

**THE EFFECTIVENESS OF THE ALCOHOL LEVY ON DRINKING TRENDS IN  
BOTSWANA: THE CASE OF GABORONE**

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A mini-dissertation submitted in partial fulfilment of the requirements for the degree of Masters of Business Management in Operations and Decision Making at the Mafikeng Campus of the North-West University.

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## **DECLARATION**

I Goitseone Mononi declare that this dissertation is my original work and has never been presented anywhere. Materials and contents used in this study have been disclosed and referenced in accordance with academic writing principles. This dissertation shall not under any circumstances be presented to other institutions without prior consent with the owner.

Student

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Signature

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Date

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## **ABSTRACT**

This study investigates the effectiveness of the Alcohol Levy on drinking trends in Botswana. The primary objective was to find out whether the Alcohol Levy managed to reduce excessive drinking amongst Botswana as per its mandate.

Interviews were conducted using the simple random method. The sample consisted of 70 respondents, of which 49 (70.0 percent) were male and 21 (30.0 percent) were female. Among demographic background factors only gender had a significant statistical association with the effectiveness of the Alcohol Levy on drinking trends. Other factors that were associated with the effectiveness of the Alcohol Levy included level of income, level of education, residential area, frequency of alcohol intake, category of alcohol, overall wellbeing, happiness in private life, drug use, personal budget inflation, and support of the Alcohol Levy. However, other demographic factors such as, age, marital status, number of dependent children and level of education did not have an association with the effectiveness of the Alcohol Levy.

The study found out that the Alcohol Levy has not made a significant reduction in excessive alcohol intake and it has not changed the drinking trends of people as it was envisaged when the Alcohol Levy was implemented. This is due to the fact that the majority of respondents reported the same level of intake as of before the increases. Most of these suggested that the Alcohol Levy should be used together with other measures meant to control excessive intake such as awareness campaigns and others as outlined in the study. A marginal percentage reported that they drink less depending on other factors discussed and realised in the course of the study. It has been recommended by the respondents that indeed excessive alcohol intake is a vice and measures need to be put in place to uproot the dangers. Some of the most highlighting testimonials being: creation of recreational resources for those who are already addicted to get rehabilitated and educational campaigns that will teach people of the serious repercussions brought about by alcohol intake.

## **LIST OF ABBREVIATIONS AND ACRONYMS**

BSE	Botswana Stock Exchange
CSO	Central Statistics Office
KBL	Kgalagadi Breweries Limited
MEC	Marginal External Cost
MPB	Marginal Private Benefits
MPC	Marginal Private Cost
SBH	Sechaba Brewery Holdings
SBL	Sechaba Breweries Limited
USA	United States of America
WHO	World Health Organisation

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# CHAPTER ONE: INTRODUCTION

## 1.1 Background Information

Botswana has a long history of dealing with the issue of alcohol consumption and abuse. Over the past four decades legislation has been brought forth to stress the needs of Botswana society to address alcohol regulation, with regard to excessive alcohol abuse and consumption.

The World Health Organisation (WHO) has confirmed that although alcohol is not a problem itself, the reality of alcohol abuse and consumption leads into much deeper social problems. Various global studies and research coalitions have identified major social issues such as crime, poverty and HIV as those that are directly correlated to alcohol consumption patterns. Many of the primary concerns regarding alcohol in Botswana lie in the fact that alcohol is not just a social product, but also a culturally ingrained substance that has been associated with people before independence (Von Rudloff, 2010). Alcohol production and consumption in Botswana is under constant scrutiny and seen in some circles as encouraging deviant behavior. However, the use of alcohol in tribal and traditional settings persists to hold alcohol to a standard much different from that of other illicit or mind-altering substance. The government and policy makers have had to constantly deal with creating a systematic control for alcohol distribution and consumption, while having to adhere to the fact that drinking alcohol is the norm for half the population of the country (WHO, 2004).

The government is seeking to deter excessive alcohol consumption and abuse. The current President of Botswana believes an economic approach for reducing alcohol consumption is the best possible approach. The Alcohol Levy was introduced in 2008 for this very purpose.

### 1.1.1 Brief Review of the Literature

The Alcohol Levy was implemented by the president of Botswana as way of controlling the high intake of alcohol. It currently stands at 45 percent from the initial 30 percent. The resultant effects of this initiative saw alcohol producers such as Sechaba Breweries Limited increase the prices of their products.

The ultimate impact has been lower sales and profits for the alcohol producers. The Alcohol Levy introduced a reduction of operating hours for liquor outlets and a clamp down on homebrews which were traditionally sold from homesteads. The requirement was that the opaque cartons commonly known as ‘*Shake Shake*’ and traditional brews would be sold from registered and licensed depots.

December is seemingly the customary increase month as the Alcohol Levy reached 45 percent from the initial 30 percent. In December 2013, it went up to 50 percent after a five percent increase. This year, 2014, the government has imposed a further 10 percent on the Alcohol Levy, bringing it to 55 percent. Furthermore, the percentage will now be billed on all production costs of alcoholic products instead of the selling price as before. Imported brands, which are hugely popular in the country, will also for the first time be subjected to the Alcohol Levy.

### **1.1.2 The aftermath of the introduction of the Alcohol Levy**

The result of the existence of the Alcohol Levy to date is that some of the companies in the alcohol industry have lost their value and employees have lost jobs, with Kgalagadi Breweries Limited closing down its Palapye plant in 2012. Former consumers of clear beer who could not afford the higher prices of their favorite drinks are reported to have resorted to cheaper, harmful alternatives.

On the other hand, the Alcohol Levy has not seen a marked reduction in the use of alcohol in the country as originally envisaged. A study conducted by University of Botswana and associated institutions in 2011 found that 60 percent of respondents said they drink the same quantities regardless of the Alcohol Levy and its increases, while 27 percent said that they drink less because of the Alcohol Levy. The reduction of hours, relative to the price increases, has been noted as being more effective at curbing excess consumption of alcohol.

However, the Alcohol Levy has become a huge source of income for Government pet projects. “The Alcohol Levy, as one of interventions to combat harmful effects of alcohol has as of June 2014 collected a cumulative total of P1.441 billion. Government further developed a National Framework for Alcohol and Substance Abuse Treatment which will guide the delivery of

rehabilitation services,” (Khama 2014). While the expectation had been that the Levy Fund would be used for alcohol use and abuse interventions, the Fund has found use in funding the recent Botswana Africa Youth Games and other purposes.

Besides the consumers pockets, the biggest brewer in the country, Kgalagadi Breweries Limited, has been the hardest hit by the existence of the Alcohol Levy. The company, which is owned by SABMiller and listed on the Botswana Stock Exchange as Sechaba Brewery Holdings, has had to innovate constantly to overcome the effects of the Alcohol Levy on its bottom line.

## **1.2 Problem Statement**

The current atmosphere in legislation and regulation in regards to alcohol is at the forefront of Botswana policy making today. There are variations in the understanding of nature and role of “policy” by the people, the government, and the private sector industry of alcohol production.

The government is taxing the drinking population to gain revenue and use some of that revenue to address social problems related to alcohol consumption. Further, the government has decided that a system where education and awareness about alcohol, instead of physically removing alcohol altogether, is the most appropriate means. However, the population and businesses being targeted by the government are contesting that the revenues from the Alcohol Levy are not helping the current state of alcohol abuse and consumption. Therefore, a growing concern has been raised on the effectiveness of the Alcohol Levy and whether the regulation is appropriate for the people of Botswana and the goal of alcohol deterrence.

The Alcohol Levy is currently the subject for debate among regulators, policy makers and policy analysts in Botswana. The reality of the Alcohol Levy is that morally-driven legislation to reduce the consumption of alcohol creates a vague understanding of the current attitudes and relationships the populace of Botswana has with alcohol consumption and what attitudes and methods they believe are appropriate ideologies for proper alcohol regulation. The question is whether a policy that is fiscal in nature can drive the ideology of deterrence and health on alcohol consumption. The purpose of this study is to examine effectiveness of the Alcohol Levy on changing drinking patterns.

### **1.3 Objectives**

- 1) To examine the effectiveness of the Alcohol Levy on changing drinking patterns of alcohol in Botswana.
- 2) To examine how Botswana changed their rates of consumption after the introduction of the Alcohol Levy.
- 3) To provide suggestions and recommendations on how excessive alcohol consumption can be controlled.

### **1.4 Research Question**

Has the Alcohol Levy has seen a marked reduction in the use of alcohol in the country as originally envisaged? Is the reduction of hours, relative to the price increases, been more effective at curbing excess use of alcohol?

### **1.5 Significance of the Study**

The introduction of the Alcohol Levy is a new initiative by the government of Botswana to minimise excessive alcohol intake and social ills brought about by high alcohol consumption. There are few studies that have been conducted to examine the effects of the Alcohol Levy on its intended purpose. Understanding the factors that may be associated with the effectiveness of the Alcohol Levy on drinking trends is particularly important given trends that show alcohol abuse and it's widespread and troubles many people. Research investigating the effectiveness of the Alcohol Levy is vital since it helps to better understand, predict and possibly control, to some extent, the factors influencing alcohol abuse. Appropriate steps can then be designed to facilitate better alcohol usage and behavioral change.

The outputs of this study are, therefore, vital for policy makers, academic, researchers, entrepreneurs and others interested in the topic. The study will also play an important role in adding the much needed literature when other scholars want to develop the topic further.

## **1.6 Format of the Study**

This study is organised as follows:

- Chapter Two is the literature review which commences with a theoretical framework that is introduced and describes how levies affect consumption of commodities using economic models. This in effect will identify studies and models that support or refute the topic under study. The chapter gives different opinions across the globe, regionally and eventually narrowing to the local context.
- Chapter Three provides the methodology which outlines the methods used for the study including instruments such as interviews, sampling techniques, and research design and data analyses.
- Chapter Four presents results.
- Chapter Five discusses the results and what they mean to the overall project and shows their significance to the objectives of the study.
- Chapter Six concludes and summarises the project and gives recommendations both from the literature presented as well as from the with regard to the specific objectives of the study.

## **1.7 Conclusion**

In conclusion chapter one focused on the historic background to the problem, the central argument, aims and objectives in order to gain a snapshot of the effectiveness of the Alcohol Levy on the drinking patterns of alcohol users in Botswana.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

Excessive alcohol consumption contributes to a variety of health and social problems. These range from intentional to unintentional injuries. The effects include lost productivity, absenteeism from work, vandalism and general deviant behavior. Research has proven a direct relationship between excessive consumption of alcohol to most diseases such as liver cirrhosis, gastrointestinal cancer and sexually transmitted diseases. Underage drinking poses to be a threat of life to adolescents' suicide, injuries without intention and general health risks some of which become irrevocable (Lethbridge, 2008).

Many articles have been written on Alcohol Levies throughout the world, the effects on the drinking trends amongst consumers, buyer patterns and the overall consequences on the alcohol industries involved in the particular countries. These effects are dependent on the Levy. In some instances there are no direct linkages between the Levies and behavior relating to alcohol usage.

The review of this literature addresses issues such as the introduction of the Alcohol Levy in Botswana and the extent to which it has changed the drinking trends among Botswana. The main focus of the study is to show these effects. The literature is used to make a comparative analysis on how the Alcohol Levy in Botswana managed to achieve its objectives: to reduce excessive alcohol intake which has been linked to social ills and disorder such as road accidents, immoral behavior, and impoverishing households due to alcohol expenditures.

The review starts with a theoretical framework followed by a wider scope of the background on alcohol levies globally, continentally as well as locally.

### **2.2 Theoretical Framework**

According to the Law of Demand as the price of a good or service rises, the consumption of that good or service falls. This law also applies to alcoholic beverages. However, the degree to which alcohol consumption is influenced by price can be explained by the Price Elasticity of Demand, also referred to as Own Price Elasticity of Demand or Price Elasticity.

Excessive alcohol consumption is regarded as a vice. This is because consumers behave differently after consumption than in the case of other products. This fact is well known to the tax authorities and can be, and usually is, utilised to the disadvantage of the consumers of vices (Hvižd'áková, 2011).

Marshall (1920) states that laws of economics state that the quantity demanded of a product is inversely related to its price. This, therefore, implies that an increment in the price of alcohol will decrease the demand and consumption. Currently in the United States of America alcohol taxes are targeted according to the beverage. That is to say these taxes are targeted according to their categories such as wine, beer and spirits. These taxes are mostly based on the rate of volume per unit and not inflationary adjusted. As the living costs increase they usually remain the same. These are referred to as “nominal” taxes. According to Hvižd'áková (2011) at the state and federal levels, alcohol taxes that are adjusted due to inflation have declined since in the 1950s. Due to this decrease the real value of these taxes from higher levels and the adjusted price due to inflation, has decrease dramatically. This therefore agrees with the fact that changes in taxes, notably increases passes effectively to changes in process.

This review is meant find the relationship between alcohol taxes or prices and outcomes brought about by excessive consumption as a way of coming up with well-informed decisions in using tax as a means of improving the outcomes.

### **2.3 Elasticity and Optimal Taxation of Consumption**

The problem with alcohol occurs because it causes addiction. “An addictive substance is one for which the desire to consume depends significantly on past consumption” (Samuelson, 2005: 94). Besides this, addictive goods are usually price inelastic, which means that their price elasticity is low and the quantity demanded reacts little to changes in price. It is difficult to regulate these goods, because of the substitution among them. If a price is raised for one substance, it can lead to consumption of their substitutes. For instance in the case of alcohol, a rise in price can result in users substituting it with other substances such dagga, cocaine and others drugs capable of bringing about the same effects. This study will indicate if substitutes for alcohol are being used as a result of the introduction of the Alcohol Levy.

During the International Scientific Conference (Young Scientists 2011; Ramsey, 1927) Ramsey stated that a uniform consumption tax is not optimal. He developed the inverse elasticity rule, which states that “the government should levy the heaviest taxes on those inputs and outputs that are most price-inelastic in supply and demand” (Samuelson, 2005: 335). The reason for this lies in the fact that if a product is highly price inelastic, the tax levied on this product will have little influence upon the consumption and production of it. In this way, the government may raise revenue with a small loss of efficiency. As Ramsey states “If any one commodity is absolutely inelastic, either for supply or for demand, the whole of the revenue should be collected off it” because “... for taxing such a commodity does not diminish utility at all” (Ramsey, 1927: 56-57).

## **2.4 Alcohol as a Vice**

Vice is a bad habit with morally bad consequences. It is a repeated action, which humans perform so often that it marks one’s cognition (he/she begins to excuse his/her actions), will and therefore, also character. This kind of human creates a bad habit which is hard to overcome and has a tendency to be repeated. Alcohol is a form of vice products. More concretely, alcohol is present in the deadly sin gluttony, which can be defined as insufficient self-control over food and drinking. It is about receiving pleasure from food or beverages.

In the statement “the worst of the entire multitude did something for the common good” (Bernard Mandeville, 1997:56). Mandeville emphasised that individual vices are beneficial for the economy because they are its driving force. If there were no vices and the society was virtuous, there would be no prosperity.

The state plays two roles in case of taxation of alcohol. On one hand, the state tries to protect its citizens from alcohol’s negative effects. But on the other hand, it also receives revenues from collecting excise taxes.

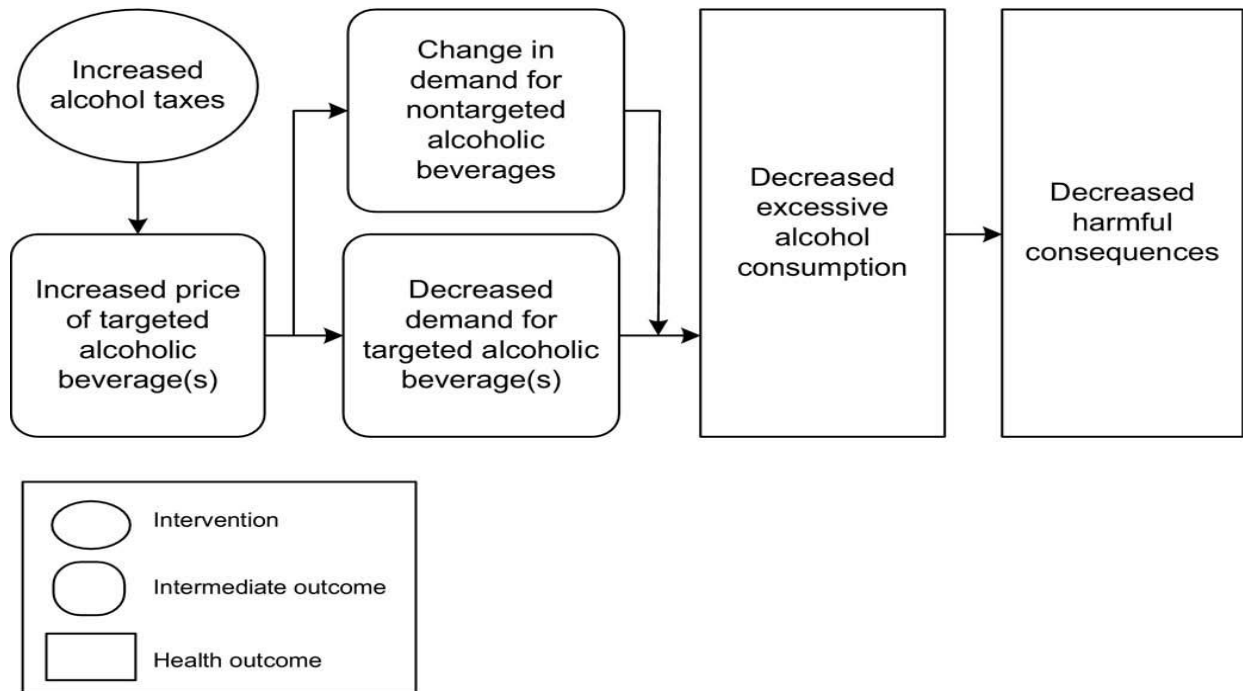
## **2.5 The Conceptual Model**

The conceptual causal pathway is detailed in Figure 1 below, where the increase in price is expected to decrease consumption. The first step in this pathway posits that tax increases will be passed on to the consumer in the form of higher alcohol prices (Young & Bielinska-Kwapisz,

2002). The Law of Demand states that when a price increases, the demand for alcohol will decrease. This will, therefore, result in less drinking of alcohol and hence the ills associated with alcoholism should drop.

This model becomes complicated in countries such as the United States of America where different types of beverages are taxed differently. Beer and wine are taxed at different rates. This means that when tax increases affect one type of alcohol consumers can resort to the other type on the basis of ineffectiveness of tax on that particular category. This explains the fact that excessive alcohol consumption will not reduce because of the substitution. Those categories which have not been affected by the tax may be consumed in greater quantities.

However, this impacts differently on binge drinkers who are known to prefer certain types of alcoholic beverages. Binge drinkers are those who mostly over indulge and are almost addicted to the use of alcohol. Most adult binge drinkers in the United States of America consume beer. This category of drinkers is not entirely controlled by price but consider availability, convenience and taste. Thus, it is not clear whether and how large an effect beverage substitution would likely have on overall alcohol consumption, even when tax increases affect one beverage type only (Okoro&Mehrotra, 2007).



**Figure 1.** Source; Elder et al. (2010): Model for the Relationship between Increased Alcohol Taxes and Decreased Excessive Alcohol Consumption and Related Harms.

The above framework shows clearly that the targeted alcoholic beverage when priced up will reduce the consumption. Subsequently there will be a change in the non-targeted beverage which will in turn reduce the harmful consequences of excessive consumption.

According to the Laws of Demand the relationship between the price of a commodity and the quantity demanded is inverse. This relationship can be influenced by demographics such as age, gender and commodities. A factor that can have influence over the strength of price elasticity across different population groups can be disposable income. Under-age drinkers are groups with less disposable income, this phenomena is expected to react sensitively to changes in price since they have less income that is readily available for use. Changes in alcohol prices in the form of increased taxes should make a direct change to this population group in the form of less intake of alcohol (Chaloupka, 1993).

## 2.6 Price Elasticity of Alcoholic Beverages

Anderson & Baumberg (2006) contend that alcohol prices and consumption rates together with related harms have been studied so much than any other alcohol policy measure. Accordingly if all factors remain unchanged, the laws of demand states that an increase in prices should generally affect level of consumption to negativity. The resultant effect of price change has different consumption effects on different alcohol beverages. For example, a change in price of beer can result in wine becoming a substitute depending on the consumers spending prowess. Anderson & Baumberg (2006) state that in most cases elasticity values vary between countries and their values may change within a country as time passes. “The addictive nature of alcohol implies that the short-term price elasticity of alcoholic beverages is smaller in absolute value than the long-term price elasticity” (Anderson & Baumberg, 2006). In econometric studies the term “price elasticity” is used to express the effect of price changes on alcohol consumption. This follows the same rule that a rise in price generally decreases the consumption volumes, a decrease in price increases alcohol consumption due to availability and spending convenience.

“Alcoholic beverages are said to be price-elastic if the elasticity has an absolute value greater than one, which means that the percentage change in the amount of alcohol consumed is greater than the percentage change in price. If the price elasticity has a value of -1.5, it means that a 1% rise in alcohol price will reduce alcohol consumption by 1.5%. If the elasticity has an absolute value smaller than one, alcoholic beverages are said to be price-inelastic. This means that the percentage change in the amount of alcohol consumed is smaller than the percentage change in price. If the price elasticity has a value of -0.5, it means that a 1% rise in alcohol price will decrease alcohol consumption by 0.5%. Price inelasticity does not mean that consumption is not responsive to price changes. Rather, it means that the proportional change in consumption is smaller than the proportional change in price and only if the price elasticity value is 0.0 will price changes have no effect on consumption” (Baumberg & Anderson 2006).

There are studies that affirm the notion that acute and chronic harm due to excessive intake can be reduced through escalating prices of alcoholic beverages. This can have an effect on drinkers of all ages. There are some who contend that these prices and effects will vary according to the different demographics. Sometimes the young do not have more disposable income than older

drinkers. Binge drinkers can have more disposable income readily available to be used than moderate drinkers (Babor et al., 2010). Increases in prices disproportionately reduce consumption on young people and have greater impact on heavy drinkers than supposedly normal drinkers. Normal drinkers are those that are considered as moderate ones (1 to 2 drinks per day) (Anderson & Baumberg, 2006). Changes in alcohol prices have also been found to influence drinking to the point of intoxication. This study will examine the extent at which price increase of alcohol through the inception of the Alcohol Levy changed the price elasticity of alcohol beverages in Botswana.

## 2.7 A Competitive Private Market for Alcohol

“In modern economies, private sector competitive markets, supported with government monitored secure property rights, use prices determined by supply and demand to choose the mix and quantities produced and consumed of products which have private good properties of rival consumption and low costs of exclusion, and also the choice of production methods. These products include the different alcoholic beverages, foods, housing, clothing, recreation and so forth” (Freebairn 2010).

Figure 2: A competitive market for alcohol

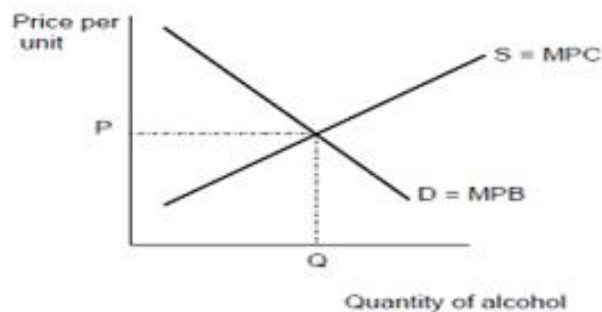


Figure 2: Illustrative Model of a Competitive Market for Alcohol

Source:Freebairn, J (2010) *Special Taxation of Alcoholic Beverages to Correct Market Failures*. University of Adelaide, Australia.

The demand curve D stands for the Marginal Private Benefits (MPB) of the alcohol product to consumers. This curve defines the value that consumers attach to alcohol intake. These include the end results that come after intake of alcohol such as recreation, the social effects, and other sensations, these takes out costs related to the consumption. The well informed usually consider long term-benefits and costs to them also the risks associated with consumption such as the risks to future health and employability (Freebairn, 2010).

Econometric evidence supports the notion that the demand curve for the market for individual alcoholic beverages and for alcohol altogether is sensitive according to the price (Fogarty, 2008). Although there is a wide range of reported estimates of the own price elasticities of demand for the broad categories of beer, wine and spirits, and for alcoholic beverages as an aggregate, almost all are significantly negative, and most are in the inelastic zone. The supply curve in a competitive market represents the marginal private cost (MPC) of producing the product. These include the capital, labor materials and other resources necessary to produce alcohol.

As noted from other studies a tax imposed on either the seller or the buyer can reduce the consumption of a product. It remains to be seen through this study how this imposition results in prompting consumers to a substitute product likely to bring the same social benefits as discussed from the above Figure 2.

This result is straight forward for a closed economy context, but in reality alcohol beverages markets involve exports and imports. With international trade it is important to distinguish whether the tax is on a consumption base, with imports taxed and exports exempted, or a production base, with imports exempt and exports taxed. Basing on externalities associated with domestic consumption, the focus is on a consumption base. A consumption based tax initially collected from producers (as currently and for reasons of low costs) will have similar long run comparative static effects on quantity, price and distributional effects as a consumption based tax initially levied on domestic consumers. For competitive model with no market failures, the reduced consumption effects of a tax on consumption also would mean a loss of economic

efficiency. The quantity reduction effect of a tax on alcohol and the efficiency loss will be greater the more elastic is the demand.

The following subsections focus on potential market failures on the demand side of the private market for alcohol. In the context of Figure 2, the market failure can be represented as the MSB curve being to the left of the MPB curve. For simplicity no market failures are assumed on the supply side, so that  $MPC = MSC$ .

## **2.8 Lack of Information as a Market Failure**

It is assumed that consumers who buy alcohol are fully informed about the decisions they may take about their rates of consumption, their drinking habits and the consequences of alcohol intake, more especially the effect of alcohol on their health. Knowledge of these should be of use in the future in the form of costs and employability. Individuals respond differently to alcohol depending on their mood, genetic and other characteristics. Because of these differences in response to alcohol, it is easy for people to doubt these assumptions.

Given that information about the links between alcohol consumption today and future health, employability and other outcomes have public good properties of non-rival consumption and high costs of exclusion, market forces alone will provide too little of this information. A first best solution is for government to fund the provision of information on the links between alcohol consumption and longer term behavior, health, employability and other outcomes. This includes funding the underlying research and direct information provision and education of consumers. Government also could improve the information available to consumers by investing in the skills and advice provided by the primary health care sector and by monitoring and regulating the advertising of alcohol. There seems to be compelling evidence that the magnitude of adverse future effects and the risks of excessive alcohol consumption habits forming are much greater for younger people, and this has led many governments to regulate against alcohol consumption below a certain age.

Specific taxes on alcoholic beverages are a less direct and a blunter instrument compared with information provision and regulations on youth consumption. A tax falls on all consumption of

the product regardless of whether it is consumed by the informed or the uninformed, and very high rates would be required to drive consumption for youth to zero.

## **2.9 Other Costs of Excessive Alcohol Consumption**

It has been found in studies that moderate drinking of 1 to 2 standard drinks results in positive outcomes such as higher life expectancy and less psychological stress. Indulging in more than standard drinking brings in private costs which are individual targeted and dependent on personal consumption choice.

Some of the costs are borne by third parties as external costs and are excluded from the private market decision. Splitting the costs of excessive alcohol consumption, such as those reported in Collins and Lapsley (2008), into private and external costs is controversial. Costs borne externally will include motor vehicle accidents, law enforcement, fighting between family members and reduced or low productivity in the labor market. External costs mean that the MSB include the MPP less the Marginal External Cost (MEC), with  $MSB < MPB$  for excessive alcohol consumption. The neglect of MEC in private market decisions means that the levels of consumption of alcoholic beverages resulting from private market decisions are greater than a social optimum, with an efficiency cost. Alcohol intoxication is well recognised as a disproportionate contributor to road accidents, with costs associated with the loss of life, the medical and other costs of injury, damage to property and extra policing.

Some countries, such as Australia, have come up with special taxes to fight alcohol and alcohol-related harms. They have adopted more targeted interventions and devised policies that were more specifically in addressing the problem. These included regulations against drunk driving, advertising the dangers and costs of drunk driving and investments in road safety and public education on the negative aspects of drunk driving.

Excessive consumption of alcohol encourages some people to engage in criminal activities to a greater extent than they would otherwise have done. While criminals bear some of the costs of their misbehavior as internal costs, most of the costs of alcohol induced criminal behavior falls on other people. The general community has to meet the costs of the additional resources allocated to law enforcement.

One of the costs of alcoholism is lower labor market outcomes associated with higher absentee rates, higher unemployment, earlier retirement and lower productivity and wage rates (Collins and Lapsley, 2008, Preventive Health Task Force, 2009). Initially most of the lower labour market return is borne by the individual as a private cost or reduction in personal income. The lower gross labour income means both a fall in disposable income as an internal cost to the alcohol consumer and a lower contribution of taxation revenue. Since this lower tax contribution to government revenue means a combination of less government services for the general population and higher tax rates than otherwise, a portion of the lower labour remuneration associated with alcoholism is passed on as an external cost to others.

While Collins and Lapsley (2008) state these costs are borne by employers, employees directly and explicitly lose from earlier retirement and higher unemployment. There are a number of studies (for example, Barrett, 2002, and Hirschberg and Lye, 2004) showing an inverted U relationship between wage rates and alcohol consumption, which is consistent with the argument that excessive consumption results in lower promotion and wage rates.

A controversial debate on what to include in the external costs of excessive alcohol consumption (and also consumption of tobacco, illegal drugs and excess food consumption leading to obesity), and the magnitude of the external costs, concerns whether the focus is on the family or the individual (see, for example, Crawford, et al., 2008). If a family focus is taken, with the implicit assumption that individuals making decisions are fully cognizant of the preferences and effects of their decisions on all family members, any spill-over costs of excessive alcohol consumption by one person on others in the family are internal or private costs. For example, the costs of physical and verbal abuse of spouses and children, of lower available disposable incomes for other family members and of extra family time devoted to the care of the alcoholic would be regarded as internal costs taken into account by the rational family utility maximising consumer of alcohol. By contrast, if the focus is on the individual, and with some supporting evidence that some individuals under-weigh, or even ignore, some to all of the effects of their decisions on the utility of other family members, a relatively high proportion of the costs of abuse of other family members, of reduction in family income and even some of the costs of higher morbidity and mortality become external costs borne by other family members. Clarke (2009) supports this view, while Manning et al. (1989) lean towards treating intangible costs to family members as

internal costs. While taking an aggregate society perspective the truth likely falls between the two extreme perspectives.

## **2.10 Effects of Changes in Alcohol Prices and Taxes**

Alcohol is one of the commodities that have attracted a lot of research from different disciplines and backgrounds such as from the economic perspectives. As consumer goods alcohol stands in for the same consumer behavior shown in other goods by the consumers. The most basic outcome for any consumer behavior is that, other things being equal, demand for any consumer good falls when the price of that good rises. Most research conducted on alcohol reach the same conclusions. Therefore, the rise of taxes for alcohol should affect the consumption rates.

What should possibly make consumers more responsive to alcohol prices should perhaps be the health outcomes associated with excessive intake. Research conducted in the 1980s (Cook 1981; Cook and Tauchen 1982) examined the relationship between alcohol tax rates and health outcomes in the form of traffic fatalities and liver cirrhosis. Therefore, it is vital to measure how the consumption of alcohol falls when prices increase.

## **2.11 World Trends in Alcohol Consumption Levels**

It has been observed that consumption of alcohol in the world markets has remained almost constant over the past two decades. This is different when it comes to developing countries because of increasing intake (Jernigan et al., 2000). Botswana is no exception when it comes to countries which have had an increasing consumption. Available information predicts that there are close to three-quarters of a million deaths associated with alcohol usage (WHO, 1996). Estimations show that there are 3-4% diseases related to alcohol to the global burden of world diseases (Murray and Lopez. 1996).

Most developed countries have adopted a policy of extensive public health education. These public education strategies include measures such as reducing intake among heavy drinkers, overall consumption and reducing harm where irresponsible consumption cannot be prevented (WHO, 2004).

Countries worldwide have come up with strategies to address problems related to alcohol with most countries adopting emphasis on education, reducing availability and demand through having very limited hours of operation, enforcing the law and provision of treatment and care for those already affected. As in the Australian National Drug Strategy, many policies, including the WHO European Charter and the United States and Canadian strategies, orient a national effort by establishing a framework for their communities and alcohol and drug control agencies, and encouraging its adoption. Some national strategies, such as those of the United States of America and Canada, attempt to include all drugs (including illicit drugs). This may sometimes reduce the focus on alcohol. However, there are significant educational and program advantages in considering drugs from a generic point of view.

## **2.12 World Health Organization**

The World Health Organization (WHO) has tasked itself with reducing both the morbidity and mortality caused by the misuse of alcohol. The Organisation is committed to strengthen its global actions against misuse. The WHO has adopted a strategy that is free and accommodative according to the standards and ways of life for any particular country. The strategy includes controls on price and availability; minimum purchase ages; legislation to restrict driving under the influence of alcohol; restricting promoting, marketing and advertising of alcohol; public education and awareness programs and primary health care and community based interventions (WHO, 1996). These strategies have been adopted by the Botswana government through implementing all of the above. Although the strategies are in place, there are still cases of excessive consumption of alcohol.

## **2.13 Changing Patterns of Alcohol Consumption in Nigeria**

In Africa, Nigeria ranks as one of the top countries with excessive alcohol consumption. Restrictions to curb this are more lax than in other countries which have adopted the strategies prescribed by the WHO.

Alcohol has been linked to and traced back to almost the origins of mankind. Alcohol in Africa, as in many places world-wide, is associated with different socio-cultural activities that extend beyond the last ten thousand years (Smart, 2007). The consumption has been considered

acceptable, especially when drunk without intoxication in Africa and other parts of the globe. The most common categories of alcohol: wine, beer, spirit and other fermented alcoholic beverages, were drunk in traditional societies. Some of these beverages are still used in this modern era for different purposes. In Africa these and other alcoholic beverages such as palm wine, were consumed for pleasure soon after brewing or tapping (Odejide et al,1999; Odejide, 2006) and were rarely traded in the market (WHO, 2002).

Alcoholic beverages have been used for years globally with different cultural notations. Excess consumption was not widely tolerated in many societies while few communities permitted it (Willis, 2006). For example, abuse attracted negative sanctions as recorded in the biblical Old and New Testaments (Seller, 1985; 1987). Alcohol was consumed at almost all ceremonies including cultural festivals, chieftaincy enthronements, child dedications and even funerals (Oshodin, 1995).

Alcohol did not only play the role of fostering social cohesion as people drank locally brewed beverages together in groups. According to Korieh (2003), it was also a tool for 'imperial control' and a revenue source for Western Traders. It was also used by 'traditional rulers' to exert power over their subjects (Bowdich and Willis, 2006:5). With colonisation and the influx of western cultures, alcoholic beverages from western countries became readily available to old and young, male and female, on a commercial basis.

In recent decades, the pattern, quantity and reason for consumption are changing rapidly, especially among the youth (Chikere & Mayowa, 2011). This has resulted in an increased burden of alcohol-related problems, estimated to exceed those relating to tobacco consumption. Alcohol misuse can result in death of the user (and non-users, due to drunk driving and other related accidents) and often disability in early years among young people (Jernigan, 2001).

It is important for this study to interrogate the effects of the Alcohol Levy in Botswana and examine if indeed the Alcohol Levy changed the drinking trends of Batswana, and whether it has impacted on the associated problems.

## 2.14 Alcohol Consumption and Trends in Botswana

According to the Central Statistics Office (C.S.O) in collaboration with The Botswana Household, Income and Expenditure Survey (HIES 2004), it is reported that 20.5% of the urban population expenditure was spent on alcoholic drinks. The Botswana Steps Survey on Chronic Disease Risk Factor Surveillance (BSSCDRFS, 2007) estimates show the recorded and unrecorded adult per capita consumption (3- year average) for Botswana was 8 litres of pure alcohol per inhabitant, this was above the regional average of 7 litres as observed by World Health Organization (WHO), Global Status Report (GSR2004). Those abstaining among the adult population for Botswana was estimated to be 53.5 % (37.0% for males and 63% for females). The percentage of current drinkers is approximately one fifth of the adult population. Of those who consume alcohol, more than half (54%) are binge drinkers (i.e. they consume more than 5 drinks in a single day), much of it in the form of *bojalwa* or *khadi*- home-brewed alcohol that is invariably cheaper than Western-type beverages. The latter includes Chibuku, a brand name for industrially produced thick sorghum beer that is sold in waxed cardboard cartons, popularly known as ‘shake shake’. It is often sold alongside home brews.

McDonald and Molamu (1999:73-86) observed that in the post-independence period from 1966 onwards, the output of the industrially produced alcoholic beverages increased markedly and a variety of products flooded the markets. KBL and many independent entrepreneurs established a fairly sophisticated distribution network that ensured that these products were readily available even in remote areas. This was achieved through decentralizing distribution through the establishment of depots in near-by villages.

Harmful use of alcohol is recognised as a major risk factor for health problems in Botswana. The Botswana National Strategic for HIV/AIDS 2003-2009 and Substance Abuse and Drug Trafficking Strategic Plan 2003-2007, found that alcohol is a key socio-cultural factor driving the HIV/AIDS pandemic. It has been realised that alcohol contributes proportionally to the growth of HIV/AIDS as people engage in casual sex without protection due to slow coordination and lack of rationality caused by excessive indulgence.

## 2.15 Conclusion

It is apparent from the conceptual framework of the elasticity and optimal taxation of consumption that addictive goods such as alcohol are usually price inelastic, which means that their price elasticity is low. Therefore, quantity demanded is not usually controlled by price. This is part of what the study tends to test in the case of Botswana: to demonstrate if other factors such as substitutes products came into effect. Did consumers switch to drugs and cheaper types of alcohol?

From the literature different types of alcoholic beverages such as beer, wine and spirits are taxed at different rates in countries such as Australia. This is not the case in Botswana where the Alcohol Levy is charged across board regardless of beer type. It should be noted that Botswana is unusual in that traditional beer is also produced commercially and charged the same Alcohol Levy rate as clear modern beer.

The model of a competitive market for alcohol shows that the Marginal Private Benefits of alcohol can lead to consumers valuing the social, recreational, taste and other sensations gained, therefore deducting any costs of alcohol consumption. This has been represented by Figure 2 from the literature, which prompts the researcher to find out whether in Botswana, regardless of the high Levy costs associated with alcohol, the consumption remained constant or whether consumers valued recreational and other sensations gained from drinking.

The questionnaire for this study includes the socio-economic variable on education to test how informed and far-sighted individuals react to the price escalations of alcohol as opposed to the poorly educated as perceived by the model of a competitive market for alcohol. Information provided by part of this literature wherein countries that have enacted an Alcohol Levy as a control measure to excessive alcohol, use these models in many forms for example, Alcohol by Volume (ABV) where the Levy is charged as per the alcohol content represented in the product. The higher the alcohol content the higher the price. This will consequently motivate the manufacturers to produce alcohol with lower contents.

Most of the literature presented above comes from different countries. The Alcohol Levy in Botswana is a relatively new policy which prompts researchers to make comparative analysis with those who have long introduced it. It is in the interest of this study to find out if Botswana

has a constructive Alcohol Levy that benefits both the seller and the buyer. The literature has demonstrated that whereas alcohol is a vice it also contributes immensely to other countries in terms of proceeds collected from the Levies. Whereas this has been argued by different scholars this research looks at an in-depth analysis of the introduction of the Alcohol Levy in Botswana with particular attention to its effects and how it was implemented.

Lacking from the literature that stands as an intention for this study is to find the modus operandi implemented with regards to the Alcohol Levy in Botswana and the standard procedures. This in effect will give a clear and systematic policy for governing the Alcohol Levy in Botswana.

## **CHAPTER THREE: METHODOLOGY**

### **3.1 Introduction**

In examining the effectiveness of the Alcohol Levy on changing drinking patterns of the Alcohol Levy in Botswana, it is vital to use the methodology that is relevant to social behavior. Both qualitative and quantitative methods are very much useful in determining how one variable effect in to the other. In this study the Alcohol Levy comes as an independent variable whereas the society's reaction to the inception is dependent. The results therefore will determine the extent at which the Alcohol Levy effects in changes of drinking patterns. It is for this reason that the study utilised both the qualitative and quantitative methods so as to achieve the main purpose. The qualitative method has been used to determine the opinions and attitudes of the society. This is mainly due to the subjectivity that is related to human behavior. The integration of the two methods used in this study is elaborated in the research design.

### **3.2 Research Design**

Both qualitative and quantitative methods have weaknesses that to some degree are compensated for by the strengths of the other. Quantitative research design is very well suited to establishing cause-and-effect relationship, to test hypotheses and to determining the opinions, attitudes and practices of a large population, whereas qualitative research design is a systematic in-depth understanding of human behavior and the reasons that causes such behavior. It is characterised by free-ranging, open-ended questionnaires among a limited number of respondents. It is primarily an exploratory and/or a motivational technique. It is used to gain and provide insights into the problem or develop ideas or hypotheses for potential quantitative research (Burn & Grove 2005).

The descriptive survey design was considered appropriate for this study because it provides quantitative or numeric description of some fraction of a sample selected from the population by asking relevant questions that address some unknown aspects of the population. The quantitative method allowed collecting the data from respondents in a numerical format, to exercise objective judgment, to achieve a high level of reliability and validity (Burn & Grove 2005). However, both quantitative and qualitative methods were used to archive a degree of comprehensiveness that neither approach, if used alone, cannot archive.

### **3.3 Research Instrument**

The research instrument is a tool (for example survey, questionnaires or scales) designed to obtain data on a topic of interest from research subjects (Neuman, 2004).

With respect to this particular study, the data collection was done using a 22-item self-administered questionnaire, which solicited information on demographic and background characteristics of respondents, measures of personal wellbeing, frequency of alcohol use, and attitudes towards the Alcohol Levy. The questionnaire was distributed among 70 respondents. Each section of the survey consisted of items to which respondents would indicate on a scale the extent of their agreement or disagreement with each statement. The last section consisted of free-ranging, open-ended questions which solicited perceptions on the subject matter. Respondents were asked to indicate on a scale of zero to 5 how their drinking trends have been affected by the Alcohol Levy. Zero represented the lowest level of impact and 5 represented the highest level of impact. For the purpose of analyses, those who indicated 3 or more were regarded as reflecting responses of those who were affected by the Alcohol Levy, while those who indicated 2 or less were regarded as reflecting to varying degrees, responses of those who were essentially not affected by the levy.

### **3.4 Sample Selection**

In statistics and quantitative research methodology, a data sample is a set of data collected and/or selected from a statistical population by a defined procedure and generalised to the population (Burn & Grove 2005). The sample was selected using a purposive or convenience sampling technique because the technique is both the easiest random sample to understand and it is utilised in selecting cases with a specific purpose in mind (Neuman, 2004). The selected sample was checked to ensure that it included both male and female respondents, as well as younger and older alcohol users within the unit.

The sample consisted of 70 respondents, of which 49(70.0 percent) were male and 21 (30.0 percent) were female. Out of 70 who indicated their age, 78.7 percent were categorized as young (18 -35 years), and 21.3 percent were categorized as old (36 years and above). Many respondents (45.4 percent) had three or five dependent children, 34.4 percent had one or two dependent

children while 19.4 percent had no dependent children. Most of respondents (66.7 percent) were single while the remainders (33.4 percent) married. Respondents' educational background included 70.8 percent with a university qualification, 14.6 percent with a Secondary qualification and 14.6 percent with qualifications below a Secondary qualification (i.e., Junior Certificate or lesser qualifications). The majority of respondents (87.5 percent) were citizens compared to 12.5 percent of non-citizens. The majority of respondents (76.0 percent) reported that their drinking trends had been affected by the introduction of the Alcohol Levy. Only 24.0 percent of respondents reported that their drinking trends had not been affected by the Alcohol Levy.

### **3.5 Data Analysis**

In statistics, data analysis refers to the phase that includes classifying, coding and tabulating information need to perform qualitative or quantitative analyses according to the research design (Burn & Grove 2005).

The SPSS package for the social sciences was used to perform the descriptive statistical analyses, the t-test, the analysis of variance and the correlation analysis (Norusis, 1999). The alpha level of statistical significance was set at 0.05 for all types of statistical analyses (Stevens, 1996). A bivariate analysis was conducted to investigate the individual distributions, nature, strength and direction of associations between background variables, and attitudes towards the Alcohol Levy. For each variable a chi-square test was used to assess the association between the variables.

### **3.6 Ethical Considerations**

The researcher made sure that all information collected through this research would be treated with utmost confidentiality and all participants were assured of that before responding to the questionnaire. Each participant was free to take part without any coercion as they were allowed to sign an informed consent form before they could answer the questionnaire. The researcher ensured that there was no preconceived bias before administering the interviews. The ethical considerations during evaluation included: informed consent, voluntary participation, confidentiality and anonymity.

### **3.7 Reliability and Validity**

In research, reliability can be considered as consistency (Neuman, 2004). Does the instrument consistently measure what it is intended to measure? It is not possible to calculate reliability. However, there are four general estimators that are normally used. These include:

- a) Observer Reliability: the degree to which different raters/observers give consistent answers or estimates.
- b) Test-Retest Reliability: the consistency of a measure evaluated over time.
- c) Parallel-Forms Reliability: the reliability of two tests constructed the same way from same content.
- d) Internal Consistency Reliability: the consistency of results across items, often measured with Cronbach's Alpha. For this particular study observer reliability was used to substantiate the degree of reliability from the answers of the respondents.

Validity is the extent to which an instrument measures what it supposed to measure and performs as it is designed to perform (Neuman,2004).It is rare if nearly impossible, that an instrument be 100% valid, so validity is generally measured in degrees as a process. Validation involves collecting and analysing data to assess the accuracy of an instrument. There are numerous statistical tests and measures to assess the validity of quantitative instruments.

However, for this particular study only pilot testing/pretest was utilised to test the validity of the instrument.

### **3.8 Conclusion**

The descriptive survey design was considered appropriate for this study because it provides quantitative or numeric description of some fraction of a sample selected from the population by asking relevant questions that address some unknown aspects of the population. However, both quantitative and qualitative methods were used to archive a degree of comprehensiveness that neither approach, if used alone, cannot archive.

## **CHAPTER FOUR: EMPIRICAL FINDINGS AND INTERPRETATIONS**

### **4.1 Introduction**

The purpose of the study was to find out the effectiveness of the Alcohol Levy on changing drinking patterns of Batswana. Four sets of factors were investigated to determine whether any variable in each set had an association with the impact of the Alcohol Levy on the drinking trends. The factors included: (1) socio-demographic background variables, (2) socio-economic background variables, (3) measures of personal wellbeing and (4) personal coping strategies. The analysis began with an examination of the extent to which four socio-demographic background variables were associated with impact of the Alcohol Levy on drinking patterns. The variables included: (1) gender, (2) citizenship status (3) age-group and (4) marital status.

Among the socio-demographic background variables investigated, only gender had a significant association with impact of Alcohol Levy on drinking trends ( $p=0.000$ ). Males were more likely to affirm being affected by Alcohol Levy compared to their female counterparts. Table 1 shows that 63.3 percent of males were affected by the Alcohol Levy compared to 16.3 percent of females.

**Table 1: Percentage Distribution of Respondents by Impact of Alcohol Levy and Socio-Demographic Background Variables**

Dependent Variable	Impact of Levy on Drink Trends		Significance		
	Impact	No Impact	Chi Squared	DF	P-Value
<b>Gender</b>			53.973	4	0.000
Male	63.3	6.1			
Female	16.3	12.2			
Total	79.6	18.4			
<b>Citizenship</b>			0.155	2	0.926
Citizen	71.4	14.3			
Non-Citizen	8.2	4.2			
Total	79.6	20.4			
<b>Age Group</b>			16.319	2	0.697
Young	63.2	12.2			
Old	16.3	4.2			
Total	79.6	20.4			
<b>Marital status</b>			9.857	4	0.063
Married	24.5	8.2			
Single	55.1	10.2			
<b>Total</b>	79.6	20.4			

All other demographic variables did not have a statistical association with ( $p > 0.05$ ). With respect to citizenship, although the percentage of citizens who felt affected by the Alcohol Levy (71.4 percent) was higher than the percentage of non-citizens who were affected by the Alcohol Levy (8.2 percent), there was no significant relationship between citizenship and the Alcohol Levy on drinking trends ( $p = 0.194$ ).

Table 1 shows that, the percentage of respondents in the youngest age group who were affected by the Alcohol Levy (63.2 percent) was higher than the percentage of old aged respondents (16.3 percent) who were affected by the Alcohol Levy. However, there was no significant relationship between impact of Alcohol Levy and age group ( $p = 0.697$ ).

The percentage of married respondents who were affected by the Alcohol Levy (24.5 percent) was higher than the percentage of single respondents who felt affected by the Alcohol Levy (55.1 percent). However, there was no significant relationship ( $p = 0.063$ ) between marital status and impact of the Alcohol Levy on drinking trends. Differences in impact of the Alcohol Levy were not due to whether respondents were married or not.

In conclusion, gender was the only socio-demographic variable that had a significant statistical association with impact of the Alcohol Levy. The study found that, males were more likely to report being affected by the Alcohol Levy than females. The observed percentage differences in impact of the Alcohol Levy among alcohol users were not due to their citizenship, their age-group and their marital status.

## **4.2 Socio-Economic Background Variables**

The study examined the extent to which five socio-economic background variables were associated with impact of the Alcohol Levy on the drinking trends. The variables included: level of education, socioeconomic status and number of dependent children.

Only three socio-economic variables had a significant relationship with impact of the Alcohol Levy ( $p < 0.05$ ). The variables included: (1) income level, (2) level of education and (3) residential area.

Results show that there was a significant relationship ( $p=0.000$ ) between impact of the Alcohol Levy and income level. With respect to monthly income, 42.9 percent of respondents who earned medium-level salaries were affected by the Alcohol Levy compared to 24.5 percent of those with the lowest income and 12.2 percent of those who earned the highest salaries.

Table 2 shows that, there was a significant relationship ( $p=0.000$ ) between impact of the Alcohol Levy and level of education. The percentage of respondents with University qualification (57.1 percent) who reported being affected by the Alcohol Levy was higher than those with Secondary qualification (12.1 percent) followed by those with JC or below (10.2 percent).

**Table 2: Percentage Distribution of Respondents by Impact of Alcohol Levy and Socio-Economic Background Variables**

<b>Dependent Variable</b>	<b>Impact of Levy</b>		<b>Significance</b>		
	<b>Impact</b>	<b>No Impact</b>	<b>Chi Squared</b>	<b>DF</b>	<b>P-Value</b>
<b>Income Level</b>			50.569	6	0.000
Low	24.5	4.1			
Medium	42.9	8.7			
High	12.2	6.1			
Total	79.6	20.4			
<b>Level of Education</b>			48.289	8	0.000
University	57.1	14.3			
Secondary	12.2	2.0			
JC and Below	10.2	2.0			
Total	79.6	20.4			
<b>Number of Dependent Children</b>			15.975	12	0.192
One or Two	4.1	0.0			
3 to 5 children	48.9	14.3			
6 or more	30.6	0.4			
Total	79.6	20.4			
<b>Residential area</b>			12.840	6	0.046
High	14.3	0.0			

Medium	42.9	12.2			
Low	22.4	6.1			
	79.6	20.4			

There was a significant relationship between impact of the Alcohol Levy and type of residential area ( $p=0.046$ ). Results show that 42.9 percent of respondents who lived in middle class residential area were most likely to affirm being affected by the Alcohol Levy, followed by 22.4 percent of those who lived in low class residential areas and by 14.3 percent of those who lived in high-class residential areas.

With respect to number of dependent children, 48.9 percent of respondents with three or five children were most likely to affirm being affected by the Alcohol Levy compared to 30.6 percent of those with six or more dependent children and 4.1 percent of those with one or two children. However, there was no statistical association ( $p=0.192$ ) between the number of dependent children that respondents had and impact of the Alcohol Levy. The differences in the proportion of respondents who were affected by the Alcohol Levy were not due to whether respondents had a child or not.

In conclusion, the above analyses show that, out of four socio-economic background variables investigated, three variables had a significant association with impact of the Alcohol Levy on drinking trends. The variables included: (1) income level, (2) level of education, and (3) residential area. The observed percentage differences in impact of the Alcohol Levy among alcohol users were not due to their number of dependent children.

**4.2 Measures of Personal Wellbeing**

The analysis examined the extent to which five measures of personal wellbeing were associated with impact of the Alcohol Levy. The factors included: (1) frequency of alcohol intake, (2) category of alcohol, (3) overall wellbeing, (4) happiness in private life and (5) expenditure on alcohol before the Alcohol Levy was introduced.

Four measures of personal wellbeing had a statistical association with the impact of the Alcohol Levy on drinking trends ( $p < 0.05$ ). The variables were: (1) frequency of alcohol intake, (2) category of alcohol, (3) overall wellbeing and (4) happiness in private life.

There was a statistical association between frequency of alcohol intake and impact of the Alcohol Levy on drinking trends ( $p = 0.045$ ). Table 3 shows that 71.4 percent of respondents who used alcohol frequently were more likely to report being affected by the Alcohol Levy compared to 10.2 percent of those who rarely use alcohol. Those who used alcohol frequently were more likely to be affected by the Alcohol Levy than those who rarely use alcohol.

There was a statistical association between category of alcohol and impact of the Alcohol Levy on drinking trends ( $p = 0.000$ ). Table 3 shows that 63.3 percent of respondents who used cheap alcohol beverages were more likely to affirm being affected by the Alcohol Levy compared to 18.4 percent of those who used expensive beverages. Those who enjoyed cheap alcohol beverages were more likely to be affected by the Alcohol Levy than those who used expensive beverages.

**Table 3: Percentage Distribution of Respondents by Impact of Alcohol Levy & Measures of Personal Wellbeing**

<b>Dependent Variable</b>	<b>Impact of Levy</b>	<b>Significance</b>			
		<b>No Impact</b>	<b>Chi Squared</b>	<b>DF</b>	<b>P-Value</b>
	<b>Impact</b>	<b>No Impact</b>	<b>Chi Squared</b>	<b>DF</b>	<b>P-Value</b>
<b>Frequency of Alcohol Intake</b>			9.775	4	0.045
Hardly ever	10.2	2.0			
Most of the Time	71.4	14.3			
Total	79.6	20.4			
<b>Category of Alcohol</b>					
Expensive	18.4	2.0	48.281	4	0.000
Not Expensive	63.3	14.3			
Total	79.6	20.4			
<b>Overall Wellbeing</b>			10.021	4	0.040
Good Health	57.1	14.3			
Poor Health	22.4	4.1			
Total	79.6	20.4			
<b>Happiness In Private Life</b>			9.775	4	0.045
Happy	71.4	14.3			
Not Happy	10.2	4.0			
Total	79.6	20.4			

<b>Expenditure on Alcohol before the levy</b>			18.816	2	0.534
100 to 300	53.0	4.1			
400 and above	26.5	14.3			
Total	79.6	20.4			

There was a statistical association between overall wellbeing and impact of the Alcohol Levy on drinking trends ( $p=0.000$ ). Table 3 shows that 57.1 percent of respondents who enjoyed good health were more likely to affirm being affected by the Alcohol Levy compared to 24.4 percent of those who suffered poor health. Those who enjoyed good health were more likely to affirm being affected by the Alcohol Levy than those who suffered poor health.

There was a statistical association between happiness in private life and impact of the Alcohol Levy on drinking trends ( $p=0.045$ ). Table 3 shows that 71.4 percent of respondents who were happy in their private life were more likely to affirm being affected by the Alcohol Levy compared to 10.2 percent of those who were not happy in their private life. Those who were happy in their private life were more likely to affirm being affected by the Alcohol Levy than those who were not happy.

Results show that, those that used between P100-P300 were more likely to affirm being affected by the Alcohol Levy (53.0 percent) compared to those who used P400 or above (26.5 percent). However there was no statistical association between expenditure on alcohol before the Alcohol Levy and impact of the Alcohol Levy on drinking trends ( $p=0.534$ ).

In summary, out of five measures of personal wellbeing, four variables had a significant association with impact of the Alcohol Levy on drinking trends. These were: (1) frequency of alcohol intake, (2) category of alcohol, (3) overall wellbeing and (4) happiness in private life.

### **4.3 Measures of Attitude towards the Alcohol Levy**

The analyses examined the extent to which five measures of attitude towards the Alcohol Levy were associated with the impact of the Alcohol Levy. The factors included: (1) drug use, (2) impact on personal budget, (3) knowledge of the Alcohol Levy, (4) support of the Alcohol Levy and (5) price after the introduction of the Alcohol Levy. Three measure of attitude towards the Alcohol Levy had a statistical association with the impact of the Alcohol Levy on drinking trends ( $p < 0.05$ ). The variables included: (1) drug use, (2) personal budget inflation and (3) support of the Alcohol Levy.

There was a statistical association between drug use and impact of the Alcohol Levy on drinking trends ( $p = 0.000$ ). Table 4 shows that 67.3 percent of respondents who used drugs most of the time were more likely to affirm being affected by the Alcohol Levy compared to 14.3 percent of those who rarely used drugs. Those who used drugs frequently were more likely to affirm being affected by the Alcohol Levy than those who rarely used drugs.

There was a statistical association between personal budget inflation and impact of the Alcohol Levy on drinking trends ( $p = 0.008$ ). Table 4 shows that 73.5 percent of respondents who reported increase in prices were more likely to affirm being affected by the Alcohol Levy compared to 8.2 percent of those who did not report increase in prices. Those who reported inflation on their budget were more likely to affirm being affected by the Alcohol Levy than those who did not report increase on personal budget.

**Table 4: Percentage Distribution of Respondents by Impact of Alcohol Levy & Measures of Attitude towards the Alcohol Levy**

<b>Dependent Variable</b>	<b>Impact of Levy</b>		<b>Significance</b>		
	<b>Impact</b>	<b>No Impact</b>	<b>Chi-Squared</b>	<b>DF</b>	<b>P-Value</b>
<b>Drug Use</b>			12.134	4	0.000
Hardly ever	14.3	16.3			
Most of the Time	67.3	0.0			
Total	79.1	20.9			
<b>Personal Budget Inflation</b>					
Yes	73.5	10.2	14.657	1	0.008
No	8.2	6.1			
Total	79.6	20.4			
<b>Knowledge of the Levy</b>			17.895	2	0.07
Yes	73.5	10.2			
No	6.1	8.2			
Total	79.6	20.4			
<b>Support of the Levy</b>			13.078	6	0.042
Yes	12.2	10.2			
No	57.1	8.2			
Total	79.6	20.4			

<b>Price after Levy</b>			13.763	4	0.08
Satisfactory	38.8	14.3			
Not Satisfactory	40.8	4.08			
Total	79.6	20.4			

There was a statistical association between support of the Alcohol Levy and impact of the Alcohol Levy on drinking trends ( $p=0.042$ ). Table 4 shows that 57.1 percent of respondents who did not support the Alcohol Levy were more likely to affirm being affected by the Alcohol Levy compared to 12.2 percent of those who supported the Alcohol Levy. Those who did not support the Alcohol Levy were more likely to affirm being affected by the Alcohol Levy than those who supported the Alcohol Levy.

Results show that those who had knowledge about the Alcohol Levy (73.5 percent) were more likely to affirm being affected by the Alcohol Levy compared to those who did not have knowledge about the Alcohol Levy (6.1 percent). However, there was no statistical association between knowledge of the Alcohol Levy and impact of the Alcohol Levy on drinking trends ( $p=0.07$ ).

Table 4 shows that the percentage of those (40.8 percent) who were not satisfied with the prices after the introduction of the Alcohol Levy were more likely to affirm being affected by the Alcohol Levy compared to 38.8 percent of those who were satisfied with the prices after the Alcohol Levy. However, there was no statistical significant association between prices after the introduction of the Alcohol Levy and the impact of the Alcohol Levy on drinking trends ( $p=0.08$ ).

In summary, out of five measures of attitude towards the Alcohol Levy, three variables had a significant association with impact of the Alcohol Levy on drinking trends. These were: (1) drug use, (2) personal budget inflation and (3) support of the Alcohol Levy.

The study has shown that several variables had a significant statistical relationship with the effectiveness of the Alcohol Levy. The variables included: gender, income level, level of education, type of residence, frequency of alcohol intake, category of alcohol, overall wellbeing, happiness in private life, drug use, personal budget and attitude towards the levy. The primary recommendation emerging from this study is that factors that were not statistically significant should be given consideration in the process of policy implementation plans. This is because they could be relevant in the implementation process.

#### **4.4 Summary of In-depth Findings and Suggestions by Respondents**

##### **4.4.1 Education/advertisement on effects of alcohol abuse**

Respondents indicated it is important to have a basic understanding of factors that may be associated with alcohol abuse because with the increasing pervasiveness of alcohol abuse in society it has become increasingly crucial to gain a better understanding of factors that influence alcohol abuse. The primary recommendation emerging from the findings was that money collected from the levy should be used to educate and sensitise society on alcohol and other substance abuse.

##### **4.4.2 Complementary and alternatives to alcohol use**

Respondents further indicated that due to inflation of the price of alcohol beverages they have resorted to other complementary and alternative substances in order to compensate for their reduced alcohol intake. Former consumers of clear beer who could not afford the higher prices of their favourite drinks are reported to have resorted to cheaper, harmful alternatives. On the other hand, those who could afford the higher prices simply continued to buy their favourite alcoholic beverages.

##### **4.4.3 Rehabilitation**

Some respondents indicated that the revenue collected from the Alcohol Levy should be used to help those who have problems with abuse of alcohol or addiction problems. However, while the expectation had been that the Levy Fund would be used for alcohol use and abuse interventions, the Fund been used for funding the recent Botswana Africa Youth Games and other purposes.

#### **4.4.4 Retail Industry**

Some respondents indicated that since the introduction of the Alcohol Levy they have experienced a reduced purchasing power as the alcohol users and have resorted to other cheaper beverages as a substitute measure. Besides the consumers' pockets, the biggest brewer in the country, Kgalagadi Breweries Limited (KBL) has been the hardest hit by the existence of the Alcohol Levy.

#### **4.4.5 Conclusion**

In summary, the in-depth discussions of the study were divided into four sub-themes, namely advertising (education), complementary/alternative alcohols, rehabilitation and the retail industry. The study has shown that respondents had mixed feeling about the resultant effects of Alcohol Levy. The ultimate impact has been lower sales and profits for the alcohol producers. The result of the existence of the Alcohol Levy to date is that some of the companies in the alcohol industry have lost their value and employees have lost jobs. On the other hand some respondents indicated that the Alcohol Levy has not seen a marked reduction in the use of alcohol in the country as originally envisaged but rather the reduction of hours, relative to the price increases, has been noted as being more effective at curbing excess consumption of alcohol. Others decried that in spite of huge cash flow for government that could be used for alcohol use and abuse interventions, the Levy Fund has found use in funding other projects that are outside its intended mandate.

## **CHAPTER 5: CONCLUSION, POLICY IMPLICATIONS AND RECOMMENDATIONS**

### **5.0 Introduction**

The subsequent chapter will focus on an in-depth interpretation and discussion of the results in order to draw conclusions and recommendations for policy makers and other scholars who may study the subject matter.

### **5.1 Gender and Impact of the Alcohol Levy**

The study found that there was significant statistical association between gender and impact of the Alcohol Levy on drinking trends. From the review of literature some studies have shown that males were more likely to be affected by the Alcohol Levy than females. The possible explanation might be that alcohol usage has been perceived to be a male oriented activity and males have also been found to have a greater liking for alcohol than females (Teo, 2008). The prevalence of traditional gender roles found in Botswana culture and the extent to which parents encourage males to support females financially, could also be reasons why males are more likely to affirm being affected by the Alcohol Levy than females. Therefore the stereotypical notion of alcohol users being men results in males being more affected by the Alcohol Levy and hence the higher numbers of males affected by the inflation in prices (Ray et al., 1999).

On the other hand, the Alcohol Levy has not seen a marked reduction in the use of alcohol in the country as originally envisaged. A study conducted by University of Botswana and associated institutions in 2011, found that 60 percent of respondents said they drink the same quantities regardless of the Alcohol Levy and its increases, while 27 percent said that they drink less because of the Alcohol Levy. The reduction of hours, relative to the price increases, has been noted as being more effective at curbing excess use of alcohol.

### **5.2 Citizenship Status and Impact of the Alcohol Levy**

The study found that, there was no significant relationship between citizenship status and impact of the Alcohol Levy on drinking trends ( $p=0.194$ ). However, the citizens were more likely to report being affected by the Alcohol Levy compared to non-citizens. The possible explanation

for the differences in percentages could be that there were more citizens in this study compared to non-citizens.

### **5.3 Age-Group and Impact of the Alcohol Levy**

The study found that there was no significant relationship between impact of the Alcohol Levy and age group. Several similar studies have found that age-group does not have an effect on alcohol consumption and that age did not affect attitudes towards alcohol use. The explanation for the differences in effectiveness of the Alcohol Levy between younger respondents and older respondents could be that younger alcohol users are more likely to have low income levels compared to older alcohol users hence the differences in percentages.

### **5.4 Marital Status and Impact of the Alcohol Levy**

The study found that there was no significant relationship ( $p=0.063$ ) between marital status and impact of the Alcohol Levy on drinking trends. Differences in impact of the Alcohol Levy were not due to whether respondents were married or not.

### **5.5 Socio-Economic Background Variables**

#### **5.5.1 Income level and impact of the Alcohol Levy**

Results show that there was a significant relationship between impact of the Alcohol Levy and income level ( $p=0.000$ ). The possible explanation for the differences in effectiveness of the Alcohol Levy between high income respondents and low income respondents could be that high income respondents are more likely to adjust to price inflation compared to low income respondents. However, this shows that the Alcohol Levy has not seen a marked reduction in the use of alcohol in the country as originally envisaged because 65 percent of respondents said they drink the same quantities regardless of the Alcohol Levy and its increases, while 35 percent said that they drink less because of the Alcohol Levy

Results show that, there was a significant relationship between impact of the Alcohol Levy and income level ( $p=0.000$ ). The possible explanation for the differences in effectiveness of the Alcohol Levy between high income respondents and low income respondents could be that high income respondents are more likely to adjust to price inflation compared to low income respondents. However, this shows that, the Alcohol Levy has not seen a marked reduction in the use of alcohol in the country as originally envisaged because 65 percent of respondents said they drink the same quantities regardless of the Alcohol Levy and its increases, while 35 percent said that they drink less because of the Alcohol Levy.

### **5.5.2 Level of education and impact of the Alcohol Levy**

There was a significant relationship between impact of the Alcohol Levy and level of education. The possible explanation for the differences in effectiveness of the Alcohol Levy between those who have higher education compared to those with lower education could be that, the higher the education one has, the better income level. As a result, the Alcohol Levy did not have an impact on part of the alcohol users who had higher education as they reported drinking the same quantities after the introduction of the Alcohol Levy.

### **5.5.3 Number of dependent children and impact of the Alcohol Levy**

There was no statistical association between the number of dependent children that respondents had and impact of the Alcohol Levy ( $<0.192$ ). The differences in the proportion of respondents who reported being affected by the Alcohol Levy were not due to whether respondents had a child or not.

### **5.5.4 Residential area and impact of the Alcohol Levy**

There was a significant relationship between impact of the Alcohol Levy and type of residential area that the respondents lived at ( $p=0.046$ ). The possible explanation for the differences in effectiveness of the Alcohol Levy between respondents who lived in high-class residential and low- or middle-class residential could be that high-class respondents are more likely to adjust to price inflation compared to low class respondents. Therefore, this shows that the Alcohol Levy

did not have an impact on the part of alcohol users who had higher income levels compared to low income earners.

## **5.6 Measures of Personal Wellbeing**

### **5.6.1 Frequency of alcohol intake and impact of the Alcohol Levy**

There was a statistical association between frequency of alcohol intake and impact of the Alcohol Levy on drinking trends ( $p=0.045$ ). The explanation for this finding could be that those who frequently use alcohol were more likely to be affected by the Alcohol Levy than those who rarely use alcohol. However this shows that the Alcohol Levy has not seen a marked reduction in the use of alcohol in the country as originally envisaged because 71.4 percent respondents reported drinking the same quantities regardless of the Alcohol Levy and its increases, while 10.2 percent said that they drink less because of the Alcohol Levy.

### **5.6.2 Category of alcohol and impact of the Alcohol Levy**

There was a statistical association between category of alcohol and impact of the Alcohol Levy on drinking trends ( $p=0.000$ ). The probable explanation for this finding could be that those who enjoyed cheap alcohol beverages were more likely to have resorted to it in order to ease the inflationary cost of expensive beverages. As a result this shows that the Alcohol Levy has not seen a noticeable reduction in drinking trends as 63.3 percent of respondents reported drinking the same quantities of “cheaper liquor” compared to 18.4 percent of those who drink expensive liquor.

### **5.6.3 Overall Wellbeing**

There was a statistical association between overall wellbeing and impact of the Alcohol Levy on drinking trends ( $p=0.040$ ). The likely explanation for this could be that those who enjoyed good health were more likely to use alcohol frequently hence affirm being affected by the Alcohol Levy than those who suffered poor health. Therefore, this shows that the Alcohol Levy has not seen a major reduction in drinking trends as 57.7 percent of respondents who enjoyed good health reported drinking the same quantities of liquor compared to 22.4 percent of those who did

not enjoy good health. As a result this shows that good health is the determining factor in quantities of alcohol consumption as opposed to the Alcohol Levy.

#### **5.6.4 Happiness in private life and impact of the Alcohol Levy**

There was a statistical association between happiness in private life and impact of the Alcohol Levy on drinking trends ( $p=0.045$ ). Respondents who were happy in their private life were more likely to affirm being affected by the Alcohol Levy compared to those who were not happy in their private life. The possible explanation for this finding could be that those who reported being happy in their private life were more likely to use alcohol frequently for social leisure compared to those who were not happy in their private life. As result, the Alcohol Levy has not seen a reduction in the use of alcohol in the country as originally envisaged because 71.4 percent of respondents who reported being happy in their private lives stated that they continued drinking same amount liquor compared to 10.2 percent of those who said that they drink less because of the Alcohol Levy.

#### **5.6.5 Expenditure on alcohol before the Alcohol Levy and impact of the Alcohol Levy**

There was no statistical association between expenditure on alcohol before the introduction of the Alcohol Levy and impact the Alcohol Levy on drinking trends ( $p=0.534$ ). The differences in the proportion of respondents who reported being affected by the Alcohol Levy were not due to whether respondents had a greater expenditure before or after the Alcohol Levy. One important factor hypothesised to affect the strength of price elasticity for alcohol across different population groups is disposable income. Specifically, groups with less disposable income, such as underage drinkers, may be expected to be more sensitive to changes in alcohol prices than those with more disposable income (Chaloupka, 1993).

#### **5.7 Measures of Attitude towards the Alcohol Levy**

The analysis examined the extent to which five measures of attitude towards the Alcohol Levy were associated with impact of the Alcohol Levy. The factors included: (1) drug use, (2) impact on personal budget, (3) knowledge of the Alcohol Levy, (4) support of the Alcohol Levy and (5) price after the Alcohol Levy. Three measures of attitude towards the Alcohol Levy had a

statistical association with impact of the Alcohol Levy on drinking trends ( $p < 0.05$ ). The variables were: (1) drug use, (2) personal budget inflation and (3) support of the Alcohol Levy.

### **5.7.1 Drug use and impact of the Alcohol Levy**

There was a statistical association between drug use and impact of the Alcohol Levy on drinking trends ( $p = 0.000$ ). The majority of respondents who used drugs most of the time were more likely to affirm being affected by the Alcohol Levy compared to their counterparts who rarely used drugs. The possible explanation for the difference in proportions could be that those who frequently use drugs could have substituted alcohol with drugs in order to ease the inflationary cost of alcohol. As result this shows that the Alcohol Levy has seen a marked reduction in the use of alcohol in the country as originally envisaged but alcohol majority of alcohol users (67.3 percent) have resorted to drug and substance because of the Alcohol Levy.

### **5.7.2 Personal budget inflation and impact of the Alcohol Levy**

There was a statistical association between personal budget inflation and impact of the Alcohol Levy on drinking trends ( $p = 0.000$ ). Those who reported inflation on their budgets after the introduction of the Alcohol Levy were more likely to affirm being affected by the Alcohol Levy than those who did not report inflation on personal budgets. On the other hand this shows that the Alcohol Levy has not reduced the drinking patterns as 73.5 percent of respondents reported that they drink the same quantities regardless of the Alcohol Levy and its increases.

### **5.7.3 Support of the Alcohol Levy and the impact of the Alcohol Levy**

There was a statistical association between support of the Alcohol Levy and impact of the Alcohol Levy on drinking trends ( $p = 0.042$ ). The possible explanation for this finding could be that those with a negative attitude towards the Alcohol Levy were more likely to affirm being affected by the Alcohol Levy than those with a positive attitude towards the Alcohol Levy.

### **5.7.4 Knowledge of the Alcohol Levy and impact of the Alcohol Levy**

There was no statistical association between knowledge of the Alcohol Levy and impact of the Levy on drinking trends ( $p = 0.07$ ). The differences in the proportion of respondents who reported

being affected by the Alcohol Levy were not due to whether respondents had knowledge about the Alcohol Levy or not.

#### **5.7.5 Price after the Alcohol Levy and impact of the Alcohol Levy**

There was no statistical significant association between prices after the introduction of the Alcohol Levy and impact of the Alcohol Levy on drinking trends ( $p=0.08$ ). The differences in the proportion of respondents who reported being affected by the Alcohol Levy were not due to whether respondents were satisfied with the prices or not. However, 70.8 percent of respondents who were satisfied with the prices after the introduction of the Alcohol Levy reported drinking the same quantities of liquor compared to 30.8 percent of those who were not satisfied. This shows that the introduction of the Alcohol Levy has not seen a marked reduction in the use of alcohol in the country as originally envisaged.

### **5.8 Conclusions**

The primary objective of this study was to investigate the effectiveness of the Alcohol Levy on the drinking trends in Botswana. The study has found that the Alcohol Levy has not seen a marked reduction in the use of alcohol in the country as originally envisaged. This was due to the fact that the majority of respondents reported that they drink the same quantities of liquor regardless of the Alcohol Levy and its increases, while a marginal percentage reported that they drink less because of the Alcohol Levy. A number of variables such as gender, level of education, level of income, type of residence, frequency of alcohol intake, category of alcohol, overall wellbeing, happiness in private life, drug use, personal budget inflation and support of the Alcohol Levy have shown that the Alcohol Levy did not change the drinking patterns of alcohol users as respondents reported drinking same quantities of liquor after the introduction of the Alcohol Levy.

The effect of the existence of the Alcohol Levy to date is that some companies in the alcohol industry have lost their value and employees have lost jobs, with Kgalagadi Breweries Limited closing down its Palapye plant in 2012. Former consumers of clear beer who could not afford the higher prices of their favorite drinks are reported to have resorted to cheaper, harmful alternatives. On the other hand, those who could afford the higher prices simply continued to buy

their favorite alcoholic beverages. Besides the consumer's pockets, the biggest brewer in the country, Kgalagadi Breweries Limited, has been the hardest hit by the existence of the Alcohol Levy, as the company has had to innovate constantly to beat the effect of the Alcohol Levy on its bottom line.

## **5.9 Policy Implications**

The primary issue when looking into Botswana's alcohol consumption is the lack of the ability by the government to date to create a multi-faceted policy that is appropriate for particular behavioral change facets. Further, without substantial research into the implications of a fragmented policy on alcohol abuse, these different facets will not be solved. There have been many proposed changes to legislation over the years to restrict alcohol. Yet there has been no successful solution or deterrent for reducing alcohol abuse. The government philosophically is that educating the youth and creating public programs to help those with drinking problems is the best method for solving alcohol issues. However, on the ground the government has decided to follow a taxation-based model in the Alcohol Levy.

Alcohol abuse needs to be analysed as something far more than an epidemic or moral negative in order to create real change that can remedy some of the major devastations caused by alcohol consumption. However, attacking alcohol as an evil or regulating alcohol to the point that children aged eighteen years have access to alcohol is not an answer. Alcohol must be viewed and handled with balance. Understanding that alcohol will not simply disappear with regulation or destroy the world with no impediments is critical to sustainable and healthy development initiative for the nation of Botswana.

## **5.10 Summary of Chapters**

- Chapter one was based on the introduction and background to the problem, the central argument, aims and objectives of the problem or issue that was investigated.

- Chapter Two focused on the literature review which begins with a theoretical framework that introduces and describes how the Alcohol Levy effect consumption of commodities using economics models.
- Chapter Three provides the methodology which outlines the methods used for the study including: interviews, sampling techniques, research design and data analyses.
- Chapter Four address the development of the research in terms of data collection and analysis, pointing out variations and similarities with the understanding of the subject in general. Self-constructed diagrams, tables and figures have been used to support the argument(s) on the arrangement of evidence.
- Chapter Five focused on discussion of the results of the results and conclusion in order to satisfy a number of objectives. This chapter also point out the central characteristics, the limitations of the study, and the areas of further research that might be necessary to extend the research.

### **5.11 Limitations of the Study and Recommendations**

Like all empirical studies, this study has certain limitations.

Firstly, the sample size was not sufficiently large to permit generalisation. Therefore, this study can be strengthened by increasing the sample size and including participants in different geographical areas. With an increased sample size, a more detailed empirical analysis among alcohol users can be performed so as generalise the finding at a broad-spectrum.

Secondly, the data were based on self-reports and the interpretation and understanding of each questionnaire item was not established or substantiated. As a result, it is not clear that the most relevant questions have been asked or that it is understood how alcohol users themselves frame the issue of the impact of the Alcohol Levy on changing their drinking patterns. In sum, future research is needed that considers additional variables.

### **5.12 Research Gap**

The volume and consistency of the evidence reviewed here suggests additional research is required on the basic questions of whether changes in alcohol taxes and price affect excessive

alcohol consumption and related harms. Nonetheless, studies published subsequent to the 2005 cut-off date for this review continue to indicate the public health benefits that accrue from increasing alcohol taxes.

However, additional research is needed to assess:

1. Whether changes in alcohol prices differentially affect drinking behavior and health outcomes for important subgroups of the population, such as underage people.
2. The relative benefits of increasing taxes on all alcoholic beverages simultaneously, versus selectively increasing taxes on specific beverage types. This evaluation should be considered in light of known differences in the beverage preferences of inflation on real tax rates by beverage type.
3. The impact of different approaches to taxing alcoholic beverages on excessive alcohol consumption and related harms. Specific emphasis should be placed on the impact of alcohol sales taxes.

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## APPENDIX 1

**Table 5: Significant Bivariate Association between Impact of the Alcohol Levy and Independent Variables Arranged by Order of Significance**

	<b>Independent Variables</b>	<b>Chi-square</b>	<b>DF</b>	<b>p-Value</b>
1	Gender	53.973	4	0.000
2	Income level	50.569	6	0.000
3	Level Of Education	48.289	8	0.000
4	Category of Alcohol	48.281	4	0.000
5	Drug Use	12.134	4	0.000
6	Personal Budget	14.657	1	0.008
7	Overall wellbeing	10.021	4	0.040
8	Support of Levy	13.078	6	0.042
9	Frequency of alcohol Intake	9.775	4	0.045
10	Happiness in Private Life	9.775	4	0.045
11	Residential Area	12.840	6	0.046
12	Knowledge of Levy	17.895	2	0.07
13	Price after levy	13.763	4	0.08

## APPENDIX 2: QUESTIONNAIRE

### The effectiveness of Alcohol Levy on drinking patterns in Botswana

#### Socio Demographic Background Variable

1. Gender      Male                       Female
2. Citizenship Status    Citizen                       Non-Citizen
3. Marital Status      Single                       Married
4. Age Group    18-35                       36 and above

#### Socio-Economic Background Variables

5. Socioeconomic status
- Low                       High
6. Level of Education
- University                       BGCSE                       JC                       Primary
7. Residential area
- Low                       Middle Class                       High Class

8. Size of Household a) 1-2 b) 3-5 c) 6 and above

**Measures of personal wellbeing**

9. How often do you use alcohol? (*probe*)

- a) Hardly ever b) Most of the time

10. What Category of Alcohol beverages do you use? (*probe*)

- a) Cheap b) Expensive

11. What's the status of your overall health/wellbeing?

- a) Good Health b) Poor Health

12. Are you happy in your Private life?

- a) Yes b) No

13. How much did you spend on alcohol before the levy? (*probe*)

- a) P100- 300 b) P400- 600 c) P700 and above

14. How would you rate your level of alcohol use currently? (*probe*)

- a) Satisfactory b) Not Satisfactory

15. What's your view on affordability of alcohol after the levy? (*probe*)

- a) Affordable b) Not affordable

16. How often do you use drugs? (*probe*)

- a) Rarely Ever b) Most of the Time

17. Has the levy affected your monthly Budget? (*probe*)

- a) Yes b) No

18. Do you have knowledge about the Alcohol Levy?

- a) Yes                      b) No

19. Does the levy have an impact on drinking trends? (*probe*)

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

20. Do you support the Alcohol Levy initiative?

- a) Yes                      b) No

21. How often do you use alcohol after the introduction of the levy? (*probe*)

- a) Hardly ever              b) Most of the time

22. Any suggestions to curb excessive alcohol usage.

23. What's your views on Education/advertisement on effects of Alcohol abuse

24. What other forms of drugs or alternative alcohol have users resorted to?

25. Do you think the government is doing enough to finance rehabilitation of alcohol abuse victim?

26. How did the Retail Industry suffer from the introduction of the levy?

