# AN INVESTIGATION INTO THE RELATIONSHIP BETWEEN BEER PRICE AUGMENTATION AND BEER CONSUMPTION IN SWAKOPMUND

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**ESSON K. HAIPINGE**

**200320629**

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**SUPERVISOR: DR. OMU KAKUJAHA-MATUNDU (UNAM)**

**Abstract**

The relationship between beer price, augmentation and beer consumption in Swakopmund has not been researched on in Namibia. The purpose of this research is to fill the knowledge gap in current literature on the alcohol and price relationship in Namibia. This study is an empirical analysis that draws on information from the overall population of the Swakopmund community, selecting those that are involved in alcohol activities and those frequenting beer outlets. The Statistical Package for Social Sciences (SPSS), was used to analyse the data by generating frequencies; drawing graphs; and computing some descriptive statistics and correlation measures between different variables. However, the sampling procedures that were adopted in this research had one shortcoming, the samples that were selected were very small compared to what should have been the case.

To address the problem of high beer consumption, the study came up with a number of recommendations. It recommended that: parents (and guardians) are educated or informed on how to identify who their children are socialising with so that they are able to identify and deal with the issue of alcohol abuse before it gets out of hand; create awareness among the Swakopmund community of the problem of high alcohol consumption; reduce accessibility of alcohol by reducing the number of outlets, where one can buy alcohol; start programmes to keep the youth occupied and increasing taxation on alcohol in order to raise the price of alcohol and; hence reduce alcohol

consumption, though to a limited extent only. Caution should be taken as a dramatic increase in price may actually have negative repercussions; such as patrons switching to illicit brews, and resorting to crime.

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**LIST OF ACRONYMS**

| | |
|---|---|
| EU | European Union |
| GDP | Gross Domestic Product |
| MBA | Master of Business Administration |
| MTF | Monitoring the Future |
| NHS | National Health Service |
| RAND | Research and Development |
| SPSS | Statistic Package of Social Science |
| TORA | Theory of Rational Addiction |
| UK | United Kingdom |
| WHO | World Health Organization |

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## DEDICATION

This work is dedicated to my lovely wife, Sarafina.

**DECLARATION**

I, Esson Haipinge, hereby declare that this study is my own work and is a true reflection of my research, and that this work, or any part thereof has not been submitted for a degree at any other institution.



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# CHAPTER 1

# INTRODUCTION

## 1.1 Background of the study

In most countries in the world, alcohol is legal and socially acceptable and is also the most used substance worldwide, (Keller & Vaillant, 2011). It is consumed mainly for relaxation, fun and social reasons. Even though the majority of people drink alcohol in moderate amounts, which can actually lead to positive health outcomes, (Keller & Vaillant, 2011) the global burden of disease related to alcohol consumption is higher than that of cigarette smoking (Jernigan, 2001). Although it is legal to drink alcohol in Namibia, there is a minimum age of 18 years at which one may legally drink.

Unwise alcohol consumption is not only associated with long-term health effects, but also with acute consequences such as motor vehicle accidents. The abuse of alcohol by road users, has got negative connotations on society as some people lose their lives prematurely, whilst some get disabled, (Jernigan, 2001). Not only are some lives lost and others affected negatively through injuries, but there are also far reaching economic consequences, as production is affected in companies, there are economic losses through crime and social effects as some become violent and misuse family resources, (Cook & Moore, 2000). Though there may be benefits from the production and sale of alcoholic beverages, the costs associated with negative health-related outcomes and socioeconomic consequences, outweigh the benefits, (Cook & Moore, 2000).

There are many different perspectives and backgrounds from which research on the effects of alcohol is carried out: economic, where alcoholic beverages are considered consumer goods, following that, what is known about consumer behaviour in general is likely to provide insight into alcohol consumption. From an economics perspective, other things being equal, it is generally believed by economists that the consumer demand for a given product falls when the price of that product rises. This is generally referred to in economic circles as the price elasticity of demand. A large body of research shows that, this “law of demand” holds for alcoholic beverages. Following the Price elasticity of demand principle, it is the researcher’s belief that excise tax and other public policies that affect the price of alcohol can influence the demand for alcohol (https://pubs.niaaa.nih.gov/publications/10report/chap06a.pdf*)*.

According to Jernigan, (2001), there is a higher likelihood of alcohol abuse and alcohol related injuries with early initiation into alcohol use. Also as per Grant & Dawson, (1997), the lifetime prevalence of alcohol dependence is more than 40%, among those who were initiated into drinking at the age of 14 years or earlier, and that the rate of dependence or addiction, decreases rapidly with increasing age of initiation. Individuals who started drinking after the age of twenty, have only a 10% probability to become alcoholics or abuse alcohol later in their life. At the same time, there is an observable pattern of early start to drinking as well as an increase in the frequency of binge drinking among adolescents, (Hibell et al., 2007). This problem is especially pronounced in European countries, but also in the United States and Australia and recently becomes more common in developing countries, (Cawley & Rhum, 2011).

Besides the relatively high rates of binge drinking often associated with car accidents, unsafe sex and crime commitment, drinking patterns in adolescents are often predictors of drinking behaviour in adulthood and can also impact on personality development and family formation, (Cook & Moore, 2000). Postponement of the initiation of drinking could have positive effects on individuals' health, but also positive implications for the whole society.

Most of the economic studies related to alcohol consumption, focus mainly on the consequences of drinking or on quantifying the impact of alcohol-control policy on the actual consumption, (Cook & Moore, 2000). The impact of price change on the drinking is also one of the important concerns, (Cook & Moore, 2000). The main contribution of economists related to explanation of individuals' desire to consume alcohol lies in improvements of the standard model of consumer choice and recently in the examination of the effect of social interaction, (Cawley & Ruhm, 2011). While empirical research related to the influence of peers, neighbours and others on the individual is quite popular among economists, there is a lack of quality research focusing on other determinants of drinking than social interaction.

In Namibia, the Self-Regulating Alcohol Industry Forum has as its main objective promoting responsible drinking, but ultimately, the solution cannot come from without. Alcohol use and abuse is, after all, not done unwillingly at the start, even if it can become uncontrollable at the end. It is the people and the culture that needs to address this cost. People need to start looking critically at themselves, and decide if this is a cost they want to bear, both personally, in the case of drinkers, and socially, as a nation. When we decide that the cost is too high, that is when we'll start solving the problem, (Heerden, 2017).

This research paper, tries to fill the gap in existing literature and strive to explore the relationship between beer price augmentation and beer consumption in Swakopmund. The Swakopmund town is located 33 kilometres north of Walvis Bay and it was founded in 1892, two years later than Windhoek, by Captain Curt von Francois (Profile of Swakopmund, 2017). Swakopmund is Namibia's main seaside resort, with a cool and bracing climate and its large numbers of restaurants, pubs, entertainment and shops. It also offers a multitude of activities, adventures, carefully tended public gardens, a wide choice of Bed & Breakfast lodges and hotels, which makes it an enjoyable holiday destination. Beer is the alcohol beverage of choice in Swakopmund. This pastime is associated with social problems such as alcoholism, gender based violence and petty as well as serious crime.

As Horton, (1974), states, "Alcoholic beverages are probably as old as agriculture", and further, indicates that in so far as ancient and modern societies have used alcoholic beverages, it can be assumed that problems associated with alcohol abuse are not culture or age specific. In terms of this study, beer is defined as an industrial alcoholic beverage made from malted cereal grain, (as barley), flavoured with hops, and brewed by slow fermentation (http://www.aperfectpint.net). Concerning beer price augmentation, the study will measure prices directly as Wagenaar et al., (2009) state that differences in price across geographic areas are due largely to differing tax rates.

## 1.2 Statement of the Problem

According to the World Health Organization (WHO), (2014), Namibia has recorded low alcohol per capita consumption from 1960 to 1995, in all different types of alcohol namely beer, wine and spirits. In terms of beer manufacturing, Namibia has a Brewery, which produces different brands of beer beverages, and it had a branch in Swakopmund until recently. In addition, South African Breweries, (SAB) bottles some Castle Lager at Okahandja and other brands, (e.g. Heineken) are imported from South Africa and Europe.

In 1996, alcohol consumption in Namibia increased drastically, particularly the consumption of beer. In addition, Namibia has a wide variety of favourite drinks, but beer carries the most weight with 67% of alcohol consumption. Spirits make up 20%, wine makes up 7% and other alcoholic beverages contribute 6%. Furthermore, the WHO report, states that alcohol consumption is linked to many harmful consequences for the individual drinker, the drinker's immediate environment and society.

A surface-level analysis based on per-capita consumption, shows that adult Namibians, on average, consume 10.8 litres of pure alcohol per year – above the African average of 6 litres, (Heerden, 2017). However, that does not take into account Namibia's abstainers. A total of 48.7% of adult Namibians are life-long abstainers, with an additional 12.3% former drinkers now abstaining, resulting in 61% of the adult population being abstainers. When that is taken into account, it means that the per capita consumption of alcohol for drinkers is 27.7 litres per year. It also reveals that 37.2% of our drinking population binge-drink at least once a month, (Heerden, 2017).

In addition, it should then be no surprise to learn that the prevalence of alcohol-use disorders is 5.1% of the population, above the regional average of 3.3%, and 2.2% of the population is dependent on alcohol, above the regional average of 1.4%. Namibia's death rate for liver cirrhosis is 14 people per 100 000 of the population per year, of which 68% can be attributed to alcohol abuse. Even more glaringly, while Namibia used to be the worst in the world in income inequality, it has managed to improve on that front, only to take on a new title – worst in the world in traffic accident deaths attributable to drink and driving. The death rate for road traffic accidents is 35 people per 100 000 population per year – and 66.1% can be attributed to alcohol abuse. In total, as a country, Namibia loses 153 years of life per 100 000 population due to alcohol use, and 180 healthy years per 100 000 of the population due to disease and disability due to alcohol (Heerden, 2017).

In terms of the effect on the economy, alcohol abuse has many consequences, for example; lower productivity, lowered wage (because of missing work and decreased efficiency on the job), lost employment opportunities, increased medical expenses for illness and accidents, legal cost of drink-related offences, and decreased eligibility of loans (WHO, 2014).

It is reported that the Namibian Minister of Health and Social Services concurs with the WHO report that alcoholism is a serious concern in the country and it has a negative social impact to the citizens. It is further reported that he is preparing a cabinet submission so that the Alcohol Act is amended so that tax on alcohol will increase to the extent that it will not be affordable for many, (Haidula, 2015).

This study aims to investigate the relationship between beer price augmentation and beer consumption in Swakopmund. Most of the studies on the relationship between alcohol price augmentation and alcohol consumption used the quantitative method or both the quantitative and qualitative methods. Some studies measure price directly and many use tax rate as a surrogate measure of price elasticity, (Wagenaar et al., 2009).

In Namibia, these type of studies have not been conducted and hence, the need for the current study in order to establish the relationship between price and alcohol consumption, building on the writings of Wagenaar et al., (2009), and Booth et al., (2011).

### 1.3 Research questions

This study aims to address the following research questions.

- What is the relationship between beer price augmentation and beer consumption in Swakopmund?
- What possible recommendations could be drawn from the findings of the current study

### 1.4 Significance of the study

The study will assist in understanding the relationship between beer price-augmentation and beer consumption. From the findings of the study, the researcher will derive relevant recommendations in this regard. Secondly, this study will lay some foundation for future studies on price/tax increases in relation to alcohol consumption.

### 1.5 Limitations of the study

This study will only concentrate on beer consumers, focus group and suppliers in Swakopmund and may not be representative of the whole country. No attempt will be made to study the cross elasticities that may exist between beer price and other alcohol types. This is mainly due to possible data constraints.

### 1.6 Delimitation of the study

This study limits its coverage to the Swakopmund community, covering a total sample of 44 respondents. Ideally, the coverage could be national for more generalisations of the study findings. Despite this shortcoming, such a concentration will generate a deeper understanding of the case study at hand.

## CHAPTER 2

## LITERATURE REVIEW

### 2.1 Theoretical literature

According to Matthew & Ross, (2010) literature review is a complex and inclusive term and to make a comprehensive list would: take too long; and be soon out of date. It includes books, refereed and non-refereed journals, theses, conference papers, newspapers, television/radio, official documents, research reports and the internet.

These literature sources reveal that governments use multiple methods to restrain alcohol consumption and beverage commerce. Taxation is the most important single factor for controlling the prices and affects demand for alcohol, (Mäkelä & Österberg, 2009). In addition to excise taxes that affect the demand for alcohol, there are different constraints to curbing the supply of alcohol.

From an economic perspective, alcohol has been proved to be a normal good - with increasing price, the consumption decreases. Yet, from an addictiveness perspective, alcohol still differs from normal goods, (Cook & Moore, 2000). As identified through experimental studies, individuals' alcohol consumption is influenced by three characteristics of addiction, (Cawley & Ruhm, 2011): reinforcement, tolerance, and withdrawal.

Reinforcement suggests that current consumption's marginal utility is dependent on the stock of past consumption of an addictive good. Current behaviour is likely going to be influenced by past behaviour, meaning, an individual, who has consumed alcohol in the past, is very likely to currently engage in drinking. Tolerance implies that utility of current consumption decreases with high levels of past consumption, (Becker & Murphy, 1988).

Withdrawal refers to a situation when an individual is exposed to negative physical reactions and reduction in utility when the individual does not consume the addictive product in the current period (Chaloupka, Centers, & Tauras, 2010). Like a hangover, from a medical perspective, withdrawal appears almost any time after sufficient alcohol consumption. However, here it refers to withdrawal syndromes related to severe alcohol addiction.

The existence of reinforcement, tolerance, and withdrawal has important implications for the economic theory because it violates the assumption of the basic model of consumer behaviour. This model assumes that the utility of current consumption depends only on the current consumption.

Nevertheless, the utility of current consumption of an addictive good seems to be highly influenced by past consumption of the good. Economists have created two approaches which take the characteristics of an addictive good into account – the myopic approach and the rational addiction model, (Chaloupka et al., 2010). Myopic addictive models allow individuals' current consumption of the addictive good to be dependent on the past consumption.

However, the myopic approach, assumes that the consumer is naive and does not take the addictiveness and side effects of the product into account. In contrast in, the Theory of Rational Addiction (TORA), Becker & Murphy, (1988) supposes that an individual is aware of the future consequences of his/her present actions, (including reinforcement and tolerance) and incorporates them rationally into current utility calculations. The Theory of addiction, assumes that the immediate utility of the consumption of an addictive good depends on the stock of past consumption of an addictive good, its current consumption and on future consumption of the addictive substance.

The characteristics of an addictive good and the theory of an addictive good has the following implications for the prediction of an individual's participation in drinking. Firstly, 'reinforcement' indicates that past drinking behaviour shall be a good predictor of current consumption. Secondly, due to the existence of the "tolerance effect", individuals' sensitivity shall reflect consumers' past experience with alcohol and also their attitude towards drinking. It could be assumed that individuals with low sensitivity to alcohol, tend to engage in drinking more often, and drink in higher quantities. Thirdly, an individual is assumed to take into consideration, all available information and future consequences into consideration. Thus, well-known facts about long-term health-related problems associated with alcohol abuse should also have an influence on consumers' drinking.

Concerning adolescents' alcohol consumption, Cook & Moore, (2000) concluded that, drinking is a habit-forming behaviour also for youths. Thus, the characteristics of addiction should have an effect on adolescents' drinking decisions. However, the literature brings into evidence the fact that adolescents do not behave exactly in accordance with the rational addiction model, (Gruber, 2000). The two main violations of the model are: the existence of excessive myopia and time-inconsistent preferences, (Gruber, 2000). Adolescents simply do not take into account all consequences of their current behaviour and even if they do, they tend to discount the future more heavily than adults.

It could be assumed that myopia leads the youth to underestimate the addictiveness of alcohol and also its long-term side effects. Time inconsistency suggests that even if adolescents would have the proper information about health-related risks associated with drinking, they most likely do not take them into account when making actual decisions about participating in drinking. Then most likely, positive associations with immediate alcohol consumption should have a higher impact on the drinking patterns of youth than negative associations.

Drinking is not only an addictive habit, it is also a social activity and it seems that individuals' decision to drink (such as many other decisions), can be to a high extent influenced by the behaviour of others, (Cook & Moore, 2000). In preceding arguments, the individual is assumed to make his/her decisions in isolation, however, Manski, (2000), suggests that, in reality, individuals interact with each other, which leads to correlated behaviour within a group of interacting individuals. The existence of social interaction among the youth would imply that adolescents' decision to drink is partly attributable to the drinking behaviour of their friends and peers in general.

Major reviews by Rehm et al., (2003), Gmel & Rehm, (2003) and Meier et al., (2009) come up with a wide selection of negative outcomes associated with alcohol consumption: e.g., alcohol is associated with liver cirrhosis, high blood pressure and a number of other conditions, including certain types of cancer (Rehm et al., 2003). Through impairment of judgement and motor skills, alcohol is also associated with violence, diseases of a sexual nature and intentional and unintentional accidents and injuries, (most notably motor vehicle accidents and fatalities), (Gmel & Rehm, 2003; Anderson et al., 2009; Corrao et al., 2004).

The taking of alcohol is also positively correlated with violent incidents and negatively with measures of workplace productivity (Gmel & Rehm, 2003). Lastly, through its dependence-forming quality, alcohol is associated with family disruption and damage to the social fabric of a community (Rehm et al., 2003). Numerous attempts have been made to estimate the costs of alcohol-related injuries to society: e.g. - an estimate from 2003 put the cost of alcohol abuse in the European Union (EU), at around €125 billion – equivalent to 1.3 percent of Gross Domestic Product (GDP), (Anderson & Baumberg, 2006). In England, the cost of alcohol-related damage, to the National Health Service (NHS) alone, has been estimated to be GBP 2.7 billion in 2006/7 prices (NHS, 2009).

Due to the finding that excessive consumption of alcohol has negative consequences for health and safety, the consumer response to changes in alcoholic beverage prices is an important topic for investigation. One research approach, pioneered in the early 1980s (Cook, 1981; Cook & Tauchen, 1982), is to examine the direct relationship between alcohol tax rates and such public health outcomes as traffic fatalities and cirrhosis of the liver. An alternative approach is to examine the linkages through which an alcohol tax increase might reduce alcohol-related problems. Taking this approach leads to questions such as: By how much, does the consumption of alcoholic beverages fall when prices increase? Do persons who drink heavily respond as much to price changes as lighter drinkers do? Do college students and young adults respond as much to price changes as other adults do? The two approaches complement each other, and provide a richer and more complete understanding of the nature of price and tax effects.

In spite of this research being limited to the study of the effect of pricing on the consumption of alcohol, economic research has made other important contributions to the field of alcohol research. These include: studies of the effects of advertising on alcohol demand (Saffer, 1996); the geographical relationships between outlet density, alcohol availability, and alcohol-related problem rates (Gruenewald et al, 1996); the effect of raising legal drinking ages on traffic fatalities (Wagenaar, 1993); the effects of macroeconomic conditions on alcohol consumption and drinking and driving (Ruhm, 1996); and the relationship between alcohol consumption and how much one's take-home pay, (French & Zarkin, 1995; Kenkel & Ribar, 1994; Mullahy & Sindelar, 1993).

An increase in the affordability of alcoholic beverages (affordability being a function of the relative price of alcohol and disposable income), has been associated with an increase in alcohol consumption in the last few years; alcohol was 69 percent more affordable in the United Kingdom (UK), in 2007 than it was in 1980, (NHS, 2009). This increase in alcohol affordability can be attributed both to significant (inflation adjusted), increases in income in the UK over the last 15 years, as well as to a decrease in the relative price of alcohol (Rabinovich et al., 2009). In the UK, specifically, the relative price of alcohol decreased by just under 15 percent, between 1996 and 2004, and disposable income increased by over 50 percent over the same period (Rabinovich et al., 2009).

The combination of both the scenarios above, makes alcohol more affordable now than it has been in the last two decades. These levels of alcohol consumption have been associated with a range of alcohol damages facing the UK. For instance, as the affordability of alcohol has increased, the proportion of violent incidents in which victims thought the perpetrator was under the influence of alcohol, increased 15 percent between 1995 and 2008/09. In total, across the UK, it is estimated that there were approximately 973,000 incidents of alcohol-related violence in 2008, making alcohol a factor in nearly half of all violent crimes. Other alcohol caused damages of concern in the UK include: anti-social behaviour, domestic violence, chronic health diseases (such as liver cirrhosis) and acute health problems (such as injuries from car accidents), and others (Rabinovich et al., 2009).

The changes in alcohol affordability have important implications for public policy. The balance of decades of existing empirical evidence indicates that there is a positive association between income and alcohol consumption, (that is, as income go up, consumption goes up as well) and a negative association between alcohol price and consumption, (when the price of alcohol increases, consumption decreases), (Wagenaar et al., 2009). A recent Research and Development (R & D), study, one of the few studies that look specifically at the link between affordability, (a composite measure of income and price) and consumption, echoes the existing evidence; looking at alcohol affordability across the EU, the study has shown that there is a positive association between alcohol affordability and consumption. In other words, the study shows that on average, across the EU, a 1 percent increase in affordability is associated with a 0.32 percent increase in consumption in the long run, (Rabinovich et al., 2009).

### 2.2 Alcohol price and consumption relationship overview

According to, Syvänen, (2011), taxation is the key tool in controlling the price of alcohol and changes in alcohol taxes have direct effects on alcohol demand. To study the relationship between drinking and alcohol prices, a measure for relative changes is needed. Thus, price elasticity of demand has to be investigated, (*ibid*.).

For policy makers, the price elasticity of demand, tells about the effects of alcohol tax adjustments on consumption. To study the relationship between alcohol use and earnings, price elasticity may help to unwind some of the ambiguity arising from the endogenous nature of alcohol use in the equation, (Dave & Kaestner, 2002). If alcohol is a normal good, it must have negative price elasticity; meaning that an increase in price causes a drop in consumed quantity. On the other hand, normality also implies that alcohol demand increases with income. According to a comprehensive study conducted in the USA by Wagenaar *et al.,* (2008), the average price elasticity, including all beverage types is around -0.44, which indicates fairly little changes in demand as prices change. The authors also report that there are differences among beverages, beer being the most inelastic alcohol category and this could be due to its addictive nature.

In addition to aggregate elasticity, variations between beverage types, individual characteristics lead to different outcomes. This approach introduces also the possibility of more elastic demand. For example, differences between sexes or age groups may prove to have significant implications. Commonly younger people have smaller earnings and alcohol consumption, takes a relatively larger share of a young person's income.

Therefore, even small price changes can have large effects on demanded quantities and own price elasticities for beverages are large. Cook & Peters, (2005), studied drinkers' bonus on young people and replaced drinking variables with alcohol price variable. The authors confirm the existence of drinkers' bonus and conclude that higher alcohol prices are associated with better labour market outcomes, indicating reverse causation as the main cause of drinkers' bonus: at least for young people, increased income leads to higher alcohol consumption. Keng & Huffman, (2007), looked at young people's binge drinking and price elasticity, stating that binge drinking is responsive to the price of alcohol and elasticities are relatively large.

Another way to look at the relationship between prices and consumption is to make a distinction between different drinking patterns. Manning et al., (1995), investigated price effects on light, moderate and heavy drinkers. The authors concluded that both light and heavy drinkers have significantly less elastic demand behaviour than moderate drinkers. Furthermore, the upper ten percent of consumers consumes 51 percent of all alcohol and this percentile has almost perfectly price inelastic demand. A similar consumption for the upper tenth percentile is also evident in Finland, (Mäkelä et al., 2010).

One interesting aspect of alcohol consumption and earnings, relates to the actual price of alcohol: if moderate alcohol users earn "drinkers' bonus", will the amount of money spent on buying alcohol eliminate the wage premium? This issue has been completely ignored in previous academic research, yet it is reasonable to assume that even for moderate drinkers, alcohol use may constitute a notable part of total spending. In order to incorporate this aspect into the analysis, price measures for different beverage classes, such as average prices during the survey year, are required. Following on this, these prices will be used to calculate the total cost of alcohol consumption, which is contrasted to earnings (*ibid*.).

However, there are limitations to the aforementioned earnings-costs comparison. As a person succeeds in increasing his earnings, he will use more alcohol, (assuming that it is a normal good). There will also be changes in consumption patterns, because the wealth effect shifts alcohol consumption towards better quality beverages. Thus, more expensive brands will be consumed and the cost of alcohol use increases. This limits the comparison measures, since the quality of alcohol beverages can't be easily indexed in survey data. Nevertheless, it can also be assumed that the change in consumption habits happens between beverage classes, i.e. consumption of wine is positively related to income. Thus, it may be sufficient to use the average prices for different beverage classes after all. Another limitation is the place of consumption, since prices in restaurants and bars are manifold in comparison to retail store prices. This problem can be overcome by having a variable that separates consumption at home and in restaurants (*ibid*.).

In Finland, alcohol taxation has been a central issue in the public health policy discussions. In the past ten years, taxation has been adjusted several times. In 2004, quotas on tax free imports of alcohol from other EU countries were abolished and Estonia joined the EU during the same year, (*ibid.*). The price difference in alcohol beverages between Finland and Estonia was significant and the Finnish government had reasonable fears about the dramatic increase in alcohol consumption. Thus, alcohol taxes were reduced on average by 33% in March 2004 (Ministry of Finance). According to Syvanen, (*ibid*.) alcohol consumption increased by 10% in 2004 and it had severe public health consequences. The authors state that alcohol-related damages increased dramatically among the worst-off parts of the society. Recently, alcohol taxes have been raised in stages, the last increase being 10% in late 2009 (*ibid*.).

There has been substantial literature over the past several decades on the relationship between beverage alcohol tax and price levels and alcohol sales or consumption measures. Some studies, measure prices directly and many use tax rates as a surrogate measure for price, as differences in price across geographic areas are due largely to differing tax rates (Wagenaar et al., 2009).

Although there is a consensus among researchers that higher alcoholic beverage prices and taxes result in less drinking and fewer drinking-related problems, the actual magnitude of the consumer response to price or tax changes, has been somewhat harder to determine, (Maree, 1998). Moreover, other studies have also indicated that those who consume alcoholic beverages respond to changes in prices in much the same way as they respond to changes in the price of other commodities and the use of pricing policy interventions to tackle alcohol misuse is a recommendable strategy to reduce alcohol consumption, (Chaloupka et al., 2002).

Public policies can affect alcoholic beverage prices in several ways: The first is that national, State, and local governments impose excise taxes on alcoholic beverages. An excise tax is based on the quantity of alcoholic beverages purchased, in contrast to a sales tax, which is based on the price of a purchased good. Current Federal excise tax rates are $0.58 per gallon for beer, between $1.07 and $3.40 per gallon for wine (depending on the type), and $13.50 per proof gallon of distilled spirits (a "proof gallon" is the amount of liquid that contains one-half gallon of pure alcohol). These rates translate into taxes of about 10 cents for each ounce of pure alcohol in beer, 7 cents in wine, and 21 cents in spirits, (Grossman, 2001).

The excise duty rate is an important factor, but not the only factor, in determining the price of alcoholic beverages. An important variable is the resulting significant change in beer consumption. It may be that the existence of exclusive territories encourages dealer-level promotional activities (which tend to increase consumption) but also limits competition, which raises prices (and tends to decrease consumption). This example illustrates a more general point that a given policy can have multiple effects on alcoholic beverage markets. When evaluating alcohol price and tax policies, one needs to consider the context provided by private market forces, other public policies, and general economic conditions. For example, alcohol excise tax rates are not routinely increased to compensate for the effects of inflation. As a result, the “real” (that is, inflation-adjusted) tax rates, have declined over most of the post war period, except for the significant tax increase that took effect in 1991, (Grossman, 2001).

A recent study used survey data to explore the determinants of alcoholic beverage demand among young adults (Grossman et al., 1998). This study featured several innovations: Firstly, it followed the same individuals over time using a “panel” data set formed from the national, Monitoring The Future, (MTF), Study of high school seniors (MTF surveys are widely used to track trends in adolescent substance use and abuse). Starting with the class of 1976, a subset of respondents was selected for follow-up, thus creating the MTF panels. For this study, the researchers used the MTF panels from 1976 through 1985 to create a sample of more than 7,000 individual respondents with an average of three observations per respondent.

Secondly, this study made a conceptual refinement by testing an innovative theory of the demand for addictive goods, (Becker & Murphy, 1988). Previous research had applied economic demand models that account for habit formation by exploring past consumption of alcohol as a possible determinant—through acquired taste or addiction—of current consumption, (Andrikopoulos et al., 1997). The Becker & Murphy theory of addiction, takes this line of reasoning one step further by positing that consumers may anticipate that their current use of alcohol will influence their future demand for it. If so, expected future consumption is also a possible determinant of current alcohol demand, and factors that can be anticipated to affect future consumption also have an impact on current consumption choices. The relevant policy implication of this theory is that long-run demand for addictive goods is actually more responsive to price than is short-run demand (Becker et al., 1994). The study results did support the implication that alcohol demand responds more to price in the long run than it does in the short run, (Grossman et al., 1998). The analysis yielded long-run elasticities, ranging from –0.26 to –1.25, which were a little more than 1.5 times larger, (in absolute magnitude), than the short-run elasticities (which ranged from –0.18 to –0.86). In addition, to supporting the addiction theory, these results suggested that raising alcohol prices would be an effective policy to reduce alcohol consumption among youths.

In contrast, a recent study reported that beer taxes have a relatively small and statistically insignificant effect on teen drinking, (Dee, 1999). Using a limited set of variables from the MTF Study for 1977 through 1992, the researcher examined the effects of beer taxes and minimum legal drinking age laws on the prevalence of teen drinking in three categories (1 or more drinks in the past month, 10 or more drinks in the past month, 5 or more drinks in a row in the past 2 weeks). Dee hypothesized that there might be unobserved, State-specific factors that affect teenagers' alcohol consumption (such as shared cultural attitudes toward drinking). To explore this hypothesis, the study estimated the effects of within-State variation in beer tax rates on consumption.

This approach contrasts with most other studies, which have relied mainly on cross State variation in taxes or prices to identify the effects of these variables on consumption. The results suggested that raising the legal drinking age above 18 significantly reduced the number of high school seniors in each drinking category. However, the within-State comparisons found beer tax rates to have no significant effect in reducing these drinking prevalence rates. The contrast between these findings and the accumulated weight of previous research indicate a clear need for additional studies to clarify how taxes and other factors affect various patterns of drinking among different groups.

Several studies, using data from other countries, shed additional light on the effect of prices on alcohol consumption. Using an approach similar to the 1997 study by Nelson, another research group analysed annual data from Australia, Canada, Finland, New Zealand, Norway, Sweden, and the United Kingdom (Clements et al., 1997). Most data was from the mid-1950s to the mid-1980s, though the periods of analysis varied from country to country. Averaging the results for all seven countries, the researchers found price elasticities of –0.35 for beer, –0.68 for wine, and –0.98 for spirits. In every country, beer demand was the least responsive to price changes. In a reversal of the U.S. findings just mentioned, this study found that wine demand in these countries was less responsive to price changes than was spirits demand.

Another 1997 study employed a similar approach with data from Ontario, Canada, from 1958 through 1987, but incorporated into the analysis, the hypothesis that consumption is influenced not only by such economic factors as price and income, but also by habit formation, (Andrikopoulos et al., 1997). Thus, the study examined past consumption levels of alcoholic beverages as determinants of current consumption. The analysis, which separated domestic and imported alcoholic beverages, estimated price elasticities ranging from –0.34 for imported spirits to –1.02 for imported beer.

Broadly speaking, the results from the international literature on price elasticities are consistent with the results from the domestic literature. Price elasticities for alcoholic beverages are generally negative, meaning that increases in price lead to decreases in the amount consumed. Recent studies, have found these elasticities to be mostly in the "relatively unresponsive" range of –1.0 to zero. Consumption of distilled spirits appears to be more responsive to price changes than is wine consumption, which in turn is more responsive than beer consumption.

Over the last few years, the situation has called for a revisit of existing practices and the development of new control mechanisms on what works in tackling alcohol related problems. The aim has been to establish an evidence-based policy mix that maximises benefits and minimises costs to the society. Many approaches make up the existing UK alcohol policy mix. Measures are in place to prevent drink-driving and the sale of alcohol to minors, to regulate the retail of alcohol in communities, to educate the masses on the risks of alcohol misuse, and to treat those with alcohol dependence. With the exception of taxation, alcohol pricing policies (policies that aim to regulate the price of alcohol in order to decrease consumption and harm), have not been extensively used in the UK.

In addition to alcohol taxation, pricing policies include the imposition of a minimum price per unit of alcohol sold to consumers, bans on the sale below cost of alcohol (which supermarkets in particular engage in when they use alcohol as a loss-leader), and restrictions on sales promotions such as two-for-one, 'happy hours' and volume discounts. A significant body of evidence suggests that pricing policies can be one of the most effective levers at governments' disposal to reduce alcohol consumption and related harm (Meier et al., 2009). This is because extensive research has indicated that, as with most other commodities, changes in the price of alcohol are associated inversely with changes in alcohol consumption (Meier et al., 2009). However, except for alcohol taxation, which is used to some extent in most countries worldwide, the others have not been extensively used, so their potential impacts are yet to be fully understood.

Research, analysis and use of pricing policy interventions to tackle alcohol misuse all rest on an extensive body of research that demonstrates that consumers respond to changes in alcohol prices in much the same way as they respond to changes in the price of other commodities. That is to say, increases in the price of alcohol generally lead to decreases in consumption, and vice-versa, reviews of this evidence includes: (Anderson et al, 2009; Babor et al., 2003; Chaloupka et al, 2002; Cook & Moore, 2002; Elder et al., 2010; Fogarty, 2006; Meier et al., 2009).

While much of this research originates in the United States, Canada and Australia, a growing number of studies are being conducted in Europe. Recent natural experiments in Switzerland, Sweden and Finland, (which experienced alcohol price decreases following liberalisation of alcohol control policies), have been extensively reviewed. Like the balance of international evidence, these European studies also found that alcohol consumption is responsive to changes in prices, (Mäkelä et al., 2009).

The findings on the negative association between alcohol prices and consumption "concurs with a fundamental law of economics called the downward sloping demand curve, which states that as the price of a product rises, the quantity demanded of that product falls", (Chaloupka et al., 2002). This rule has been found to hold even for potentially addictive products such as alcohol, illicit drugs and tobacco; numerous studies have clearly demonstrated that "even addictive behaviours are sensitive to changes in the full price of the substance being used, where the full price of a good reflects not only its monetary cost, but also the health costs, legal costs, and time costs involved in obtaining and using the good. When the full price of an addictive substance rises, consumption of that substance falls. As consumption falls, so do the negative consequences associated with excessive use and addiction", (Pacula & Chaloupka, 2001).

Since 2006, three meta-analyses of the effects of changes in alcohol prices and taxes on drinking have been published. The latest one, published in 2009 by Wagenaar &

colleagues, is based on 112 studies reported in English (Wagenaar, Salois & Komro, 2009). The meta-analysis by Fogarty, (2006) is based on elasticity estimates from those studies that dealt with Alcohol Policy and the Public Good, published in 1994 (Edwards et al., 1994; Fogarty, 2006). The analysis by Gallet, (2007), includes 132 studies of alcohol price, income or advertising elasticities from 24 countries.

The explanation for the low absolute value of own-price elasticity for beer could be that beer is a common beverage consumed during everyday leisure activities or with meals in countries where the studies in these meta-analyses originate. In these countries, beer may be viewed as a necessary commodity among beer drinkers. In some other countries, beer is more of a luxury item with higher price elasticity, (Edwards et al., 1994). This point is highlighted in the case of wine, which seems overall to have a higher absolute value for own-price elasticity than beer. In countries where it is an ordinary beverage with meals, wine can, however, be quite price inelastic, with a low absolute value (Edwards et al., 1994). On the other hand, not so many decades ago, wine was quite a rare luxury item in Nordic countries, where it was used mostly on festive occasions. It is, therefore, no surprise that at that time, wine had an own-price elasticity of -1.6 in Sweden, and in later years the price elasticity of wine has been -1.5 in Norway and -1.3 in Finland (Sundström & Ekström, 1962; Horverak, 1979; Salo, 1990).

As Wagenaar and colleagues emphasize, price elasticities are not inherent properties of alcoholic beverages (Wagenaar, Salois & Komro, 2009). In the same manner, as different uses of alcoholic beverages are reflected in price elasticity values, so the substitution between different alcoholic beverages as well as other commodities mainly depends on the uses of alcoholic beverages (Bruun et al., 1975). For instance, in a country where wine is used as a beverage with meals, a substantial increase in wine prices could increase the consumption of bottled water, but it would hardly increase the use of home-distilled spirits or illicit drugs. In countries where alcoholic beverages are mainly used as intoxicants, increases in alcohol prices are more likely to lead to an increase in the consumption of home-distilled or -brewed beverages or even illicit drugs than of bottled water or milk. Besides the price elasticity for all alcoholic beverages of -0.50 in the short term, Gallet also found a long-term elasticity of -0.82 (Gallet, 2007). Furthermore, he examined the importance of income elasticities for the demand of alcoholic beverages. In his meta-analysis income elasticity for all alcoholic beverages is 0.50, meaning that a 1% increase in consumers' incomes, leads to a 0.5% increase in alcohol consumption (Gallet, 2007).

One of the results in the meta-analysis by Wagenaar and colleagues, is that price changes affects all types of beverages and all kinds of drinker, from light to heavy drinkers. According to their analyses, price and tax changes affect heavy drinking significantly, but the magnitude of the effect on heavy drinkers was less than on overall drinking (Wagenaar, Salois & Komro, 2009). In Switzerland, over four waves of panel data, Gmel and colleagues found that heavier drinkers increased their consumption more sharply in the short term but declined to the level before the tax change in the long term (Gmel et al., 2008).

Furthermore, recent studies on the effects of tax changes on problem indicators, provide strong evidence that changes in alcohol taxes do influence the rates of problem drinking (Babor et al., 2010). For instance, the reduction in alcohol taxation in Finland in 2004 had substantial effects on alcohol-related sudden deaths, overall alcohol-related mortality, and criminality and hospitalizations, (Koski et al., 2007; Herttua, 2010; Mäkelä & Österberg, 2009). In Alaska, the United States, excise duty increases in 1983 and 2002 were associated with substantial reductions in alcohol-related disease mortality, (Wagenaar, Maldonado-Molina & Wagenaar, 2009). Affordability, the term "alcohol affordability" is nowadays also frequently used. This refers to people's ability to buy and consume alcohol, and it is a function of alcohol price and consumers' income, (Rabinovich et al., 2009). According to Rabinovich and colleagues, affordability of alcohol increased between 1996 and 2004 in almost all EU member states. Their analysis also indicated that across the EU, 84% of the increase in alcohol affordability in the period 1966–2004 was driven by increases in income, and only 16% was driven by changes in alcohol prices, (Rabinovich et al., 2009). This is because while incomes have increased considerably across the EU countries, the relative prices of alcoholic beverages have remained relatively stable or fallen (Rabinovich et al., 2009).

In the period 1995–2010, developments in excise duty rates were not at all uniform. In some countries (mainly the Nordics), alcohol excise duty rates were lower in nominal terms in 2010 than in 1995. In some countries, Germany being the most important example, alcohol excise duty rates were held constant in nominal terms in the period 1955–2010. In most of the countries belonging to the EU before May 2004, the nominal values of alcohol excise duty rates were increased but by less than the rate of inflation, meaning than even in these countries the real values of excise duties fell. Only in a few countries, such as Greece and Italy, the nominal values of excise duty rates were increased so much that the excise duty rates also increased in real terms (Österberg, 2011).

Countries that joined the EU in 2004, and later countries such as Bulgaria and Romania, had to increase their alcohol excise duty rates considerably before or when they joined the EU. In almost all new EU member states since 2003, the nominal and real values of alcohol excise duty rates increased between 2004 and 2010. The exceptions are Cyprus, with a constant nominal rate, and Malta, with a constant excise duty rate for beer and a 50% decrease for distilled spirits. Despite the increases in alcohol excise duty rates in the new EU member states, the lowest excise duty rates were still found among them in 2011, Bulgaria and Romania being the clearest examples. Low excise duty rates for beer can also be found among the older member states (Germany, Luxembourg and Spain) (Österberg, 2011).

By 2011, no EU member states had moved from a zero excise duty rate for wine to a positive excise duty rate. In fact, during the creation of the single market in 1993 or in the process of joining it later, four countries (Bulgaria, Hungary, Luxembourg and Romania) abandoned their former positive duty rate for wine.

## 2.3 Benefits and costs of taxation/price increases

The bulk of research evidence shows that higher alcohol taxes or prices lead to reductions in alcohol consumption and in some of the adverse consequences of alcohol abuse. However, how heavily should alcoholic beverages be taxed? Studies of "optimal taxation" provide a framework for answering this question by balancing the benefits of alcohol taxation with the costs that alcohol taxes impose on moderate drinkers and on alcoholic beverage producers.

Several studies have concluded that substantial increases in alcohol taxes would yield social benefits that exceed their costs (Manning et al., 1989, 1991; Pogue & Sgontz, 1989). The social benefits of alcohol taxation flow from reductions in alcohol-related health problems and other adverse consequences of drinking. Economists distinguish alcohol-related consequences that individual drinkers create for themselves, termed the "private costs" of alcohol abuse, from consequences that their drinking imposes on others, termed the "external costs" of alcohol abuse. Important components of the external costs are the thousands of non-drinkers killed by drunk drivers each year and the extra health care costs attributable to drinking that heavily drinking persons do not pay.

Some studies have estimated that alcohol tax rates in the mid- to late 1980's were about one-half the amount necessary to cover the external costs of excessive drinking (Manning et al. 1989, 1991). Other researchers have concluded that during the same period, the benefits of higher taxes would have substantially exceeded the costs and that optimal taxes on alcoholic beverages were probably much higher than the rates that were then in force (Kenkel, 1996; Pogue & Sgontz, 1989). By "optimal tax," these researchers mean tax rates that would balance the reduced social costs of heavy drinking with the losses in enjoyment experienced by more moderate drinkers.

In contrast, another study concluded that alcohol tax levels were too high (Heien, 1995–96). The researcher identified several factors that helped to explain why the conclusion differed from those of previous studies. One was that the study used data from 1993, which already showed the effects of higher tax rates because of the 1991 increase in Federal excise tax rates. In addition, the sharp decline in alcohol-related traffic fatalities in the late 1980's and early 1990's reduced the potential effects of higher taxes and other policy changes.

This study also differed from other studies of the optimal taxation of alcoholic beverages in an important way. Based on an unpublished report, the analysis incorporated the assumption that drinkers have lower health care costs than do non-drinkers. As a result, the study reported that drinkers imposed, at most, zero net health care costs on others, and that drinkers may actually have generated an "external benefit" for non-drinkers by subsidizing their health insurance premiums by as much as $21.6 billion. Under this framework, increased alcohol tax rates would reduce moderate drinking and thereby reduce these external benefits. This factor, which was not considered in previous studies, could be of considerable significance if moderate drinkers are particularly responsive to price changes, as Manning & colleagues, (1995) found.

However, assessing the net effects of alcohol consumption on health is difficult, and assessments may vary over the life span (Dufour, 1996)—complexities that were not considered in the Heien study. For example, low-level alcohol consumption may generate net health benefits for some people, such as postmenopausal women with risk factors for heart disease. However, even low levels of consumption may pose risks to others, such as teenagers, for whom alcohol related traffic crashes are a leading cause of death (Dufour, 1996). Predicting the health impact of an increase in alcohol taxes requires assessing the health effects of all the changes in drinking behaviours that result from the tax change.

Further research is needed to explore the differences between existing studies (as per analyses of findings presented by Grossman et al., 1995; Heien, 1995) and to incorporate new findings into the calculations. For example, none of the studies mentioned in this section measured the potential benefits alcohol taxation may create by reducing violent behaviour (Cook & Moore, 1993).

A study by the Congressional Budget Office (Sammartino, 1990) examined the distributional effects of changes in Federal excise taxes on alcoholic beverages. The study found that, across households, expenditures on alcoholic beverages increased as income increased, but at a slower rate. As a result, lower income households paid less in alcohol excise taxes than did higher income households on average, but the taxes nevertheless consumed a larger proportion of income in lower income households. Adjusting for some of the broader effects of excise tax changes, the study concluded that the regression of alcohol excise tax increases would be reduced by the changes in income tax liability and Social Security benefits that were assumed to result from the excise tax changes. This is due to the fact that a family's income in a particular year may not reflect its economic circumstances very accurately, the study also considered the effects of excise taxes as a share of total household expenditures instead of income.

With this approach, the apparent regressively of alcoholic beverage excise taxes was reduced but not completely eliminated. This finding was reinforced by a more recent study (Lyon & Schwab, 1995), which found that alcohol taxes were still regressive, but slightly less so, when measured with respect to lifetime income instead of current income.

Another issue related to tax fairness concerns employment. The argument is sometimes raised that alcohol tax increases will hurt workers whose livelihoods depend on the production and sale of alcoholic beverages. However, the overall level of employment in the United States is determined by macroeconomic conditions, not adjustments in the tax rates on specific industries. When the national economy is not in a recession or depression, workers laid off or not hired by industries affected by an alcohol tax increase would find employment in other sectors of the economy. The distinction between job losses and worker displacement is crucial: a tax increase could cause a permanent job loss in the alcohol industry, but research on labour economics suggests that the displaced worker almost certainly would find employment elsewhere eventually. Worker displacement remains costly during the spell of unemployment as well as in the long run because displaced workers appear to earn less on their new jobs (Jacobson et al, 1993; Ruhm, 1991).

Following the standard methodology of cost benefit analysis, these transitional costs should be included as an extra cost of increasing alcohol taxes, but most or all of the employment losses in the alcohol industry will eventually be offset by employment gains in other sectors of the economy (Kenkel & Manning 1996).

It is important to note, though, that taxation can only be effective insofar as it increases the price of alcohol, even if by less than the amount of the tax increase; if retailers absorb this change, consumers continue to afford the same quantity of alcohol as before, and taxation thus has a minimal impact on public health and other alcohol-related outcomes. However, in spite of the extensive literature on alcohol taxation as a public health policy instrument to curb harmful and hazardous drinking, there is a limited understanding of the exact effect of alcohol tax increases on alcohol prices, which is a key link in the chain of causality from the tax to improvements in individual and societal outcomes (Kenkel, 2005).

While the economic and public health literature raise questions about the extent to which tax increases are passed on to consumers, this literature does not provide many answers, and the empirical evidence for this is very limited (Kenkel, 2005). Some research on this question, however, was conducted in the US, which shows that the price of some alcoholic beverages increases by more than the tax increase, a phenomenon referred to as 'over-shifting' (Young & Bielinska-Kwapisz, 2002). One study from the US found that over-shifting takes place in both on- and off-trade retailing of alcohol (Kenkel, 2005). Conversely, a study from Switzerland shows that when faced with a modest increase in the taxation of spirits, the industry responded by reducing its share of profits to avoid the loss of customers, resulting in no observed changes in the price of domestic spirits (Heeb et al, 2003).

**2.4 Social interaction**

Research indicates that higher beverage taxes affect not only alcohol consumption but also various alcohol-related problems, the most studied of which is the effect of beer taxes on traffic fatalities. For higher taxes to affect traffic fatalities, it is assumed that the taxes lead to reduced consumption, which in turn leads to fewer traffic fatalities. However, most studies have examined the direct relationship between taxes and traffic fatalities without examining the role of consumption as an intervening variable. Although the previous discussion suggests that overall demand for alcohol is only moderately responsive to price changes, a number of studies have found that higher alcohol taxes are linked to lower traffic fatality rates.

Using U.S. data from 1982 through 1988, one study confirmed earlier findings that higher beer taxes are associated with lower rates of traffic fatalities (Ruhm, 1996). In estimating the determinants of total vehicle fatalities per capita, the researcher found that for every 1-percent increase in the price of beer, the traffic fatality rate declined by nearly the same proportion, or 0.9 percent (this translates into a "fatality price elasticity" of –0.9). When the researcher performed a second analysis using fatalities per total vehicle miles driven, he found nearly identical results.

Moreover, the study showed that rates for night-time fatalities and for people aged 18 through 20 were even more responsive to an increase in beer prices in that a 1-percent increase in price translated into a 1.4-percent decrease in each of these categories of fatalities (a fatality price elasticity of –1.4). On the basis of these results, the researcher calculated that increasing the Federal excise tax on beer in 1988 to the inflation-adjusted equivalent of its value in 1975 would have saved between 3,300 and 3,700 lives annually (Ruhm, 1996).

Similar results have been found in previous studies. In an early research review that focused on drinking drivers under age 22 who were killed in vehicle crashes, the researcher reported fatality price elasticities ranging from –0.7 to –1.3 (Phelps, 1988). More recently, a 1993 review of the literature reported overall fatality price elasticities in the range of –0.5 to –1.0, with a higher range among young adults of between –0.7 to –1.6 (Kenkel, 1993). These studies suggest that a tax increase may be a useful tool to reduce traffic fatalities, particularly among youths and young adults.

A study by Dee, (1999) contended that the reported effects of beer taxes on traffic fatality rates (for example, Ruhm, 1996) were implausibly large and suggested that changes in fatality rates that have been attributed to beer taxes might be linked more strongly with other factors that were omitted from the analyses. Dee, (1999) found no statistically significant effects of beer taxes on youth fatality rates when the analysis included State-specific time-trend variables to account for the effects of unobserved, State-specific factors. The researcher regarded these results as somewhat inconclusive because the trend variables were highly correlated with changes in real beer tax rates over time. However, using an approach similar to that used in previous studies, Dee estimated that the effect of beer taxes on daytime fatalities was somewhat smaller than the effect on night-time fatalities, but still statistically significant and of substantial magnitude. The researcher found this result not plausible, because alcohol is far more likely to be involved in night-time fatalities than daytime fatalities, and concluded that taxes may be less effective at reducing traffic fatalities than has been suggested by a number of published studies. Further research clearly is needed to reconcile the apparent discrepancies between the recent findings of Dee, (1999) and the substantial body of prior research that has found significant effects of prices or taxes on youth fatality rates.

In addition to investigating price effects among youths, researchers have studied price effects in other subgroups with a high risk of traffic crashes: those who engage in binge drinking and those who engage in regular, heavy drinking. One such study investigated the potential effects of price on binge drinking (defined in the study as consuming five or more drinks on one occasion in the past month) (Sloan et al., 1995). The study also investigated several other factors that might influence decisions regarding drinking and driving, including insurance rules, tort liability (rules governing civil suits for injuries or damages), and criminal sanctions. Findings from the study, based on a random sample of 49,199 individuals surveyed between 1984 and 1990, suggested that a 10-percent increase in the price of alcoholic beverages would decrease the number of binge-drinking episodes per month by approximately 8 percent.

The research also indicated that liability and insurance rules were more effective in reducing binge drinking than were criminal sanctions. With any of the factors under study, most of the deterrent effects appeared to influence the decision to binge; the results suggested that once individuals decide to binge, policies probably have little influence on the decision to drive after drinking.

Another 1995 study found, however, that persons who drank extremely heavily were unresponsive to price increases, (Manning et al., 1995). While this study was concerned only with the effects of price on consumption and did not go on to analyse the effects on subsequent problems, such as traffic crashes, the findings implied that among the very heaviest drinkers, the effects of tax increases on alcohol consumption would be limited. Presumably this would translate into a limited effect on traffic crashes among this group, although tax increases could still reduce drunk driving incidents occurring among those who are not extremely heavy drinkers.

Research on the effects of price or tax changes shows considerable variation in the magnitude of estimated effects. Overall, the weight of evidence indicates that prices have modest effects on overall consumption and somewhat more substantial effects on traffic crash fatality rates. It is plausible, although by no means established, that small effects on consumption could have substantial effects on outcomes like traffic fatalities. One way this could be true is if higher prices tend to reduce the riskiest drinking behaviours more than they reduce overall alcohol consumption. If, for example, higher prices reduce the number of drinks consumed on a given occasion of heavy drinking, the effect on the of traffic crashes could be significant, as shown by Phelps, (1988), who found that the relative risk of traffic crashes increased sharply with the sixth drink on a given occasion. Clarifying the nature of price effects on different aspects of consumption—such as frequency of drinking and quantity per occasion—and on important health related outcomes remains a critical task for future research.

Drinking is not only an addictive habit, it is also a social activity and it seems that individuals' decision to drink (such as many other decisions) can be to high extend influenced by behaviour of others (Cook & Moore, 2000). In the previous models the individual is assumed to make his/her decisions in isolations, however Manski, (2000) suggests that in reality individuals interact with each other which leads to correlated behaviour within a group of interacting individuals. Existence of social interaction among youth would imply that adolescents' decision to drink is partly attributable to drinking behaviour of his/her friends and peers in general.

# CHAPTER 3

# RESEARCH METHODS

## 3.1 Research Design

A study that is investigating the effects of the price of beer on amount consumed, calls for a mixed methods research design. This is so because, it requires to trace changes in actual price over a period vis-à-vis corresponding changes in levels of consumption. Secondly, such data must come from a large sample, if not from the entire population under study, to be able to draw credible conclusions regarding the real situation.

According to Creswell & Plano-Clark, (2011), a mixed method is focuses on collecting, analysing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches, in combination, provides a better understanding of research problems than either approach alone.

This study was time-bound, such that it was not possible to collect longitudinal data extending over a long period of time and covering a considerably large data base. Hence, a mixed methods research design was adopted for the study whereby data were collected from only a small cross-section sample at one point in time. Findings from such data are, inevitably, only indicative of what the real situation should be. We cannot extrapolate or generalise from them what the real situation in the population is.

The basic questions concern what to observe and how many observations or cases are needed to assure that the findings will contribute useful information. An article by Luborsky and Rubinstein, (2011) describes the scientific implications of the cultural embeddedness of sampling issues as a pervasive feature in wider society. It then describes common questions about sampling in qualitative research. It concludes by proposing an analogue to statistical power, qualitative clarity, as a set of principles to guide assessments of the sampling techniques.

Research instruments used in this study include questionnaires, interviews and focus group discussions. The conceptual foundations of these techniques has been laid out in Bryman, Bell et al (2014).

### 3.2 Population

According to the 2011 National Population and Housing Census, the population of Swakopmund in that year was 44,700. Hence, it is safe to estimate the current population of Swakopmund at 44 700. This study was a case-study of the town of Swakopmund. Hence, the target population was the entire population of the town of Swakopmund. Since the study was specifically on beer price versus consumption levels, focus was on the drinking population of Swakopmund. However, since one of the aims of the study was also to investigate the proportion of drinkers in the Swakopmund population, respondents were drawn from the entire population of Swakopmund, particularly those that are involve in alcohol activities which were 21 and those frequenting beer outlets were 23. One of the questions put to the respondent was whether the person drinks or not. From this question it was possible to get an idea on what proportion of the Swakopmund population drink. Thereafter, questions concentrated on the characteristics of beer drinking. Hence, the drinking population became the relevant target population.

### 3.3 Sample

If we are to draw a sample at a 95% confidence interval at a 5% reliability level, the sample size that we must draw is calculated as follows:

$$n = \frac{N}{1+\frac{NL^2}{1.96^2\pi(1-\pi)}} = \frac{44{,}700}{1+\frac{44{,}700 \times 0.05^2}{1.96^2 \times 0.5 \times 0.5}} = 381$$

Such a sample is much too large in the researcher's case, given the time limitations faced by the researcher. Hence, a convenient sample of only 44 respondents was covered in this study; consisting of 23 respondents who filled up questionnaire forms; four beer distributors; four small bar owners; two sales persons; and 11 people participated in a focus group discussion.

### 3.4 Research Instrument

#### 3.4.1 Questionnaire

The main instrument used in this study was a structured questionnaire that was administered to 23 beer drinkers who were grouped by stratified sampling. The advantage of using a questionnaire is that a lot of information may be gathered in a relatively short time since many respondents are filling the form at the same time. This is cost-effective; and the respondent may provide information that they would have felt shy to mention in, say, person-to-person interviews. Furthermore, the respondent is free to take time to think of the question and even to refer to documents if they do not remember what response to give. This is what makes a questionnaire the preferred instrument of data collection in many studies. The questions contained in the questionnaire, were: at what age the respondent started drinking; how they started drinking; why, where and how much they drink; and their opinion on the effect of pricing on the amount of beer consumed. The questionnaire itself appears as Appendix D to this report.

### 3.4.2 Structured interviews

In addition to the structured questionnaire, face-to-face interviews were conducted with four beer distributors, four small bar owners, and two sales persons. Again, the selection of respondents was by stratified sampling. The interviews were on exactly the same questions that were asked in the questionnaire. The idea was to hear about the same thing from different sources so that the message obtained is more credible. The checklists of questions that were posed in the interviews appear as Appendices E.

### 3.4.3 Focus group discussion

Apart from the questionnaire and structured interviews that were conducted, a focus group discussion was conducted involving 11 participants drawn from different walks of life: males and females; employed and unemployed; civil servants and self-employed; etc. When it comes to qualitative data, focus group discussions may yield better quality data than structured questionnaires. This is because there is room to probe issues when a point raised is not very clear and participants augment each other's statements. A point raised by one participant may remind another participant who had already spoken something they had forgotten when they spoke and so they come back and add on what they had reported earlier. This is not possible if one is using a rigid structured questionnaire. All in all, more data may be collected this way. Suffice it to say that the advantage of focus group discussions over questionnaires is only with respect to qualitative data; as was the case in this study. You cannot source quantitative data from focus group discussions. The Focus Group Discussion in this report appears as Appendix F.

### 3.5 Procedures

This research collected data from a sample of 44 respondents and used 3 research tools namely: structured interviews, focus group discussions and questionnaires. Samples of eligible respondents were identified by the researcher through stratified sampling and subsequently, appointments were fixed with each stratum.

### 3.6 Data Analysis

The Statistical Package for Social Sciences (SPSS) was used to analyse the data by generating frequencies; drawing graphs; and computing some descriptive statistics and correlation measures between different variables. However, as mentioned earlier, when discussing the sampling procedures that were adopted in this research, the samples that were covered were very small, compared to what should have been the case. Hence, rigorous statistical computations that are involved in inferential Statistics were avoided. Whatever measures that were calculated remain indicative only of what the situation is. For instance, suppose three of the four beer distributors give a certain opinion, the conclusion we reach in the analysis is only that most of the beer distributors feel that way. Emphasis is not on the figure 75% (three out of four) per se; rather that opinion is relatively more pronounced than the other. Hence, even when it comes to graphs, figures are not reflected on the bars because it does not make much sense to talk about 40% or 75% of four people. That is why some calculations were done only for the 23 respondents who filled in the questionnaire. No similar calculations were done for the other categories of respondents. Not even tables were generated for such respondents

### 3.7 Research Ethics

This researcher acquired permission from beer suppliers in Swakopmund to interview the sales persons. For the other groups such as structured interviews and focus group discussions no formal permission was required. The interview schedule was formulated; and subsequently the researcher made appointments with all the potential respondents. After confirmation, the researcher visited the identified respondents and focus group members at the agreed times, the questionnaires were given to the identified beer consumers one by one to complete. The data collected is stored in a lockable safe, so that it is not accessible to anybody but the researcher and will be destroyed after 5 years.

# CHAPTER 4:

# RESULTS AND DISCUSSIONS

## 4.1 Demographics of respondents

### 4.1.1 Distribution of respondents by age

The first question posed to a potential respondent was whether they drink or not. A questionnaire form was, then, given to only those who said they drink. The sample to whom the questionnaire was administered consists of 23 respondents aged as indicated in Table 1 below. While the mean age was 33.6 years, half of the respondents (median age) were aged below 31.5 years and three-quarters (75$^{th}$ percentile) were below the age of 37.3years. Average variation of age from the mean age (standard deviation) was 7.3 years.

| Age-group | Frequency | Percent | Cumulative percent |
|---|---|---|---|
| **20-24** | 1 | 4.3 | 4.5 |
| **25-29** | 6 | 26.1 | 31.8 |
| **30-34** | 7 | 30.4 | 63.6 |
| **35-39** | 4 | 17.4 | 81.8 |
| **40-44** | 2 | 8.7 | 90.9 |
| **45-49** | 0 | 0 | 90.9 |
| **50-54** | 2 | 8.7 | 100.0 |
| **Total** | 22 | 95.7 | |
| **Age not stated** | 1 | 4.3 | |
| **Grand total** | **23** | **100.0** | |

*Table 1 Descriptive statistics of the ages of the respondents*

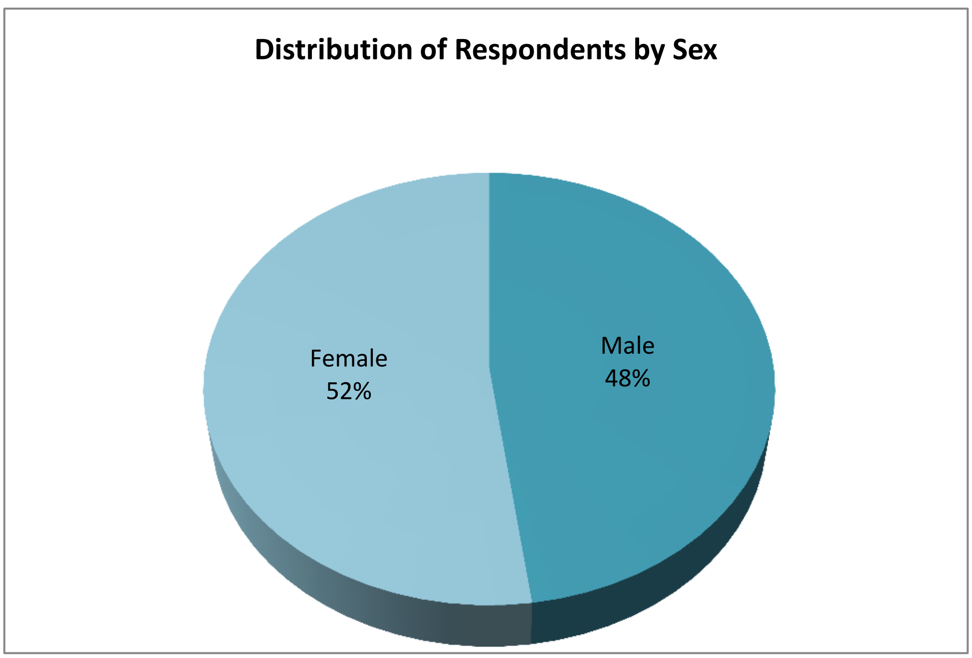
| | | | | |
|---|---|---|---|---|
| N | 22a | Range | | 31 |
| Mean | 33.59 | Standard deviation | | 7.333 |
| Median | 31.50 | Standard Error | | 1.563 |
| Mode | 29b | Percentile | 25 | 29.00 |
| Minimum | 21 | | 50 | 31.50 |
| Maximum | 52 | | 75 | 37.25 |

*Table 2 Descriptive statistics of the ages of the respondents*

a) Age was not stated for one of the 23 respondents
b) There are multiple modes. The minimum one is given

### 4.1.2 Sex of respondents

*Figure 1 Distribution of respondents by gender*




Based on gender, there were only marginally more females (52%) than males.

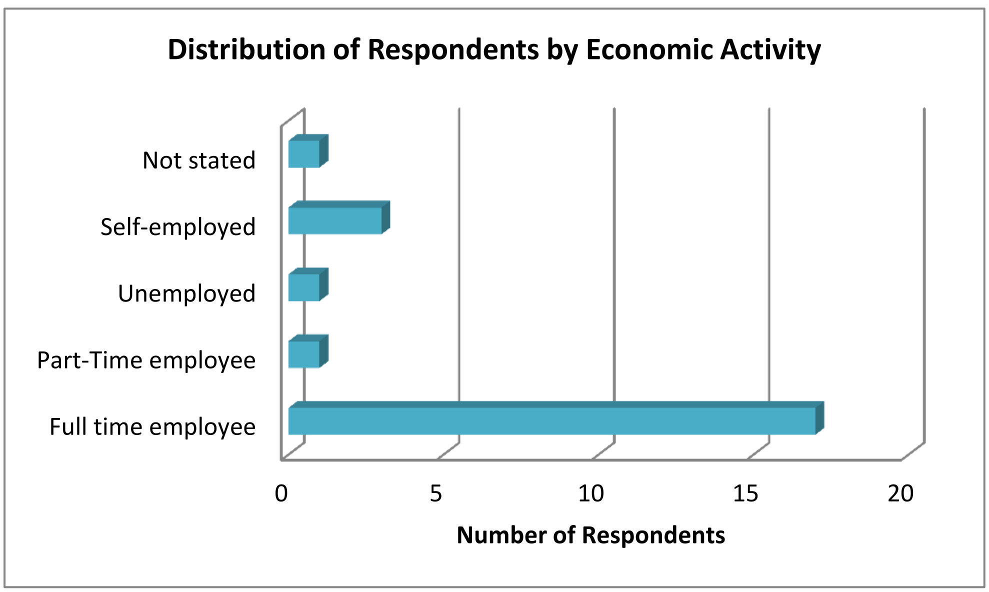
### 4.1.3 Economic activity of respondents

On the economic activity, only one respondent was unemployed. As indicated in table 3 below, three-quarters of all respondents were full-time employees while slightly over ten percent were self-employed.

| | | Frequency | Percent |
|---|---|---|---|
| **Valid** | Full time employee | 17 | 73.9 |
| | Part-Time employee | 1 | 4.3 |
| | Unemployed | 1 | 4.3 |
| | Self-employed | 3 | 13.0 |
| | Not stated | 1 | 4.3 |
| | **Total** | **23** | **100.0** |

*Table 3 Economic activities of respondents*

*Figure 2 Distribution of respondent's economic activities*



Above, then, are the demographic characteristics of the respondents who filled-in the questionnaire: middle-aged people drawn more or less equally from each gender; and most of whom had an income of some sort; being either full-time employees or self-employed. As we discuss their responses on drinking, we will have to bear in mind these characteristics.

## 4.2 Beer drinking characteristics

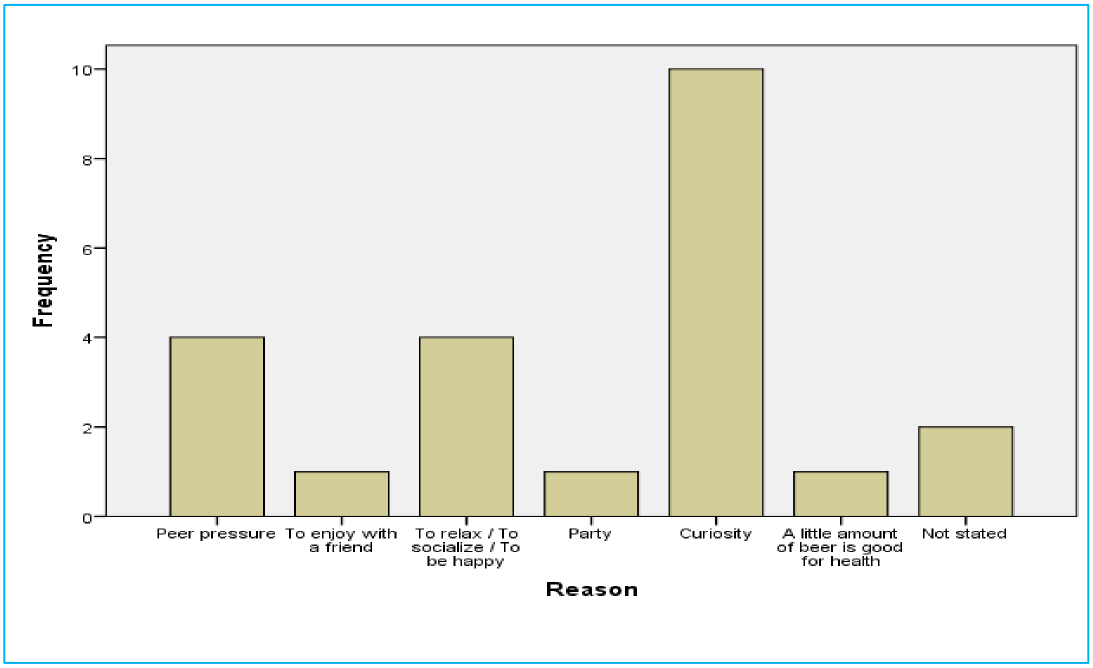
### 4.2.1 Reason for drinking beer ever

Right at the outset, the respondent was asked the reason for drinking beer the first time ever. The table and graph below summarise the reasons.

| | | Frequency | Percent |
|---|---|---|---|
| | Peer pressure | 4 | 17.4 |
| | To enjoy with a friend | 1 | 4.3 |
| | To relax / To socialize / To be happy | 4 | 17.4 |
| | Party | 1 | 4.3 |
| | Curiosity | 10 | 43.5 |
| | A little amount of beer is good for health | 1 | 4.3 |
| | Not stated | 2 | 8.7 |
| | **Total** | **23** | **100.0** |

*Table 4 Reason for drinking beer the first time*

*Figure 3 Reason for drinking the first beer ever*




It is obvious from the above table and graph that the three outstanding reasons (in order of prominence) as to why respondents drank their first beer were as follows:

1. Curiosity;
2. Peer pressure; and
3. To relax / socialise / be happy.

As the researcher pointed out earlier, the sample was very small and as such the researcher will not attach too much emphasis on the percentages, per se, as to who said what. Suffice it to say that almost half of all the respondents said they drank their first beer merely out of curiosity; two out of ten gave peer pressure as the reason; and an equal proportion said socialisation was the motive.

However, when we explore the reasons for starting drinking, we notice some differences, sex-wise, as displayed in Table 5 below. Whereas curiosity was the most prominent reason in the general population, the proportion citing this reason was significantly more pronounced among females than among males. Furthermore, the prominence of peer pressure and to socialise is in reverse order when it comes to comparing males and females.

| | | | Sex | | Total |
|---|---|---|---|---|---|
| | | | Male | Female | |
| Reason for drinking beer first time | Peer pressure | Count | 3 | 1 | 4 |
| | | % within Sex | 27.3% | 8.3% | 17.4% |
| | To enjoy with a friend | Count | 1 | 0 | 1 |
| | | % within Sex | 9.1% | 0.0% | 4.3% |
| | To relax / To socialize / To be happy | Count | 1 | 3 | 4 |
| | | % within Sex | 9.1% | 25.0% | 17.4% |
| | Party | Count | 0 | 1 | 1 |
| | | % within Sex | 0.0% | 8.3% | 4.3% |
| | Curiosity | Count | 4 | 6 | 10 |
| | | % within Sex | 36.4% | 50.0% | 43.5% |
| | A little amount of beer is good for health | Count | 1 | 0 | 1 |
| | | % within Sex | 9.1% | 0.0% | 4.3% |
| | Not stated | Count | 1 | 1 | 2 |
| | | % within Sex | 9.1% | 8.3% | 8.7% |
| Total | | Count | 11 | 12 | 23 |
| | | % within Sex | 100.0% | 100.0% | 100.0% |

*Table 5 Reason for drinking beer first time by sex*

### 4.2.2 Age at first beer drinking

Tracing the age at which one started drinking, table 6 shows that the youngest first timer was 10 years of age. A quarter of the respondents were already drinking by the age of 16 while a third (i.e. one out of three) had started drinking by the age of 18. Eighteen is the legal age at which one may drink in Namibia. Data in the table below implies that a good portion of respondents started drinking at school-going age; which is dangerous indeed to the society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| **Valid** | 10 | 1 | 4.3 | 4.8 | 4.8 |
| | 13 | 1 | 4.3 | 4.8 | 9.5 |
| | 15 | 1 | 4.3 | 4.8 | 14.3 |
| | 16 | 2 | 8.7 | 9.5 | 23.8 |
| | 18 | 2 | 8.7 | 9.5 | 33.3 |
| | 20 | 4 | 17.4 | 19.0 | 52.4 |
| | 21 | 1 | 4.3 | 4.8 | 57.1 |
| | 23 | 1 | 4.3 | 4.8 | 61.9 |
| | 24 | 1 | 4.3 | 4.8 | 66.7 |
| | 25 | 5 | 21.7 | 23.8 | 90.5 |
| | 26 | 1 | 4.3 | 4.8 | 95.2 |
| | 30 | 1 | 4.3 | 4.8 | 100.0 |
| | Total | 21 | 91.3 | 100.0 | |
| **Missing** | System | 2 | 8.7 | | |
| **Total** | | **23** | **100.0** | | |

*Table 6 Age at first beer drinking*

Gender-wise, there are some differences in age at first drink as shown in Table 4.6 below. Almost half of the male respondents started drinking at the illegal age of below 18 while less than one in ten girls did that.

Two-thirds of the males had started drinking by the early legal age of drinking of 18-20 while just about four out of every ten females had done so.

Furthermore, while only a third of the males had their first drink in the age range of 21-29, noteworthy is the fact that none of them waited to start drinking till the thirties. On the contrary, as many as half of the females had their first drink at the age of 21-29 while there were cases of females waiting to start drinking until they were in the thirties. The conclusion is that, in general males started drinking at an earlier age than females.

| | | | Sex | | Total |
|---|---|---|---|---|---|
| | | | Male | Female | |
| Age | < 18 | Count | 4 | 1 | 5 |
| | | % within Sex | 44.4% | 8.3% | 23.8% |
| | 18-20 | Count | 2 | 4 | 6 |
| | | % within Sex | 22.2% | 33.3% | 28.6% |
| | 21-29 | Count | 3 | 6 | 9 |
| | | % within Sex | 33.3% | 50.0% | 42.9% |
| | 30+ | Count | 0 | 1 | 1 |
| | | % within Sex | 0.0% | 8.3% | 4.8% |
| Total | | Count | 9 | 12 | 21 |
| | | % within Sex | 100.0% | 100.0% | 100.0% |

*Table 7 Age at first drink by sex*

### 4.2.3 Initiator to beer drinking

As to who introduced the respondent to drinking, Table 8 shows that most of the respondents were introduced to drinking by friends. This was the case in some 80% of the respondents. However, while a few of the males were introduced into drinking by family members, this was not the case in any of the females.

| | | | Sex | | Total |
|---|---|---|---|---|---|
| | | | Male | Female | |
| Introducer to drinking | Family member | Count | 2 | 0 | 2 |
| | | % within Sex | 18.2% | 0.0% | 8.7% |
| | Friends | Count | 8 | 11 | 19 |
| | | % within Sex | 72.7% | 91.7% | 82.6% |
| | Myself | Count | 1 | 1 | 2 |
| | | % within Sex | 9.1% | 8.3% | 8.7% |
| Total | | Count | 11 | 12 | 23 |
| | | % within Sex | 100.0% | 100.0% | 100.0% |

*Table 8 Who introduced you into beer drinking?*

The fact that over 80% of the respondents were introduced to drinking by friends corroborates the earlier finding that peer pressure is a substantial reason for starting drinking.

### 4.2.4 Place where beer is bought from most often

The table below shows that shebeens were the most common source of beer to the respondents: as many as seven out of ten respondents access beer at shebeens. Since shebeens are in residential areas, that makes it easy for people to access beer.

| | | Frequency | Percent |
|---|---|---|---|
| **Valid** | House | 3 | 13.0 |
| | Shebeen | 16 | 69.6 |
| | Shebeen and Club | 1 | 4.3 |
| | Bottle store/Shop | 3 | 13.0 |
| | **Total** | **23** | **100.0** |

*Table 9 Most frequent source of beer*

### 4.2.5 Drinking rate

**Self-rating on the drinking scale**

After drinking characteristics, the next issue we investigated was the rate of drinking. This was done in three ways: How one rates oneself on the drinking scale; How much (by volume) one drinks and Frequency of drinking.

Asked to rate oneself where they fall on the scale of drinking, Table 10 shows that slightly more than half of the respondents considered themselves to be light drinkers. Combining this category with that of ‘moderate’ drinkers we establish that well over three-quarters of the respondents consider themselves to be ‘substantial’ drinkers.

| | | | Sex | | Total |
|---|---|---|---|---|---|
| | | | Male | Female | |
| Drinking rate | Infrequent drinker | Count | 0 | 2 | 2 |
| | | % within Sex | 0.0% | 16.7% | 8.7% |
| | Light drinker | Count | 7 | 6 | 13 |
| | | % within Sex | 63.6% | 50.0% | 56.5% |
| | Moderate drinker | Count | 2 | 3 | 5 |
| | | % within Sex | 18.2% | 25.0% | 21.7% |
| | Heavy drinker | Count | 1 | 0 | 1 |
| | | % within Sex | 9.1% | 0.0% | 4.3% |
| | Problem drinker | Count | 0 | 1 | 1 |
| | | % within Sex | 0.0% | 8.3% | 4.3% |
| | Not stated | Count | 1 | 0 | 1 |
| | | % within Sex | 9.1% | 0.0% | 4.3% |
| Total | | Count | 11 | 12 | 23 |
| | | % within Sex | 100.0% | 100.0% | 100.0% |

*Table 10 Where do you place yourself on the drinking scale?*

By extrapolation, $\left(\text{using the formula } p \pm t_{\alpha/2, n-1}\sqrt{\frac{pq}{n}}\right)$ we establish at 95% level of confidence that the proportion of substantial drinkers in the society is between 64% and 98%. Noteworthy is the fact that there was at least one respondent who acknowledged to be a heavy drinker; and even another who said they were a problem drinker. Sex-wise, there was not much difference between males and females in how one rated oneself on the drinking scale. In fact, the respondent who owned up of being a problem drinker was a female.

The foregoing analysis based on how individuals rated themselves is subjective, as a heavy drinker may not realise that they are; or may not want to own up. A more objective analysis would be based on the amount of alcohol drank and the frequency of drinking. From such data, one can objectively conclude at what level the rate of drinking is pitched. However, before we discuss the amount of beer consumed we turn first to the perception of respondents on the easiness of access to beer. The more accessible beer is the more is likely to be consumed; other things being equal.

### 4.2.6 Easiness of access to beer

The table above indicates that some seven out of ten respondents say that beer is very easily accessible.

| | | Frequency | Percent |
|---|---|---|---|
| **Valid** | Very difficult | 4 | 17.4 |
| | Difficult | 2 | 8.7 |
| | Easy | 8 | 34.8 |
| | Very easy | 8 | 34.8 |
| | Not stated | 1 | 4.3 |
| | Total | 23 | 100.0 |

*Table 11 Easiness of access to beer*

### 4.2.7 Cost of beer

Even though, 30.4% of the respondents indicated that beer cost N$ 18.00, 750ml and 13% respondents reflect that 350m cost N$ 10.00 which is reasonable. There are places were beer cost N$ 12.00, N$ 7.00 and N$ 3.00 for 750ml, 500ml and 350ml respectively, which is way below market price.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 12.00 | 1 | 4.3 | 5.3 | 5.3 |
| | 13.00 | 1 | 4.3 | 5.3 | 10.5 |
| | 15.00 | 1 | 4.3 | 5.3 | 15.8 |
| | 16.00 | 2 | 8.7 | 10.5 | 26.3 |
| | 17.00 | 2 | 8.7 | 10.5 | 36.8 |
| | 17.50 | 1 | 4.3 | 5.3 | 42.1 |
| | 18.00 | 7 | 30.4 | 36.8 | 78.9 |
| | 20.00 | 3 | 13.0 | 15.8 | 94.7 |
| | 24.00 | 1 | 4.3 | 5.3 | 100.0 |
| | Total | 19 | 82.6 | 100.0 | |
| Missing | System | 4 | 17.4 | | |
| Total | | 23 | 100.0 | | |

*Table 12 Cost of last 750ml beer*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 7.00 | 2 | 8.7 | 22.2 | 22.2 |
| | 8.00 | 1 | 4.3 | 11.1 | 33.3 |
| | 10.00 | 1 | 4.3 | 11.1 | 44.4 |
| | 14.00 | 2 | 8.7 | 22.2 | 66.7 |
| | 15.00 | 2 | 8.7 | 22.2 | 88.9 |
| | 30.00 | 1 | 4.3 | 11.1 | 100.0 |
| | Total | 9 | 39.1 | 100.0 | |
| Missing | System | 14 | 60.9 | | |
| Total | | 23 | 100.0 | | |

*Table 13 Cost of last 500ml beer*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 3.00 | 1 | 4.3 | 10.0 | 10.0 |
| | 5.00 | 2 | 8.7 | 20.0 | 30.0 |
| | 8.00 | 1 | 4.3 | 10.0 | 40.0 |
| | 9.00 | 1 | 4.3 | 10.0 | 50.0 |
| | 10.00 | 3 | 13.0 | 30.0 | 80.0 |
| | 11.50 | 1 | 4.3 | 10.0 | 90.0 |
| | 12.00 | 1 | 4.3 | 10.0 | 100.0 |
| | Total | 10 | 43.5 | 100.0 | |
| Missing | System | 13 | 56.5 | | |
| Total | | 23 | 100.0 | | |

*Table 14 Cost of last 350ml beer*

### 4.2.8 Amount of beer consumed at one sitting

The Namibia Breweries Ltd produces beer in three bottle sizes: 350mls; 500mls and 750mls. Considering price per bottle bought, the larger the bottle the lower the price. Hence, it is more economic to buy large bottles and these are the ones found most in shebeens. In hotels, you never find such bottles as less profit is made from them while in shebeens you rarely find small bottles because shebeen customers are normally from the poorer ranks of the society who want to maximise value on their purchase. Below we explore the quantity drank by an individual at one sitting.

Responses on how many bottles one drinks at one sitting were from 14 respondents for 750ml bottles; six respondents for 500ml bottles; and nine respondents for 350ml bottles. Obviously, some respondents reported on more than one size of bottles. Starting with the largest size, which is the most common in shebeens, we notice that there is a very big variation ranging from one bottle to the amazing quantity of 24 bottles; that is 180 litres. For the 500ml bottles the maximum reported was eight bottles (or 40 litres) while with respect to the 350ml bottles the maximum was 12 bottles, which is 39.6 litres. By any standards, these are not small quantities.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Number | 1 | 1 | 4.3 | 7.1 | 7.1 |
| | 2 | 3 | 13.0 | 21.4 | 28.6 |
| | 3 | 2 | 8.7 | 14.3 | 42.9 |
| | 4 | 2 | 8.7 | 14.3 | 57.1 |
| | 5 | 1 | 4.3 | 7.1 | 64.3 |
| | 6 | 1 | 4.3 | 7.1 | 71.4 |
| | 10 | 2 | 8.7 | 14.3 | 85.7 |
| | 12 | 1 | 4.3 | 7.1 | 92.9 |
| | 24 | 1 | 4.3 | 7.1 | 100.0 |
| | Total | 14 | 60.9 | 100.0 | |

*Table 15 Number of 750ml bottles consumed at a time*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Number | 2 | 1 | 4.3 | 16.7 | 16.7 |
| | 3 | 1 | 4.3 | 16.7 | 33.3 |
| | 4 | 3 | 13.0 | 50.0 | 83.3 |

| | | | | | |
|---|---|---|---|---|---|
| | 8 | 1 | 4.3 | 16.7 | 100.0 |
| | Total | 6 | 26.1 | 100.0 | |

*Table 16 Number of 500ml bottles consumed at a time*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Number | 4 | 2 | 8.7 | 22.2 | 22.2 |
| | 5 | 2 | 8.7 | 22.2 | 44.4 |
| | 6 | 3 | 13.0 | 33.3 | 77.8 |
| | 12 | 2 | 8.7 | 22.2 | 100.0 |
| | Total | 9 | 39.1 | 100.0 | |

*Table 17 Number of 350ml beer consumed at a time*

| Measure | Number of 750ml bottles drank at a time | Number of 500ml bottles drank at a time | Number of 350ml bottles drank at a time |
|---|---|---|---|
| **N** | 14 | 6 | 9 |
| **Mean** | 6.29 | 4.17 | 6.67 |
| **Median** | 4 | 4 | 6 |
| **Mode** | 2 | 4 | 6 |
| **Std. Dev.** | 6.145 | 2.041 | 3.122 |
| **Range** | 23 | 6 | 8 |
| **Minimum** | 1 | 2 | 4 |
| **Maximum** | 24 | 8 | 12 |
| **Percentile 25** | 2.00 | 2.75 | 4.50 |
| **50** | 4.00 | 4.00 | 6.00 |
| **75** | 10 | 5.00 | 9.00 |

*Table 18 Summary statistics of beer quantities drank at a time*

Table 17 gives a summary of the statistics of beer quantities drank at a time. We notice from the table that the average number of 750ml bottles drank by an individual at one sitting is 6.29; 4.17 for 500ml bottles; and 6.67 for 350ml bottles. Because of the big variation of the quantities drank (as shown by the standard deviation) the mean may not be an accurate description of the reality as it is affected by outliers. In this case a better descriptive measure is the median. The median in this table tells us that half of the 750ml beer bottle drinkers drink at least four of such bottles at one sitting. That is the same figure as for those who drink 500ml bottles; while half of those who drink 350ml bottles drink at least six bottles per sitting.

### 4.2.9 Frequency of drinking

Apart from the quantity drank; another angle from which we can look at the drinking of an individual is by considering frequency of drinking. Table 18 shows the drinking frequency vis-à-vis number of bottles that were drank at one sitting, irrespective of size of bottle. The table shows that if we put together the frequencies for 'Every day' and 'At least once a week but not every day' more than a half of all respondents fall in these two categories; irrespective of the number of bottles drank per sitting. Specifically, we have more than 80% of those who drink ten or more bottles per sitting, drinking every day or at least once a week but not every day. This is alarming indeed. The frequency of drinking in order of prominence and irrespective of the number of bottles drank per sitting, is as follows:

1. At least once a week but not every day;
2. At least once a month but not less than once a week;
3. Every day.

The above three frequency rates of drinking account for more than 90% of all the drinking that was reported on. Such frequency rates, coupled with the number of bottles drank per sitting, give a terrifying picture indeed.

| Frequency of drinking | Number of bottles of all sizes drank at a time | | | | Total |
|---|---|---|---|---|---|
| | 1 – 3 | 4 – 6 | 7 - 9 | 10+ | |
| **Everyday** | 1 (12.5%) | 1 (7.1%) | 0 (0.0%) | 1 (16.7%) | 3 (10.3%) |
| **At least once a week but not every day** | 4 (50.0%) | 7 (50.0%) | 1 (100.0%) | 4 (66.7%) | 16 (55.2%) |
| **At least once a month but not less than once a week** | 3 (37.5%) | 4 (28.6%) | 0 (0.0%) | 1 (16.7%) | 8 (27.6%) |
| **More than once a year but not less than once a month** | 0 (0.0%) | 1 (7.1%) | 0 (0.0%) | 0 (0.0%) | 1 (3.4%) |
| **Once a year or less** | 0 (0.0%) | 1 (7.1%) | 0 (0.0%) | 0 (0.0%) | 1 (3.4%) |
| **Total** | 8 (100%) | 14 (100%) | 1 (100%) | 6 (100%) | 29 (100%) |

*Table 19 Frequency of drinking versus number of bottles drank per sitting*

### 4.3 Views about beer consumption

#### 4.3.1 Do you agree that beer drinking is very high?

Regarding opinion on the rate of drinking in the country, as many as 86% agree that the rate of drinking is high and one possible reason for that is the low price of beer.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | Strongly agree | 10 | 43.5 | 45.5 | 45.5 |
| | Agree | 9 | 39.1 | 40.9 | 86.4 |
| | Disagree | 1 | 4.3 | 4.5 | 90.9 |
| | Strongly disagree | 2 | 8.7 | 9.1 | 100.0 |
| | Total | 22 | 95.7 | 100.0 | |
| | Not stated | 1 | 4.3 | | |
| Total | | 23 | 100.0 | | |

*Table 20 Do you agree that beer drinking is very high*

### 4.3.2 How strongly does low beer price influence consumption

The two tables below show that half of the respondents very strongly think that low beer price influences consumption. Furthermore, half of all the respondents either very strongly agree, or just agree, to the suggestion that increasing the price of beer would lead to reduction in beer consumption.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | Very strongly | 11 | 47.8 | 50.0 | 50.0 |
| | Strongly | 5 | 21.7 | 22.7 | 72.7 |
| | Moderately | 3 | 13.0 | 13.6 | 86.4 |
| | Weakly | 2 | 8.7 | 9.1 | 95.5 |
| | Very weakly | 1 | 4.3 | 4.5 | 100.0 |
| | Total | 22 | 95.7 | 100.0 | |
| | Not stated | 1 | 4.3 | | |
| **Total** | | 23 | 100.0 | | |

*Table 21 How strongly does low beer price influence consumption?*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | Very strongly | 3 | 13.0 | 13.6 | 13.6 |
| | Strongly | 5 | 21.7 | 22.7 | 36.4 |
| | Moderately | 3 | 13.0 | 13.6 | 50.0 |
| | Weakly | 4 | 17.4 | 18.2 | 68.2 |
| | Very weakly | 7 | 30.4 | 31.8 | 100.0 |
| | Total | 22 | 95.7 | 100.0 | |
| | Not stated | 1 | 4.3 | | |
| **Total** | | 23 | 100.0 | | |

*Table 22 Do you agree that an increase on beer price reduces consumption?*

#### 4.3.3 What influences beer consumption?

As much as the two tables above suggest that respondents think that low price is what brings about high beer consumption; and that increasing the price would lead to reduction in beer consumption, that may not be the reality. The price of a 750ml beer bottle in a shebeen is currently about N$ 20 while in the mid-90s it was about N$ 5. That means the price has increased over four-fold; i.e. an increase of 400%. Yet beer consumption has not, at least not significantly, subsided. Therefore, price is not the factor (at least not the only factor) that determines beer consumption.

Price being not the only factor that influences beer consumption respondents were asked what they think influences beer consumption. The table below suggests three factors listed in order of importance as follows:

1. Price;
2. Proliferation of social events;
3. Having the means to buy the beer.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| | Not stated | 1 | 4.3 | 4.3 | 4.3 |
| | Price | 8 | 34.8 | 34.8 | 39.1 |
| | Licensing restriction | 3 | 13.0 | 13.0 | 52.2 |
| | Income | 4 | 17.4 | 17.4 | 69.6 |
| | Social events | 6 | 26.1 | 26.1 | 95.7 |
| | Social factors e.g. poverty and unemployment | 1 | 4.3 | 4.3 | 100.0 |
| | **Total** | **23** | **100.0** | **100.0** | |

*Table 23 What influences beer consumption?*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| % increase | 1-10 | 10 | 43.5 | 50.0 | 50.0 |
| | 10-20 | 3 | 13.0 | 15.0 | 65.0 |
| | 20-30 | 3 | 13.0 | 15.0 | 80.0 |
| | 30-40 | 2 | 8.7 | 10.0 | 90.0 |
| | 40 and above | 2 | 8.7 | 10.0 | 100.0 |
| | Total | 20 | 87.0 | 100.0 | |
| Percentage | not stated | 3 | 13.0 | | |
| Total | | 23 | 100.0 | | |

*Table 24 By what percentage does price increase reduce beer consumption?*

Thus, although price comes at Number 1 as the most important factor influencing beer consumption, it does not stand out (in view of the proportion of respondents saying so) prominently above the other factors. This seems to corroborate what we argued earlier on by comparing price and consumption in the 90s with the current ones. A follow-up question on the effect of price on consumption was what percentage of increase in price would lead to reduction in consumption.

We see from Table 23 that surprisingly almost as many as half of the respondents feel that a mere price increase of less than 10% would reduce beer consumption. Going by the comparison of prices in the 90s with current ones, this assertion does not seem to be true. Coming at Number 2 in the prominence of the factors that influence beer consumption is the proliferation of social events. Earlier we mentioned socialisation as one of the driving forces that make people drink. Therefore, other things being equal, if there are many social events there will be more drinking.

The third factor in order of importance, that influences beer consumption as suggested by respondents, is availability of income. There are mining activities in the neighbourhood of Swakopmund as well as activities related to the tourism industry that act as sources of income. From such sources residents may have the necessary income to afford drinking.

### 4.3.4 At what price of beer do you think beer consumption reduce?

The tables below shows that to reduces beer consumption, beer price should be between N$ 15.00 to N$ 40.00 for all the 750ml, 500ml and 350ml.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 10.00 | 2 | 8.7 | 10.5 | 10.5 |
| | 10.50 | 1 | 4.3 | 5.3 | 15.8 |
| | 11.00 | 1 | 4.3 | 5.3 | 21.1 |
| | 14.00 | 1 | 4.3 | 5.3 | 26.3 |
| | 15.00 | 3 | 13.0 | 15.8 | 42.1 |
| | 16.00 | 1 | 4.3 | 5.3 | 47.4 |
| | 18.00 | 2 | 8.7 | 10.5 | 57.9 |
| | 20.00 | 3 | 13.0 | 15.8 | 73.7 |
| | 25.00 | 1 | 4.3 | 5.3 | 78.9 |
| | 30.00 | 1 | 4.3 | 5.3 | 84.2 |
| | 40.00 | 3 | 13.0 | 15.8 | 100.0 |
| | Total | 19 | 82.6 | 100.0 | |
| Missing | System | 4 | 17.4 | | |
| Total | | 23 | 100.0 | | |

*Table 25 At what price of 750ml bottle can beer consumption reduce?*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 6.00 | 2 | 8.7 | 16.7 | 16.7 |
| | 10.00 | 2 | 8.7 | 16.7 | 33.3 |
| | 15.00 | 2 | 8.7 | 16.7 | 50.0 |
| | 16.00 | 1 | 4.3 | 8.3 | 58.3 |
| | 17.00 | 2 | 8.7 | 16.7 | 75.0 |
| | 18.00 | 1 | 4.3 | 8.3 | 83.3 |
| | 25.00 | 1 | 4.3 | 8.3 | 91.7 |
| | 30.00 | 1 | 4.3 | 8.3 | 100.0 |
| | Total | 12 | 52.2 | 100.0 | |
| Missing | System | 11 | 47.8 | | |
| Total | | 23 | 100.0 | | |

*Table 26 At what price of 500ml bottle can beer consumption reduce?*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 4.00 | 1 | 4.3 | 6.7 | 6.7 |
| | 5.00 | 2 | 8.7 | 13.3 | 20.0 |
| | 7.00 | 1 | 4.3 | 6.7 | 26.7 |
| | 9.00 | 1 | 4.3 | 6.7 | 33.3 |
| | 10.00 | 1 | 4.3 | 6.7 | 40.0 |
| | 13.00 | 2 | 8.7 | 13.3 | 53.3 |
| | 14.00 | 1 | 4.3 | 6.7 | 60.0 |
| | 15.00 | 2 | 8.7 | 13.3 | 73.3 |
| | 20.00 | 3 | 13.0 | 20.0 | 93.3 |
| | 1000.00 | 1 | 4.3 | 6.7 | 100.0 |

*Table 27 At what price of 350ml bottle can beer consumption reduce?*

### 4.3.5 If beer price goes up as you suggest how many bottles will you drink per day?

The three tables below show that if beer price increases, 17% will drink 1 beer, 750ml, 8.7%, will drink 2 beers, 500ml and 8.7% will drink 2 beers per day. However, on 750ml and 500ml tables, 4.2% will not drink, and 350ml table, 8.7% will also stop drinking if the beer price goes up.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 0 | 1 | 4.3 | 5.9 | 5.9 |
| | 1 | 4 | 17.4 | 23.5 | 29.4 |
| | 2 | 2 | 8.7 | 11.8 | 41.2 |
| | 3 | 1 | 4.3 | 5.9 | 47.1 |
| | 4 | 2 | 8.7 | 11.8 | 58.8 |
| | 7 | 1 | 4.3 | 5.9 | 64.7 |
| | 17 | 1 | 4.3 | 5.9 | 70.6 |
| | 20 | 1 | 4.3 | 5.9 | 76.5 |
| | 50 | 1 | 4.3 | 5.9 | 82.4 |
| | 90 | 1 | 4.3 | 5.9 | 88.2 |
| | 120 | 1 | 4.3 | 5.9 | 94.1 |
| | 144 | 1 | 4.3 | 5.9 | 100.0 |
| | Total | 17 | 73.9 | 100.0 | |
| Missing | System | 6 | 26.1 | | |
| Total | | 23 | 100.0 | | |

*Table 28 If beer price goes up as you suggest how many 750ml bottles will you drink per day?*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 0 | 1 | 4.3 | 11.1 | 11.1 |
| | 1 | 1 | 4.3 | 11.1 | 22.2 |
| | 2 | 2 | 8.7 | 22.2 | 44.4 |
| | 10 | 1 | 4.3 | 11.1 | 55.6 |
| | 15 | 1 | 4.3 | 11.1 | 66.7 |
| | 17 | 1 | 4.3 | 11.1 | 77.8 |
| | 50 | 1 | 4.3 | 11.1 | 88.9 |
| | 96 | 1 | 4.3 | 11.1 | 100.0 |
| | Total | 9 | 39.1 | 100.0 | |
| Missing | System | 14 | 60.9 | | |
| Total | | 23 | 100.0 | | |

*Table 29 If beer price goes up as you suggest how many 500ml bottles will you drink per day?*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 0 | 2 | 8.7 | 16.7 | 16.7 |
| | 1 | 1 | 4.3 | 8.3 | 25.0 |
| | 2 | 1 | 4.3 | 8.3 | 33.3 |
| | 3 | 2 | 8.7 | 16.7 | 50.0 |
| | 4 | 1 | 4.3 | 8.3 | 58.3 |
| | 9 | 1 | 4.3 | 8.3 | 66.7 |
| | 10 | 1 | 4.3 | 8.3 | 75.0 |
| | 15 | 1 | 4.3 | 8.3 | 83.3 |
| | 36 | 1 | 4.3 | 8.3 | 91.7 |
| | 60 | 1 | 4.3 | 8.3 | 100.0 |
| | Total | 12 | 52.2 | 100.0 | |
| Missing | System | 11 | 47.8 | | |
| Total | | 23 | 100.0 | | |

*Table 30 If beer price goes up as you suggest how many 350ml bottles will you drink per day?*

### 4.3.6 Respondents' opinions on how to reduce beer consumption

Below is a table showing all the actions respondents recommended to do to reduce beer consumption. The recommendations are more than 23, the number of respondents, because while some respondents did not suggest anything, others gave more than one recommendation.

The three most prominent actions are:

1. To regulate drinking hours (17.9%);
2. To increases prices (17.9%); and
3. To raise awareness of the problem (10.7%).

| Action | **Frequency** | **Percent** |
|---|---:|---:|
| Reduce number of **shebeens** | 2 | 7.1 |
| Increase price to N$ 1000 for 350ml bottles | 1 | 3.6 |
| Close down bars | 1 | 3.6 |
| Buying of alcohol should be by licence | 2 | 7.1 |
| Educate to create awareness | 3 | 10.7 |
| Introduce sin tax | 1 | 3.6 |
| Avoid drinking friends | 1 | 3.6 |
| Regulate drinking hours | 5 | 17.9 |
| Increase prices during weekends and public holidays | 2 | 7.1 |
| Increase prices | 5 | 17.9 |
| Reduce amount of alcohol one can buy | 1 | 3.6 |
| Close shebeens on Sundays and public holidays | 1 | 3.6 |
| Breweries should close down | 1 | 3.6 |
| No shebeens in residential areas | 1 | 3.6 |
| Lock up drunkards found in public places | 1 | 3.6 |
| Total | 28 | 100 |

*Table 31 Respondents' suggestions as to what to do to reduce beer drinking*

Some of the recommendations by respondents on what to do to reduce beer drinking are very radical: for instance, closing down the Breweries; increasing the price of a 350mls bottle to a thousand Namibian Dollars; and regulating the amount of alcohol one can buy. The Government will definitely not want to close the Breweries as that means losing some tax income and increasing unemployment. That will also antagonise the general public as people will lose employment and increasing the price of beer to unrealistic amounts will be seen as draconian.

However, as much as one may want to increase the price of beer to reduce beer consumption, respondents warn that there may be negative consequences to such an action such as listed in the table below.

Some respondents think that if prices become unbearable people will stop drinking. However, others fear that if that happens, the diehards will want to continue drinking at all costs, which may lead to increase in crime, as drinking attempt to get money by all means.

**4.3.8 What is going to happen if beer becomes unaffordable?**

| **Possible consequences of beer becoming unaffordable** | **Frequency** | **Percent** |
|---|---|---|
| They will continue drinking even if it means committing a crime | 2 | 13.3 |
| Beer will always be affordable to one who wants to drink | 1 | 6.7 |
| Drink only one or two | 1 | 6.7 |
| Stop drinking | 4 | 26.7 |
| Reduce drinking | 1 | 6.7 |
| Switch to traditional drinks, cheaper spirits or drugs | 1 | 6.7 |
| Continue buying with the little money they | 1 | 6.7 |

| | | |
|---|---|---|
| have | | |
| Crime rate will go up | 2 | 13.3 |
| They will save to be able to buy beer | 1 | 6.7 |
| They will move to something they can afford | 1 | 6.7 |
| Total | 15 | 100 |

*Table 32 What is going to happen if beer becomes unaffordable?*

**4.2 Analysis of distributors' responses**

Four beer distributors (all male) were covered in the survey. One had been in the business for four years; the second one for five years; the third for six years, and the fourth for 10 years. Hence, going by the duration they had been operating, it can be taken that they had been in the business long enough for them to know what they are talking about.

All the four distributors agree that the level of drinking in Swakopmund is high. However, asked if the price of beer has anything to do with the level of drinking, two answered in the affirmative while the other two disagreed. The reasons advanced as to why pricing will not reduce consumption are lack of alternative entertainment; beer price will always remain relatively low and affordable; existence of too many entertainment facilities; and availability of a lot of money, especially from the mines in the neighbourhood of Swakopmund. An example was given that a decade ago beer was costing less than five Namibian Dollars. Now the price has gone up more than four-fold and yet people are still drinking! Hence, the reduction in beer consumption because of increase in the price is negligible. As far as price is concerned, a sentiment was raised that beer will always remain affordable; no matter at what level it is pegged. In the eventuality that the price of beer is deemed to be too high, drinkers will reduce consumption a bit or switch to cheap hot stuff and wines.

As to what to do to reduce beer consumption, the four distributors suggested the following actions:

1. Start programmes to keep the youth occupied;
2. Increase price;
3. License only a few dealers;
4. Hold educative meetings to create awareness in the community and
5. Charge entry fees to drinking places

**4.3 Analysis of responses of small bar owners**

Like with the distributors, four small bar owners participated in this survey; but unlike the distributors, only one in this case was male while the rest were females. While the distributor who had been in that business longest had 10 years of doing that business, that duration was the shortest among the small bar owners: one had been operating as such for 10 years; the second for 11 years; the third for 15 years; and the fourth for 20 years. That means a mean of 14 years of operating.

Two of these small bar owners felt that drinking in Swakopmund was high while the other two felt that it was moderate. This is understandable since the essence of operating a bar is to make profit. The higher the consumption the more the profit. Hence, one would like consumption to be as high as possible.

On whether price influences consumption, three agreed with that statement while one disagreed. Since they are the ones who have been dealing with the business for over ten years, they have realised that once the price goes up, consumption drops; even if that drop is only temporary. Another point that was raised is that the influence of price should not be seen only in what happens when the price goes up but the fact that beer consumption on any day is high simply because the price is relatively low as compared to other alcoholic beverages.

This indirectly reflects the effect of price on consumption as stated by two of the respondents. On the follow-up question, as to what would happen if beer becomes unaffordable, two responded that there will be a switchover to cheaper drinks while one thought that there would be a temporary drop in consumption and after some time it will be back to business as usual.

It is worth noting that three of the four respondents felt that there is no alternative to shift to when beer price becomes unaffordable. The one, who said there is, mentioned the alternatives as ciders and cheap wines and whiskies. The lack of reasonable alternatives points to the low price elasticity of demand for beer. Therefore, raising beer price does not feature prominently as the way to go if we want to reduce beer consumption.

To reduce beer consumption the respondents suggested the following strategies:

1. Education to create awareness (29%);
2. Strict regulation of operating hours for alcohol outlets (14%);

3. Fines for those contravening the liquor Act (14%)
4. Raise levies on alcohol (14%);
5. Minimise the number of alcohol outlets (14%) and
6. Increase beer price (14%)

### 4.4 Analysis of responses of sales persons

Two sales persons were covered in the survey. Both were male. One had been in the business for 11 years while the other was in the business for only one year. One said that beer consumption in Swakopmund was high while the other said it was moderate. They both agreed that price influences beer consumption in the sense that low prices of beer lead to high beer consumption. They further argued that increasing beer price would lead to a decrease in beer consumption for only a brief period; after which things would go back to normal. However, they agreed that there are alternatives to beer; including ciders and home brew.

About reducing beer consumption, three somewhat contradicting suggestions were made:

1. Create awareness in the community about the evil emanating from excessive alcohol consumption.
2. Punish offenders who do not comply with the liquor Act.
3. The third opinion was that in fact there is no need to worry about reducing beer consumption. Instead, we should worry about reducing the alcohol content of

wines and spirits which are pegged at too strong a level such that they easily cause damage to drinkers.

### 4.5 Focus group discussion's analysis

Apart from the questionnaires, a focus group discussion was conducted covering 11 members of the community coming from different walks of life. The content of the discussion was the same as that covered in the questionnaires. Below is a summary of what the discussants said.

| | | |
|---|---|---|
| Level of beer consumption in Swakopmund | | High |
| Does beer price influence consumption?<br>If 'Yes', how? | | Yes.<br>Increase in price leads to less consumption |
| What will beer consumers do if the price of beer becomes unaffordable? | | Switch to cheaper stuff |
| Are there alternatives to beer?<br>If 'Yes', which? | | Yes.<br>Home brew, ciders and cheap wines |
| What can be done to reduce beer consumption? | | 1. Stricter laws<br>2. Involve parents<br>3. Stop/reduce beer advertisements<br>4. Limit beer outlets to CBD only<br>5. Review trading hours<br>6. Parents should be held responsible to what results from their children's drinking<br>7. Reduce accessibility/availability |
| | | |

*Table 33 Focus group discussion's analysis*

### 4.6 Summary of findings

The study consisted of a variety of methods of data collection including:

1. A questionnaire administered to 23 respondents from the general public;
2. A questionnaire administered to four beer distributors;
3. A questionnaire administered to four small bar owners;
4. A questionnaire administered to two sales persons;
5. A focus group discussion that involved 11 participants drawn from different walks of life.

The contents of the research tool in all the five sources of data were the same. They were all geared at seeking the same information from different perspectives to make the information more reliable. Below we summarise the findings as follows:

#### 4.6.1 Rate of beer consumption

All five sources of data acknowledged that the level of beer drinking is high. The questionnaires consisted of three possible answers to the question on level of beer drinking: High; Moderate; and Low. The category 'Low' was never mentioned in any of the five sources while 'Moderate' was mentioned in only a few instances. The bulk of the responses were in the 'High' category! Given that all categories of respondents state the same thing, it can be concluded that this is the reality of what is taking place. The study based on these results can thus conclude that, the rate of drinking is high due to three pieces of evidence:

1. People from different spheres of interest attest to that: beer drinkers themselves; beer distributors; sales persons; small bar owners; as well as people from the public who were covered in the focus group discussion.
2. Apart from the subjective opinions of individuals as described above, there was objective evidence of high drinking rate based on the average number of beers drank at one sitting. On average a respondent drinks 6.29 bottles of 750mls while those who take the smaller sizes drink an average of 4.17 bottles of 500mls and 6.67 bottles of 350mls, respectively.
3. The frequency of drinking in chronological order was as follows:
   a) At least once a week but not every day;
   b) At least once a month but not less than once a week;
   c) Every day.

   Such frequencies, coupled with the quantities drank at one sitting as described in Number 2 above imply a high rate of drinking.

### 4.6.2 Age of starting to drink

As many as 25% of the respondents were already drinking by the age of 16 years. By 18 years of age a third of the respondents were drinking and by age 20 more than half were already drinking. Given the fact that a learner completes Grade 12 at the age of 19, it can be concluded that people start drinking while still at school.

### 4.6.3 Initiation into drinking

Most of the respondents (over 80%) who had ever drunk a beer were introduced into drinking by friends; while in the case of some 10% it was family members who did the initiation. The rest did so on their own. Furthermore, it was reported that the main three reasons for drinking the first beer were:

- Curiosity
- Peer pressure; and
- To socialize.

Hence, it is important for parents and guardians to know who the friends of their young ones are since most of the drinking is initiated through these circles.

### 4.6.4 Reason for drinking

The three major reasons, in order of importance, that were cited as to why one drinks were as follows:

a) Beer price that is relatively low;
b) Proliferation of social events; and
c) Having the means to buy the beer.

The assertion that beer price is low does not refer to absolute figures but to relative terms. We mentioned that if we trace price of beer for over a decade we will find that the price increased several-fold over and yet people still find it relatively low.

### 4.6.5 Access to beer

Noteworthy is the fact that a third of the respondents said that it is easy to access a beer while another one third said it is very easy. Thus, seven out of ten respondents have no difficulty in accessing a beer. Furthermore, over 70% of the respondents said they do their drinking at shebeens; which are in the neighbourhood of residences.

Given those facts, it is no wonder that just below 20% of the respondents say they drink everyday while over 50% said they drink at least once a week but not every day. In other words, about 70% of the respondents were drinking at least once a week.

### 4.6.6 Influence of price on beer consumption

Respondents were asked if price was a factor in beer consumption. Over 80% of the respondents answered in the affirmative; with 50% agreeing 'very strongly' 73% agreeing 'strongly' or 'very strongly'; and 86% agreeing 'very strongly', 'strongly' or 'moderately'. This response tallies with that of 'Distributors', 'Small Bar Owners', 'Sales Persons' and participants in the 'Focus Group Discussion'. Thus, we can reliably conclude that, at least to some extent, price influences beer consumption.

However, although the general conclusion that is deduce from all five research tools is that price somewhat influences beer consumption, at the same time the price of beer was thought to be 'low' by all categories of respondents; not necessarily low in absolute numbers but in relative terms. An example was given by comparing the drinking rate when beer was costing less than five Dollars and now when the price is around 20 Dollars. The amount drunk is not substantially different. When the price goes up, consumption goes down a little initially but in due course the shock is absorbed and things go back to normal.

A follow-up question to that on price was whether the respondent thought an increase in price would lead to less consumption of beer. Only 14% of the respondents agreed with the statement ‘very strongly’; 36% agreed ‘very strongly’ or just ‘strongly’; and 50% agreed ‘very strongly’, ‘strongly’ or ‘moderately’. Responses in the other research tools point to the same opinion. This leads us to conclude that price is not the only factor that influences beer consumption.

Therefore, manipulation of price alone would not solve the established problem of high rate of beer consumption. Indeed, the next question in all five research tools was ‘What will beer consumers do if beer price becomes unaffordable?’ All five categories of respondents felt that beer will always be affordable; even if it means diverting money from other household expenditures to sustain drinking. The second alternative would be to switch to cheaper alcoholic beverages; including illicit ones and in the worst scenario resorting to outright crime.

What we discussed above are the hard findings that need to be explored when trying to tackle the problem of drinking in the country.

## CHAPTER 5

## CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Introduction

Alcohol is a heterogeneous product. This study shows that there are some significant differences in individuals' decisions of partaking in the alcoholic beverages of beer. This study explores the relationship between beer price argumentation and beer consumption in Swakopmund. The aim of the study was to investigate the relationship between beer price augmentation and beer consumption in Swakopmund and come up with possible recommendations.

Hence, a mixed methods research design was adopted for the study whereby data were collected from only a small cross-section sample at one point in time. The Statistical Package for Social Sciences (SPSS) was used to analyse the data by generating frequencies; drawing graphs; and computing some descriptive statistics and correlation measures between different variables.

### 5.2 Conclusions

Broadly speaking, the study summarises the issues of high beer consumption as falling in the following categories:

1. Age at which drinking starts;
2. Accessibility of beer;
3. Reason for drinking;
4. How patrons are introduced into drinking.

Hence, any meaningful strategy to resolve the problem of high rate of beer drinking would have to address each of those issues.

## 5.3 Recommendations

Drawing on the findings of the research, below are the recommendations on what to do to address the problem of high beer consumption.

1. This research indicates that drinking starts at an early age. This can be tackled by involving parents and guardians of the youngsters. The Government or teachers alone are not enough. The survey found out that youngsters are introduced to drinking by mostly friends and family members. Parents (and guardians) are in a position to identify whom their children are socialising with so that they are able to deal with the issue, before things get out of hand.

2. Awareness creation about the problem of high alcohol consumption is crucial. The parents and guardians referred to above will not be able to help much if they themselves do not understand the problem clearly.

3. Reduce accessibility of alcohol by reducing the number of outlets where one can buy alcohol. The survey found out that most of the drinking is done at shebeens, which are found near residences. If there was less of these, people would find it difficult to go far looking for a beer, especially when one does not have transport of their own. The problem with this course of action is that although on a daily basis, we hear people going around speaking out in rallies that shebeens should be closed, it is the same people who own those shebeens.

   A few years ago when the Windhoek Municipality gave notice that it was going to close down unlicensed shebeens; and to get a license one had to comply with certain regulations, including having at least two toilets, the shebeen owners came up in arms and camped at the parliament building for more than a week petitioning the Government to intervene as they were being deprived of ways to put bread on the table. Thus, the cries about closing down shebeens may not be that honest.

4. Start programmes to keep the youth occupied. It was found that people drink mostly to socialise and be merry. If there is something else to keep them busy, the youth will not resort to drinking; more so when there is not much money lying around.

5. Increasing taxation on alcohol will raise the price of alcohol; hence reduce consumption though to a limited extent only. A dramatic increase in price may actually have negative repercussions; such as patrons switching to illicit brews. Also, increase in the price of beer might lead to more breakdowns of households as people

are diverting income from maintaining the family to sustain their drinking. To avoid such eventualities, the study recommends only a gradual increase in price.

6. Many respondents suggested embarking on strict regulations covering operating hours of drinking outlets, age limitation to entering drinking outlets, heavy penalty for misbehaving following drinking, etc. The study concurs with this suggestion. Currently, wrong doers raise in mitigation the point of being drunk so that the courts should have mercy on them. Such people should be severely punished not only for the offences they commit but also for being drunk.

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**Appendix A:**

**RESEARCH PERMISSION LETTER**

NBS
NAMIBIA BUSINESS SCHOOL
UNIVERSITY OF NAMIBIA

17 May 2017

**TO WHOM IT MAY CONCERN**

Mr Esson Haipinge of Student Number: 200320629 is registered for a Master in Business Administration – Finance at the University of Namibia through the Namibia Business School.

This letter serves to inform you that his research proposal was reviewed and successfully met the University of Namibia requirements.

The student has been granted permission to carry out postgraduate studies research. The University of Namibia has approved the research to be carried out by the student for purposes of fulfilling the requirements of the degree being pursued.

If you have any queries please do not hesitate to contact the Business School at the University of Namibia.

Thank you so much in advance and many regards.

Yours sincerely

NAMIBIA BUSINESS SCHOOL
17 -05- 2017
UNIVERSITY OF NAMIBIA
Inspiring Minds & Shaping the Future

pp

Albert Isaacs, PhD
Associate Dean
Namibia Business School
University of Namibia
Tel: +246 61 413 500
Fax: +246 61 413 512
Email: albert.isaacs@nbs.edu.na



340 Mandume Ndemufayo Ave. – Private Bag 16004 – Pionierspark – Windhoek – Website: www.nbs.edu.na
Tel: + 264 (61) 413500 – Fax +264 (61) 413512 – E-mail: info@edu.na – Trust reg. no T263/05

## Appendix B

**INFORMED CONSENT ON AN INVESTIGATION INTO THE RELATIONSHIP BETWEEN BEER PRICE AUGMENTATION AND BEER CONSUMPTION IN SWAKOPMUND**

Dear Participant:

My name is Esson Haipinge, student at Namibia Business School (NBS), University of Namibia pursing a Master in Business Administration- Finance. I would like to invite you to participate in this research project by completing the attached questions. There is no compensation for responding nor is there any known risk.

In order to ensure that all information will remain confidential, please do not include your name. If you choose to participate in this project, please answer all questions as honestly as possible and return the completed questionnaires to me in a sealed envelope provided. Participation is strictly voluntary and you may opt not to participate at any time.

Thank you for taking the time to assist me in my educational endeavors. Completion and returning of the questionnaire will indicate your willingness to participate in this study

Sincerely,

*If you require additional information or have questions, please contact me at the number listed below.*

*Cell: 0811498282*

*Tel: +246 64 4105764 or Email: essonh@hotmail.com*

## Appendix C

**QUESTIONNAIRE ON AN INVESTIGATION INTO THE RELATIONSHIP BETWEEN BEER PRICE AUGMENTATION AND BEER CONSUMPTION IN SWAKOPMUND**

**SECTION A: DEMOGRAPHIC CHARACTERISTIC (PLEASE CHOOSE ONE ANSWER)**

A1. How old are you?

(      )

A2. Are you male or female?

O Male

O Female

A3. What is your employment status?

O Full time employed

O Part-time employed

O Unemployed

O Self employed

**SECTION B: PERSONAL BEER USE**

B1. Have you ever taken beer before?

O Yes O No

B2. What was you reason for drinking your first beer?

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………………………………………………………………………………………………

B3. At what age did you first drink beer?

………………………………………………………………………………………………

B4. Who introduced you into beer drinking?

O Family member

O Friends

O Neighbor

O Other specify……………………….

B5. Where do you most of the time get your beer?

O House

O Shebeen

O Club

O Other specify………………………..

B6. How would you best describe yourself in terms of your current use of beer?

O Infrequent drinker

- Light drinker
- Moderate drinker
- Heavy drinker
- Problem drinker

B7. How easy is it for you to obtain a beer?

- Very difficult
- Difficult
- Easy
- Very easy

B8. How much did you pay for one bottle of beer last time?

- 750ml N$...........................
- 500ml N$…………………
- 350ml N$...........................

B9. When you drink beer, how much, on average do you usually drink at one time?

- 750ml..........................
- 500ml…………………
- 350ml...........................

B10. How many bottles of beer do you drink enough to get you drunk?

- 750ml...........................
- 500ml…………………
- 350ml...........................

B11. How often, on average do you usually have beer?

- Every day
- At least once a week but not every day
- At least once a month but not less than once a week
- More than once a year but less than once a month
- Once a year or less

**SECTION C: YOUR VIEWS ABOUT BEER CONSUMPTION**

C1. Do you agree that beer consumption is very high?

- Strongly agree
- Agree
- Disagree
- Strongly disagree

C2. In your opinion, how strongly does low price on beer influence the high beer consumption?

- Very strongly

- Strongly
- Moderate
- Weakly
- Very Weakly

C3. Do you agree that an increase on beer price can reduce beer consumption?

- Very strongly
- Strongly
- Moderate
- Weakly
- Very Weakly

C4. Which of the following factors do you think influence more consumption on beer?

- Beer price
- Licensing restriction
- Income
- Social events
- Other specify………………………………

C5. At what percentage should beer price increase to reduce high consumption?

- Between 1% - 10%
- Between 10% - 20%
- Between 20% - 30%
- Between 30% - 40%
- Between 40% and above

C6. At what price of beer do you think beer consumption can be reduced?

- 750ml N$...........................
- 500ml N$…………………
- 350ml N$...........................

C7. If the policy to increase the beer price at the percentage you have indicated in C5 is implemented, how many bottles of beer will you take or consume per day.

- 750ml: ............................
- 500ml:…………………
- 350ml:............................

C8. What do you think should be done to reduce beer consumption?

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C9. In your view, what will beer consumers do if beer price become unaffordable?

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C10. Are there alternative/substitutes of alcohol beverage drinks that beer consumers will shift to when beer price become unaffordable? If **yes** write the name of the alcohol at the space provided

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## Appendix D

**STRUCTURED INTERVIEW QUESTIONS ON AN INVESTIGATION INTO THE RELATIONSHIP BETWEEN BEER PRICE AUGMENTATION AND BEER CONSUMPTION IN SWAKOPMUND**

Dear Participant:

My name is Esson Haipinge, student at Namibia Business School (NBS), University of Namibia pursing a Master in Business Administration- Finance. I would like to invite you to participate in this research project by completing the attached questions. There is no compensation for responding nor is there any known risk.

In order to ensure that all information will remain confidential, please do not include your name. If you choose to participate in this project, please answer all questions as honestly as possible and return the completed questionnaires to me in a sealed envelope provided. Participation is strictly voluntary and you may opt not to participate at any time.

Thank you for taking the time to assist me in my educational endeavors. Completion and returning of the questionnaire will indicate your willingness to participate in this study

***See attached letter of concern from Namibia Business School, University of Namibia.***

Sincerely,

*If you require additional information or have questions, please contact me at the number listed below.*

*Cell: 0811498282 , Tel: +246 64 4105764 or Email: essonh@hotmail.com*

**SECTION A: DEMOGRAPHIC CHARACTERISTICS (PLEASE CHOOSE ONE ANSWER)**

A1. What is your age?

( )

A2. Are you male or female?

○ Male

○ Female

A3. How long have you been a beer sales person?

………………………………………………………………………………………………

**SECTION B: UNDERSTANDING OF THE SUBJECT MATTER**

B1. What is the level of beer consumption in Swakopmund?

○ High

○ Moderate

○ Low

B3. Is the price of beer having influence on it consumption and how?

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B4. What will beer consumers do if beer price become unaffordable?

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B5. Are there alternative/substitutes of alcohol beverage drinks that beer consumers will shift to when beer price become unaffordable? If yes please give the names of substitutes.

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B6. What do you think should be done to reduce beer consumption?

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## Appendix E

**FOCUS GROUP DISCUSSION QUESTIONS ON AN INVESTIGATION INTO THE RELATIONSHIP BETWEEN BEER PRICE AUGMENTATION AND BEER CONSUMPTION IN SWAKOPMUND**

1. What is the level of beer consumption in Swakopmund?

   o High

   o Moderate

   o Low

2. In your view, is there a relationship between beer price augmentation and beer consumption?

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3. How does beer price influence the beer consumption?

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4. What will beer consumers do if beer price become unaffordable?

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5. Are there alternative/substitutes of alcohol beverage drinks that beer consumers will shift to when beer price become unaffordable?

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6. What do you think should be done to reduce beer consumption?

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# Appendix F

## CERTIFICATE OF LANGUAGE EDITING

Dr.GM

**The Rev. Dr. Greenfield Mwakipesile**

ThD. MBA. HBS | mwakipg@outlook.com

**CONTACT**

PO Box 40529,
Ausspannplatz,
Windhoek,
Namibia

**LANGUAGE & COPY-EDITING CERTIFICATE**

4th December 2017

**RE: LANGUAGE, COPYEDITING AND PROOFREADING OF ESSON HAIPINGE's THESIS FOR THE MASTER OF BUSINESS ADMINISTRATION DEGREE OF THE UNIVERSITY OF NAMIBIA**

This letter serves to confirm that I copyedited and proofread **ESSON HAIPINGE's** Thesis for the degree of **MASTER OF BUSINESS ADMINISTRATION** entitled: **AN INVESTIGATION INTO THE RELATIONSHIP BETWEEN BEER PRICE AUGMENTATION AND BEER CONSUMPTION IN SWAKOPMUND**

I declare that I professionally copyedited and proofread the thesis and removed mistakes and errors in spelling, grammar and punctuation. In some cases, I improved sentence construction without changing the content provided by the student. I also removed some typographical errors from the thesis and formatted the thesis so that it complies with UNAM's guidelines.

I am a language editor and have edited many Postgraduate Diploma, Masters' Thesis, Dissertations and Doctoral Dissertations for students studying with universities in Namibia, Zimbabwe, Swaziland and South Africa.

Please feel free to contact me should the need arise.

Yours Sincerely,

The Rev. Dr. Greenfield Mwakipesile

greenfield.mwakipesile | @mwakipg | +264813901701 | Dr. Greenfield Mwakipesile