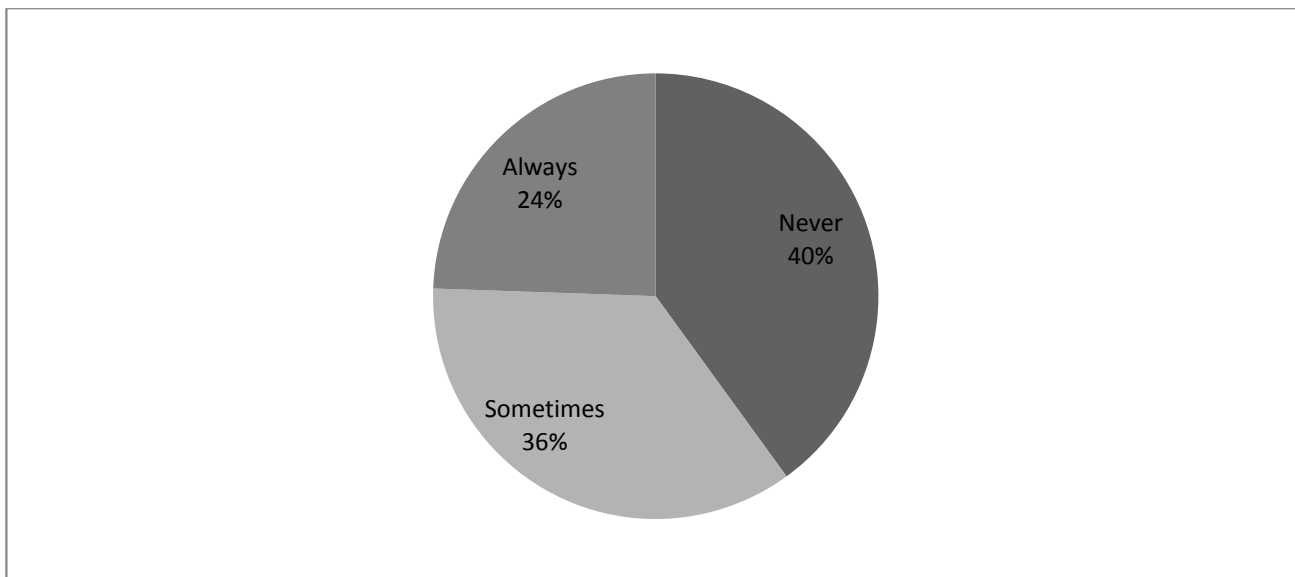
Figure 12: Respondent beverage preference (price of carbonated drink increased by 20%)



As shown in figure 12, only two respondents out of the twenty four who initially chose carbonated drink changed their choice to water. This represents a change in 3% of the population.

Finally, the nutritional information for both products was introduced to the respondent and after being requested to carefully study the nutritional content, the respondents were asked if their choice of food would be influenced by nutritional content.

Figure 13: When will nutritional information affect food choice (beverage)

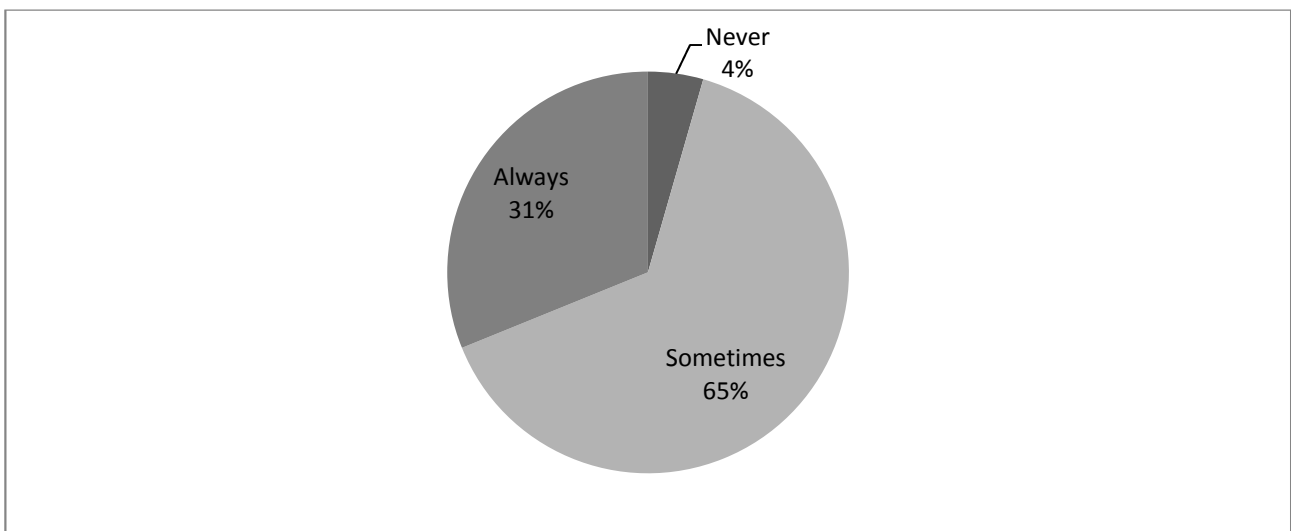


A significant combined total of 60% of the respondents indicated that nutritional content would influence their choice of drink since 36% and 24% respectively responded that nutritional content would influence their decision always or sometimes. On the other hand, 40% indicated that their choice would not be influenced by the provision of additional nutritional information. This is shown in Figure 13.

6.1.6 Assessment of general health

The questionnaire required that the respondents take time to think introspectively to determine their levels of health and answer accordingly. The respondents were asked if they considered themselves healthy. This question was asked of the respondents to determine whether they themselves are aware of their general state of health. Illustrated in Figure 14, is the respondents' response to the question 'Do you consider yourself healthy?'

Figure 14: Percentage respondents who consider themselves healthy

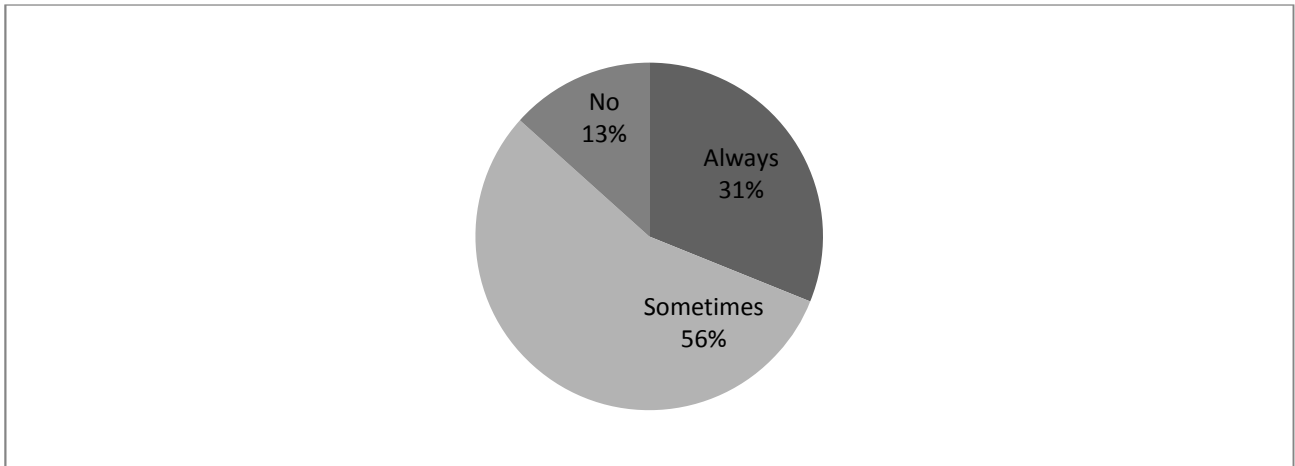


65% of all respondents indicated that they thought that they were healthy sometimes, whilst only 31% stated that they considered themselves as always healthy. Only 4% indicated that they do not consider themselves as healthy.

A similar question read as follows: 'Do you consume a healthy diet?' Figure 15 represents the answers of the respondents to the question. 56% indicated that they sometimes follow a healthy diet, 31% stated that they adhered to a healthy diet at most times whilst only

13% indicated that they did not eat a healthy balanced diet at all (illustrated graphically in figure 15).

Figure 15: Percentage respondents who consider themselves as consuming a healthy diet



The results of the two health-related questions indicate that a significant portion of the population are not as healthy as they ought to be as more than 69% of all respondents showed some doubt as to whether they live a healthy lifestyle (engaging in physical activity as well as sound eating habits) by answering ‘sometimes’ and ‘never’ to the question posed.

According to research, more than 61% of South Africa’s population is classified as overweight or obese (Kerr, 2012). The observed obesity and overweight levels in the country may be related to the poor diet choices made by the respondents.

6.1.7 Macroeconomic analysis

There are opinions that taxing fatty foods is extreme and that governments should first consider awareness programs as well as general educational measures to deal with increasing levels of obesity (Sinha, 2011). When asked if the government is doing enough to ensure that the citizens of the country purchase healthy food, 78% of all respondents indicated that they were of the opinion that the government is not doing enough to ensure that people purchase healthy food.

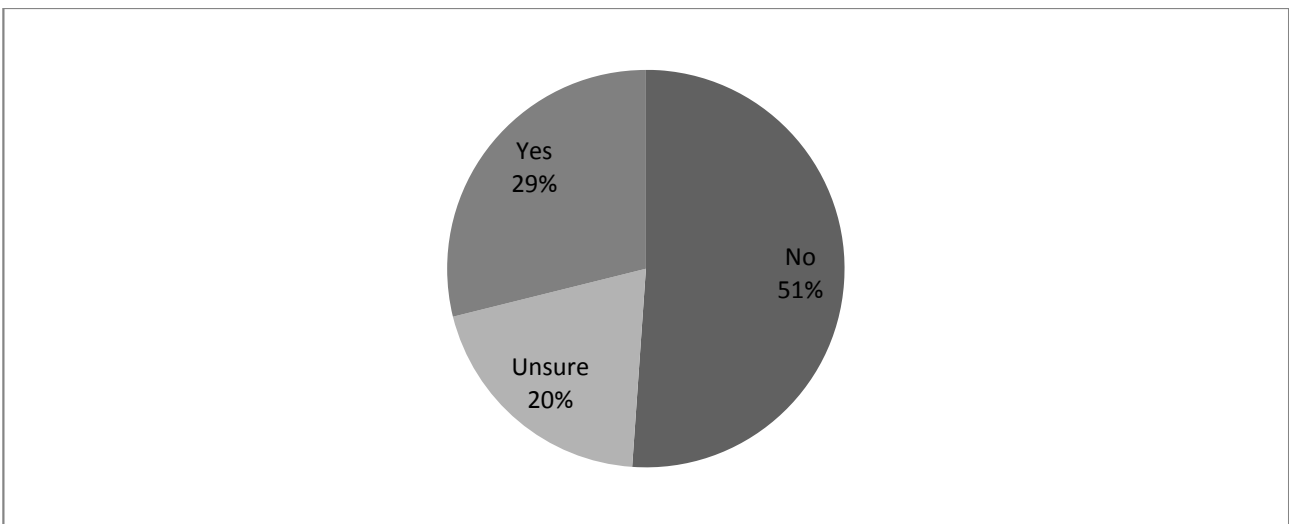
The government guidelines for a healthy diet which have been published in order to encourage people to consume a healthy diet are not accessible to all as a significant majority of the respondents were not aware of the guidelines.

The respondents were asked whether they thought that healthy food is affordable. Seventy one per cent of the respondents indicated that they were of the opinion that some or most of the healthy foods are indeed affordable whilst 29% indicated that healthy food is not affordable at all.

When asked about a fat tax and whether they are familiar with the term, 71% of the respondents indicated that they were not aware of, and had never heard the term 'fat tax'.

The last question asked in the survey was the most direct question relating to the implementation of a fat tax. The basic mechanics and principles of a fat tax were explained to the respondents of the survey before the final question was asked. The respondents were asked whether they thought that the implementation of a fat tax on unhealthy food would deter people from purchasing the food. Figure 16 below illustrates the percentage response obtained.

Figure 16: Would the implementation of a fat tax influence purchasing patterns?



51% of the respondents indicated that they were of the opinion that a fat tax would not deter people from purchasing unhealthy food. Only 29% of the respondents indicated that

they thought a fat tax would succeed in deterring the respondents from purchasing unhealthy food while 20% of the respondents were unsure.

6.2 SPECIFIC RESULTS FROM THE SURVEY

The researcher was able to extract statistically significant results from the study based on three geographical areas in which the study was carried out, namely, the Pretoria central business district, the higher income suburbs in the east of the city as well as the townships of the city. The p-value was used as a measure of the statistical significance of the differences found between responses from respondents in the various geographical areas who were included in the survey.

6.2.1 Statistical analysis: background (significant findings)

The purpose of the p-value is to determine whether there is statistical significance to the responses that have been made by each population group (geographical population).

A p-value of less than 0.05 is an indicator that there is a statistical difference in the responses that were given by the respondents included in the survey. The p-value was calculated for each response that was given. The most significant relationships were, therefore, identified by the p-value that was obtained and are explained below. The researcher has only focused on the responses given by the respondents where a p-value was less than 0.05 as these responses are the most significant for purpose of the study and may give additional evidence in respect of the argument for, or against the implementation of a fat tax.

Firstly, the decision by respondents from a township about which food stuff to buy could be influenced more by the introduction of nutritional information about the food stuff than their counterparts in the central business district as well as the affluent suburbs. Statistically the p-value is 0.01, indicating that the responses obtained from the township respondents is significantly different,

Figure 17: When nutritional content will change food purchase; CBD vs Suburb vs Township (p-value: 0,01)

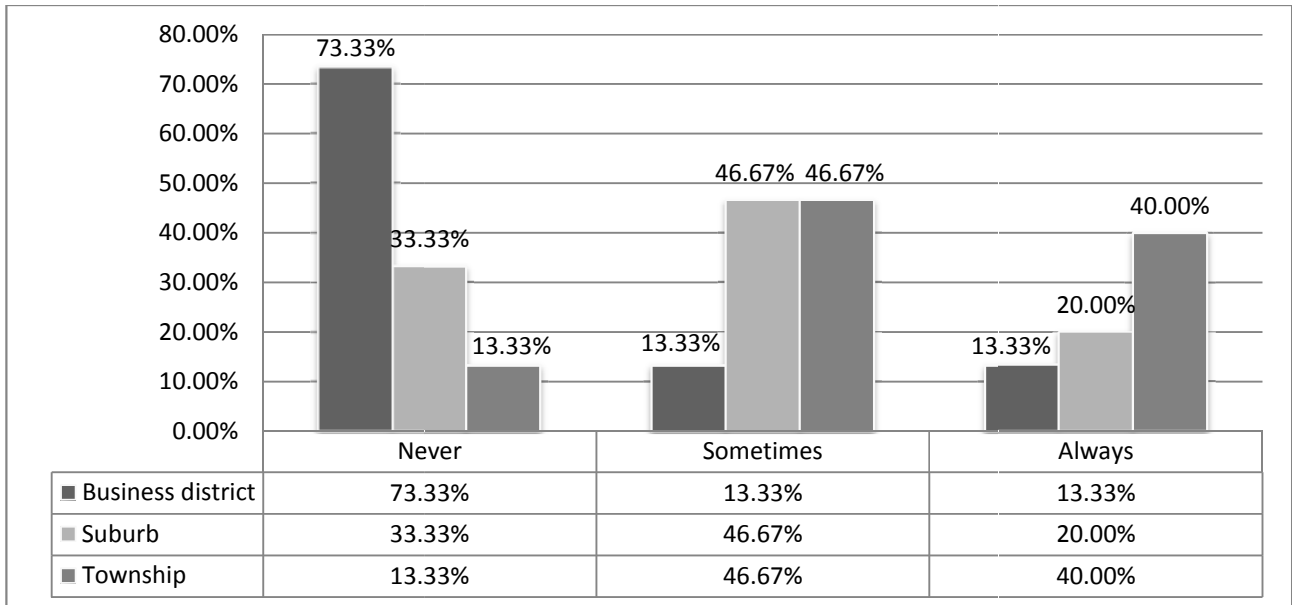
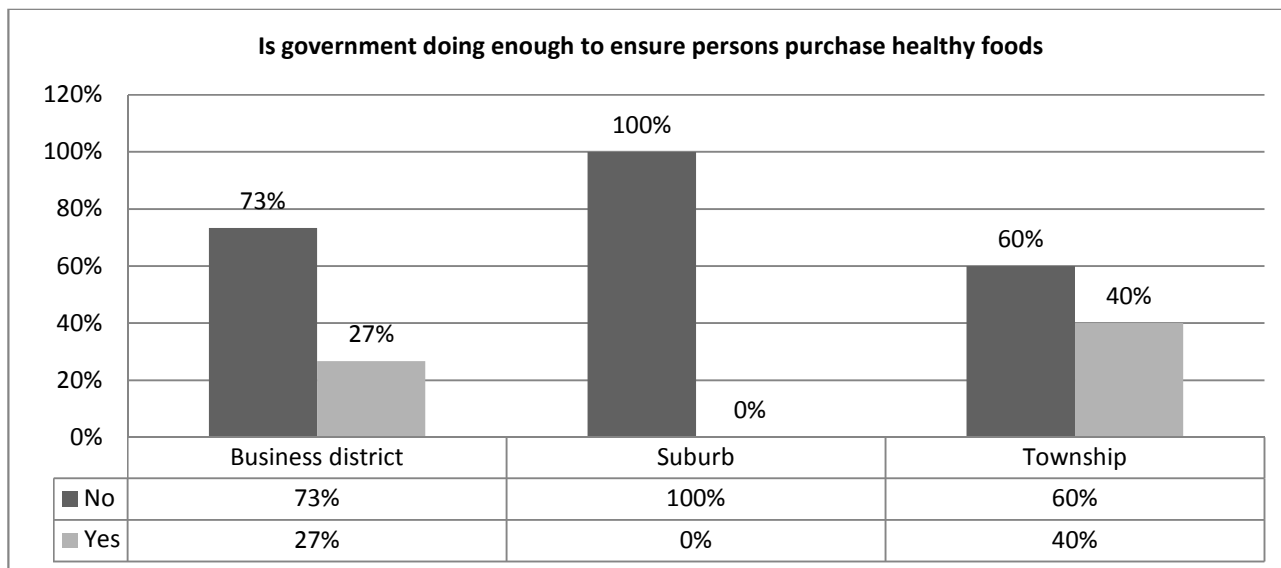


Figure 17 illustrates the finding that respondents from the central business district as well as the eastern suburbs of the city were less likely to be influenced (that is, never) or were sometimes influenced by information regarding nutritional content as opposed to the respondents in the townships who were more likely to be persuaded sometimes or always by nutritional information regarding the foodstuff they were about to purchase. This finding may assist in the direction of efforts to create a strategy around the prevention as well as reduction of the prevalence of obesity.

Secondly, it was established that more respondents in the townships were of the opinion that the government of South Africa was doing sufficient work to ensure that the citizens of the country would purchase healthy food (p-value is 0.02).

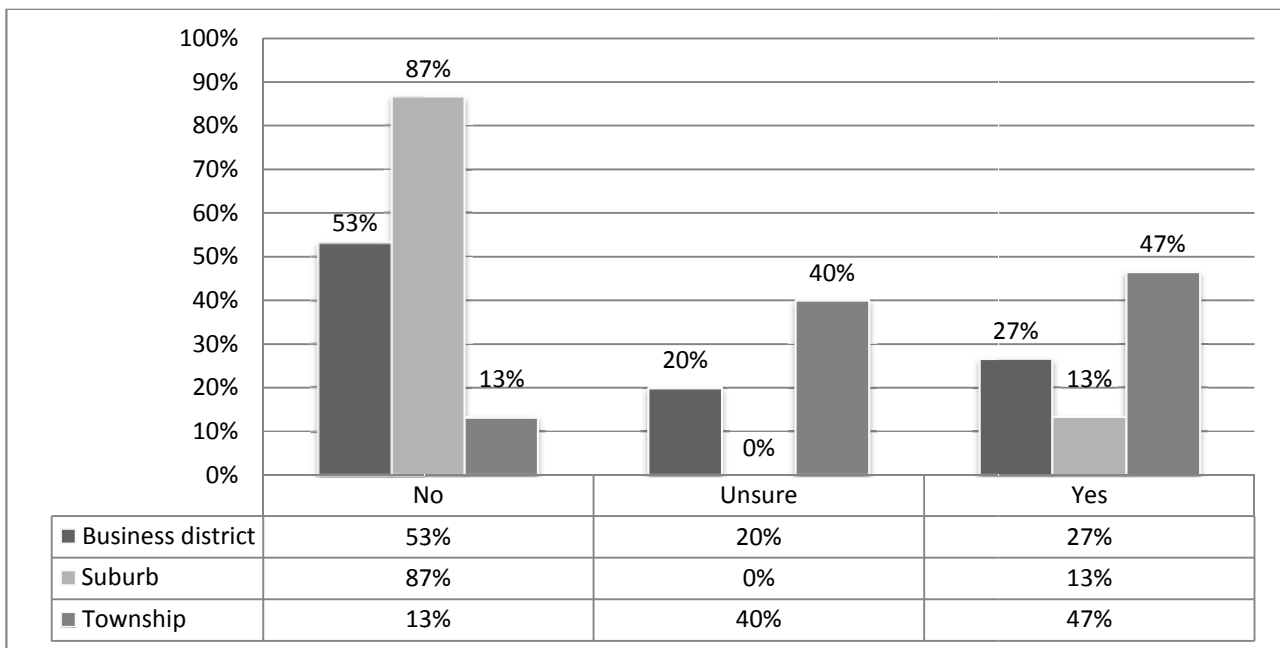
Figure 18: Percentage respondents who think the government is doing enough to ensure people purchase healthy food: a comparison (p-value 0.02)



The majority in all three population groups responded that the government is not taking sufficient steps to ensure that they encourage people to purchase healthy foods (as illustrated in figure 18). However, more respondents in the township were more likely to state that the government is doing enough (according to the p-value calculated) to ensure that people purchase healthy foods. This specific trend can also be used in the formulation of a strategy around the prevention as well as reduction of the prevalence of obesity.

Thirdly, and most importantly, there was a statistically significant relationship between the responses given by the respondents in the three different population groups to the question ‘Do you think an additional tax on ‘unhealthy food’ will deter people from purchasing it?’

Figure 19: Percentage respondents who indicated that an additional tax on 'unhealthy food' would deter people from purchasing it: comparison (p-value 0.001)



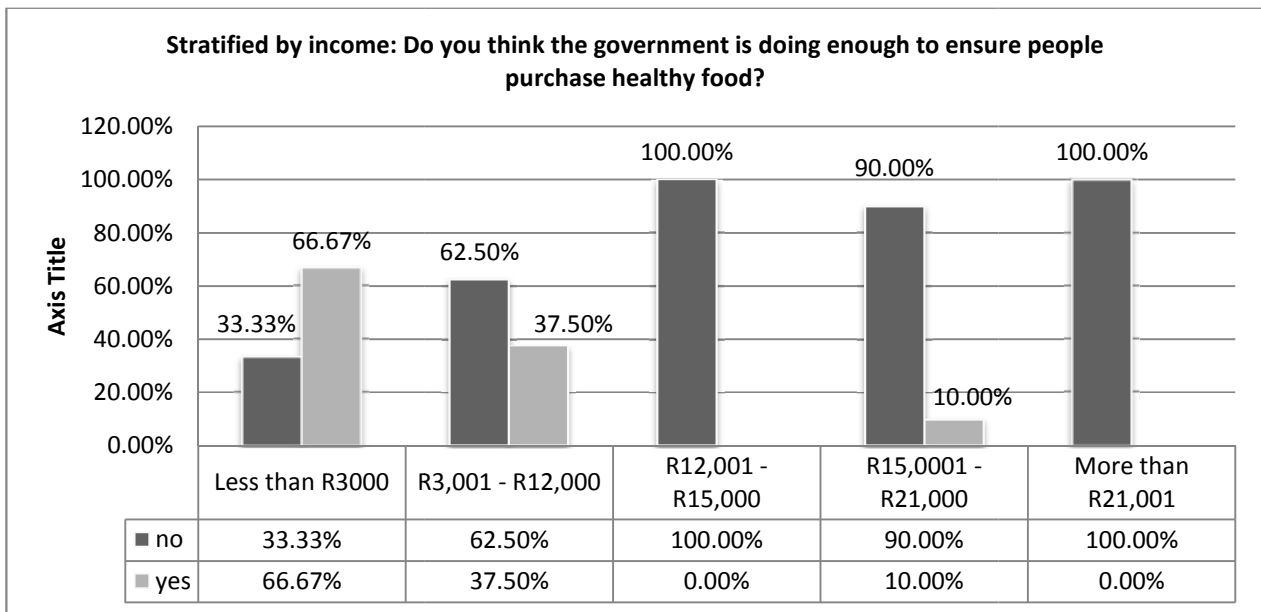
As illustrated in figure 19, 87% of the respondents in the suburb and 73% of the respondents from the central business district indicated that they were either unsure or of the opinion that an additional tax would not deter people from purchasing unhealthy food whilst only 53% of the township respondents were of the same opinion. Most interestingly though is the fact that 47% of the township population indicated that they were of the opinion that the fat tax would be effective. When combined with the 40% response of the unsure group, 87% of the township population were either unsure or thought that a fat tax could be effectively implemented as compared to 13% of the respondents in the suburb and 47% of the respondents in the central business district.

The results were also stratified across the various income groups as defined in the survey. The following groups were used to identify the respondents who participated in the survey:

- respondents who earned less than R3,000 per month (group 1);
- respondents who earned between R3,001 and R12,000 per month (group 2);
- respondents who earned between R12,001 and R15,000 per month (group 3);
- respondents who earned between R15,001 and R21,000 per month (group 4); and
- respondents who earned more than R21 001 per month (group 5).

A significant relationship was found in the manner in which the respondents of the survey answered the question 'do you think the government is doing enough to ensure that people purchase healthy food' and the level of income earned by those people in a month (p-value of 0.001).

Figure 20: Percentage respondents who think the government is doing enough to ensure people purchase healthy food: a comparison between different income groups (p-value 0.001)



The results illustrated in figure 20 clearly show that the higher the monthly income, the more negative the response was to the question posed. This is evident as 100% of both the third and the fifth group as well as 90% of the fourth group indicated that the government is not doing enough to ensure that people purchase healthy food. However, at the lower end of the earning scale (group one and group two) 67% and 38% respectively indicated that government was indeed doing enough to ensure that people purchase healthy food.

This information obtained from the survey and the stratification of the data can also be used in formulating a reaction to the obesity and overweight epidemic in South Africa. The responses obtained from the respondents provide a unique insight into the different approaches which should be formulated in order to reach all population groups because varied responses were received depending on income levels as well as the geographical situations of respondents.

6.3 MAIN OBSERVATIONS FROM THE SURVEY

Based on the analysis of the results above, the following conclusions can be drawn from the survey:

- The majority of the respondents were indeed sensitive to pricing when decisions with regard to food purchase are to be made. This provides some evidence that consumers will be responsive (although to varying extents) to price adjustments on unhealthy food stuff.
- Respondents confirmed that they consumed fast food on a regular basis (on average more than twice a month). As fast foods have been identified by researchers as one of the main contributors to the obesity epidemic (Sinha, 2011), such foods ought to attract a fat tax in order to try to reduce consumption and, thus, the levels of obesity.
- When respondents were given the choice between two food options which are priced exactly the same, a majority of the respondents opted for the less healthy alternative (higher in calories and fat content). The researcher found that when the price of the unhealthier foodstuff was increased, 32% (8 of the 25 respondents who chose the unhealthy option changed their choice to the cheaper option when the expensive option was made even more expensive by 20%). This indicates that an increase in the price of food would have some effect on the consumption patterns of people.
- When respondents were given the choice between two beverages which are priced exactly the same, a majority opted for the carbonated drink instead of the bottled water (the less healthy of the two alternatives presented). The researcher found that when the price on the less healthy option was increased by 20%, only 4% of the 24 respondents who initially indicated that they would purchase the carbonated drink change their mind and opted for the bottled water. This indicates that an increase in the price of sugary drinks is less likely to have an impact on the consumption of those sugary drinks.
- The researcher found, interestingly, that the availability of nutritional information about the foodstuff presented to the respondents would be considered before purchase by at least 71% of all the respondents. This indicates that the availability

of nutritional information about foodstuff is considered when consumers purchase food. This can be used to educate the public about healthy food choices.

- 69% per cent and more of the respondents were somewhat doubtful as to whether they are living healthy lifestyles when they were asked the question 'do you consider yourself healthy?' and 'do you eat a healthy diet'. The responses indicate that respondents are aware of the fact that they could take additional measures themselves in order to live healthier lifestyles in terms of food choices and physical activity.
- The researcher found that more than 70% of the respondents were of the opinion that foods deemed to be healthy were expensive. The same percentage of respondents had also not heard of the term fat tax before the survey.
- Most importantly, when asked if a fat tax would affect consumer consumption patterns (as spelt out in the research objective of the study), only 29% responded that it would do so and 51% indicated that the tax would not affect consumption patterns.
- The same approach cannot be taken in an attempt to fight obesity and overweight across the different population groups as these groups responded differently to questions with regard to nutritional information and the availability of government information regarding a healthy diet.

6.4. CONCLUSION

Chapter 7 to follow provides a summary and a conclusion to the study that was conducted. The researcher summarizes the findings of the survey and comes to a conclusion about the research objectives identified in chapter 1.

CHAPTER 7

SUMMARY OF STUDY AND CONCLUSION

The researcher sought to find answers to the following research objectives:

- To determine whether the implementation of sin tax on alcohol and tobacco was able to reduce or increase the use or purchase of the particular products which are subject to sin taxes by investigating the relationship between the levying of a sin tax and the consumption levels observed.
- To determine whether the introduction of a fat tax will be able to similarly influence the consumption of fatty and unhealthy foods through a survey that seeks to determine whether an additional tax on unhealthy foods will influence consumers to purchase healthier alternatives.

7.1 FIRST RESEARCH OBJECTIVE

In chapter 3 the evidence put forward suggests that there is a negative correlation between the percentage of change in beer sales and the percentage of change in the excise duty levied on beer. The researcher concluded that a sin tax on beer does not change the consumption of beer. It was also established that the effect of excise duties on tobacco had an insignificant effect on the consumption of tobacco products in the country.

Thus, as far as the first research objective is concerned, the conclusion can be drawn that the implementation of a sin tax on alcohol and tobacco has not been able to increase or decrease the use and purchase of the products.

7.2 SECOND RESEARCH OBJECTIVE

A survey was conducted by the researcher in an attempt to determine whether the introduction of a fat tax would succeed in influencing respondents' consumption of fast foods. The results of the survey indicate that a fat tax alone (implemented as the only tool

to regulate or change consumption of unhealthy food) would not have a significant impact on consumers.

51% of the respondents surveyed indicated that they were of the opinion that a fat tax would not be effective as a tool to change or affect the consumption of unhealthy food products. However, there was evidence suggesting that the introduction of a fat tax on fatty food is able to change the consumption patterns in respect of unhealthy foods. One of the questions in the questionnaire required respondents to decide which meal they would purchase in a restaurant. They were given the choice between an 'avocado wrap' and a cheeseburger with fries. The results indicated that when the price of the cheeseburger was increased by 20% (a mock fat tax) as many as 32% of the individuals who had decided to initially purchase the unhealthy cheeseburger opted to purchase the healthier 'avocado wrap'. This indicates that to some extent, consumers are indeed sensitive to pricing when it comes to food choices. This result was also confirmed in the study when 98% of the respondents indicated that they considered the price of food whenever purchasing decisions needed to be made.

More encouraging, was the fact that 71% of the respondents indicated that their food choices would be influenced by the availability of nutritional information in respect of the product which they were about to consume. Should the nutritional content of food be made more readily available, including fast foods, the results indicate that consumers would take this information into consideration before purchasing food items.

Interestingly, respondents in the townships were found to be more likely to be persuaded by the availability of nutritional information than their counterparts in the central business district (CBD) as well as in the suburbs in the east of the city.

According to Sinha, (2011), governments in developing countries ought to ensure that sufficient information is made available to citizens to make them aware of the health implications of obesity as well as how to prevent the condition. In the South African context, the government has established guidelines for the prevention and management of diabetes, hypertension, hyperlipidemia and overweight along with a national food-based dietary guideline (Goedecke, et al., 2006). According to the results of the survey, more

respondents in the townships were of the opinion that the government was taking adequate steps to ensure that people purchase healthy foods. This is due to the fact that the lower income groups in the townships primarily receive healthcare services from public sector health care services whilst the middle to upper income groups receive healthcare services from the private sector (Media Club South Africa, 2012). The lower income groups would, therefore, have increased access to information from the government regarding strategies with regard to health as they would receive these instructions upon visiting a government healthcare facility.

Of note is the fact that fast food is readily available and is perceived to be cheaper in comparison to healthier alternatives. All the respondents who participated in the survey indicated that they consume fast food at one stage or another in each month of the year. 71% of the respondents indicated that they perceive healthy food to be more expensive than unhealthy food.

7.3 FINAL CONCLUSION

Given the significant levels of obesity in South Africa (Kerr, 2012) where 61% of the population is classified as either overweight or obese, the introduction of a fat tax can be substantiated as the levels of obesity need to be decreased. A fat tax could be introduced in South Africa in an attempt to curb the consumption of fatty foods, which lead to obesity, as the survey results indicate that consumers are, to some extent, sensitive to price adjustments. In addition, the findings indicate that 32% of respondents' choice of food changed to the healthier option when the price of the fatty food was increased by 20% (to simulate a fat tax).

However, the introduction of a fat tax alone will not significantly change the consumption behavior of consumers in South Africa. A multi-component approach should be followed to increase the effect of the levying of such a tax.

7.4 RECOMMENDATIONS

Firstly, the South African Government should ensure that nutritional information is made available, perhaps mandatorily, at all food outlets in the country in order to enable citizens to make an informed and educated choice when purchasing any types of food, particularly fast food.

Secondly, the Department of Health has already set guidelines on how to curb obesity and the related diseases associated with being overweight (Goedecke, et al., 2006). However, the results show that people in the townships are more aware of these guidelines than individuals in the CBD and the high income suburbs in the east. The Government should ensure that these guidelines are communicated in private healthcare facilities so that people in the middle and higher income brackets can be made aware of them and, thus, make better health choices.

Therefore, a fat tax on its own will not be able to significantly change the consumption patterns and behaviour of consumers. Any fat tax to be implemented ought to be supported by government interventions, such as increased awareness and legislation regarding the availability of nutritional content upon the purchase of food, especially at fast food outlets and restaurants.

7.5 ADDITIONAL CONSIDERATIONS WITH REGARD TO THE IMPLEMENTATION OF A FAT TAX

7.5.1 Additional revenue stream

Fat taxes have the potential to create a reliable additional stream of revenue for the South African Government (Talbot, 2011). The South African Department of Health is currently in the process of establishing a NHI. The funding requirements of the NHI scheme were documented by Byl (2011) who indicated that the government needs to raise R15 billion over and above the medium-term expenditure framework budget. The source of funding for the NHI scheme has not yet been determined by the Government of South Africa.

7.5.2 National health insurance scheme

Byl (2011) views a 'sin tax' as a possible means of generating the additional income required by government to fund the NHI. Furthermore, increasing the tax on cigarettes and alcohol could and would discourage harmful behaviour and, in turn, improve the population's health. He believes that using sin taxes as a source of funding for the NHI makes sense as the sin taxes would be directly related to the health of the public, and in this way, monies would be generated from the selling of harmful products (harmful to health) to fund the NHI scheme as proposed.

According to Leger (2011) the WHO proposed that its member nations (of the UN) should consider taxing junk foods to encourage people to make healthier food choices. As part of the WHO's strategy to decrease levels of obesity in the world, a fat tax on unhealthy foods is proposed that would be followed by all members. As South Africa is a member state of the UN, the levying of a fat tax ought to be at least considered when the Government drafts an action plan to curb the levels of obesity in South Africa.

The levying of a fat tax can be substantiated by the need for the South African Treasury to raise additional tax revenues to fund the NHI, and in view of the recommendation of the WHO that junk foods should be taxed in an attempt to make people choose healthier food alternatives.

7.6 IDEAS FOR FUTURE STUDIES

The study completed provides an ideal platform for future studies with regard to the implementation of fat tax. Possible studies in future may be conducted on the impact of government food labeling laws and the effect which they can have on consumer purchasing habits. Studies can also be carried out on the possibility of using a fat tax as a means to fund the NHI scheme as proposed by the South African Minister of Health.

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APPENDIX A - DATA COLLECTION INSTRUMENT

FOOD CHOICE

For office use

1. Respondent number	V1																		
2. How old are you in years?	V2																		
3. What is your monthly income?	V3																		
<table border="1" data-bbox="199 891 740 1619"> <thead> <tr> <th>Monthly income</th> <th></th> </tr> </thead> <tbody> <tr> <td>Less than R3,000</td> <td><u>1</u></td> </tr> <tr> <td>R3,001 – R6,000</td> <td><u>2</u></td> </tr> <tr> <td>R6,001 – R9,000</td> <td><u>3</u></td> </tr> <tr> <td>R9,001 – R12,000</td> <td><u>4</u></td> </tr> <tr> <td>R12,001 – R15,000</td> <td><u>5</u></td> </tr> <tr> <td>R15,001 – R18,000</td> <td><u>6</u></td> </tr> <tr> <td>R18,001 – R21,000</td> <td><u>7</u></td> </tr> <tr> <td>>R21,000</td> <td><u>8</u></td> </tr> </tbody> </table>	Monthly income		Less than R3,000	<u>1</u>	R3,001 – R6,000	<u>2</u>	R6,001 – R9,000	<u>3</u>	R9,001 – R12,000	<u>4</u>	R12,001 – R15,000	<u>5</u>	R15,001 – R18,000	<u>6</u>	R18,001 – R21,000	<u>7</u>	>R21,000	<u>8</u>	V4
Monthly income																			
Less than R3,000	<u>1</u>																		
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R15,001 – R18,000	<u>6</u>																		
R18,001 – R21,000	<u>7</u>																		
>R21,000	<u>8</u>																		
4. Do you take price into consideration whenever you purchase food?	V5																		
<table border="1" data-bbox="199 1787 740 1955"> <tbody> <tr> <td>Always</td> <td><u>3</u></td> </tr> <tr> <td>Sometimes</td> <td><u>2</u></td> </tr> <tr> <td>Never</td> <td><u>1</u></td> </tr> </tbody> </table>	Always	<u>3</u>	Sometimes	<u>2</u>	Never	<u>1</u>	V5												
Always	<u>3</u>																		
Sometimes	<u>2</u>																		
Never	<u>1</u>																		

5. How often do you purchase the following types of food in a month

	Never	>2 times	3 – 4 times	More than 4 times	Reason
KFC, Nandos, Chicken Lickin, Hungry Lion	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
Mc Donalds, Spur, Steers, Spathlo (street foods)	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
King Pie, Pie City, London Pie	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
Ready made food (Woolworths, Pick 'n Pay, Shoprite)	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	

V6

Refer to the 'Options' provided in order to answer questions 6 to 11.

V7

6. Which meal would you normally purchase:

Option 1	
Option 2	

7. Taking the price difference into account, which meal would you now purchase?

V8

Option 1	
----------	--

Option 2	
----------	--

8. Would your choice of meals be influenced by the information given on nutritional content?

V9

Always	<u>3</u>
Sometimes	<u>2</u>
Never	<u>1</u>

V10

9. Which drink would you normally purchase?

Option 1	
Option 2	

10. Taking the price into account, which drink would you purchase now?

V11

Option 1	
Option 2	

11. Will your choice of drink be influenced by the information given on the nutritional content?

Always	<u>3</u>
Sometimes	<u>2</u>
Never	<u>1</u>

V12

12. Do you consider yourself healthy?

V13

Always	<u>3</u>
Sometimes	<u>2</u>
Never	<u>1</u>

13. Do you eat a healthy diet?

V14

Mostly	<u>3</u>
Sometimes	<u>2</u>
No	<u>1</u>

14. Are you aware of the guidelines issued by the government for a healthy diet?

V15

Yes	
No	

15. Do you think the government is doing enough to ensure that people buy healthy food?

V16

Yes	
No	

16. In general, do you think that 'healthy food' is affordable?

V17

Most of it	<u>3</u>
Some of it	<u>2</u>
No	<u>1</u>

V18

17. Are you familiar with the term 'Fat Tax'?

Yes	
No	

18. Do you think that an additional tax on 'unhealthy food' will deter people from purchasing it?

Yes	
No	
Unsure	