SOCIO ECONOMIC FACTORS DETERMINING CONSUMPTION OF ALCOHOL AMONG UNIVERSITY STUDENTS: CASE STUDY OF UNIVERSITY OF JUBA

Ahmed Abdullahi Morgan

X50/70835/2014

A Research Project Submitted to the School of Economics, University of Nairobi in Partial fulfillment for the Requirements for the Award of the Degree of Master of Arts in Economics

September 2015
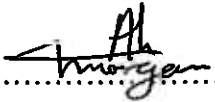
DECLARATION

This research paper is my original work and has not been presented for a degree in any other University as in its current structure.

Signature..................................... Date..03/09/2015..............

Ahmed Abdullahi Morgan Yanga

X50/70835/2014

This research project is submitted with my approval as the University supervisor

Signature..................................... Date..08/09/2015..............

Dr. Samuel N. Nyandemo

School of economics

University of Nairobi

i

ACKNOWLEDGEMENTS

DEDICATION

I dedicate this research paper to my beloved late parents as being the people who set the light of education into me. I also dedicate this piece of work to my lovely children some of whom I expect to add more to this piece of work as they pursue their education.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATIONS AND ACRONYMS

ABR: Alcoholic Beverage Review

ARA: Association of Response to Alcoholic use

BEE: Black Economic Empowerment

CNN: Cable News Network

CPA: Comprehensive Peace Agreement

FAS: Food and Agricultural Society

GDP: Gross Domestic Product

GNP: Gross National Product

NIAAA: National Institute on Alcohol Abuse and Alcoholism

SAB: South African Breweries

SANCA: South African National Council on alcohol and drug dependence

SES: Socio Economic Status

SSBL: South Sudan Brewery Limited

SSN: South Sudan Nation

SPSS: Statistical Package for Social Sciences

STATA: Statistics and data analysis software

TV: Television

USA: United States of America

VAT: Value Added Tax

WHO: World Health Organization

ABSTRACT

The goal of the study was to establish assess and evaluate the prevalence of alcohol consumption among the undergraduate students at the university of Juba in South Sudan. The dependent variable in the study is consumption of alcohol by students measured by their responses as to whether they consumed alcohol or not. The independent variables were represented in nine major determinants of consumption of alcohol among the student which include age, gender, income, price, employment status, peer influence, knowledge of alcohol dangers, and parent education level. Use was made questionnaire to collect the primary data from the students at the University of Juba. A random sample of 120 students was interviewed and the data analyzed using STATA and SPSS version 17. Tests for associations of variables were automatically done by the STATA process in which we explained the Z-tests and Chi-square tests as well as explaining the critical statistics and economics sense the results make. The study found strong associations of the nine variables to the dependent variable among the students. Price, culture, religion, accessibility and peer influence were found to be significant in determining consumption of alcohol. The study findings therefore, supported the classical theory of consumer behaviour and the theory of demand which almost hold all the above factors as determinants. However, consumer income was not significant in determining consumption which in this case fails to support the consumer theory which states that as income increases, more of normal goods will be consumed. Nevertheless, these findings can further prove here that alcohol is neither a normal nor a necessity and as such it becomes sometimes difficult to predict the behaviours of consumers involved in drinking alcohol, especially in case of addiction.

Recommendations are made for policies trying to address excessive consumption of alcohol to rely most on religiosity, cultural change, price increment, restricting sales to specific areas only and creation of more awareness about the dangers of alcohol consumption in addition to strictly implementing the minimum age law in the market for alcohol.

Keywords: (Alcohol; Consumption; Excessive Alcohol Consumption, Accessibility, age, gender)

CHAPTER ONE

GENERAL INTRODUCTION

1.1 Background of the Study

Consumption of Alcohol has been part of human history since long time. Human consumption of alcohol was unintentional, accidental, and haphazard until about 10,000 years ago. The intentional fermentation of fruits and grain to yield ethanol is of recent in human history. The production of beer, which relies on a large amount of grain, and that of wine, which similarly requires a large amount of grapes, could not have taken place before the advent of agriculture around 8,000 BC and the consequent agricultural surplus. Archeological evidence dates the production of beer and wine to Mesopotamia at about 6,000 BC. The origin of distilled spirits is far more recent, and is traced to Middle East or China at about 700 AD. Worldwide out of the 7 billion people, 2.5 billion consume alcohol according to World Health Organization (WHO 2012). Since the early 1980's, a growing number of economists have examined the various factors determining consumption of alcohol. However, most of the studies concentrated much on the impacts of the price of alcoholic beverages and income on alcohol consumption. Most of the studies concluded that increases in prices of alcoholic beverages lead to reduction in its consumption. Nevertheless, there are other factors beyond the price and income considerations.

It is apparent though that drinking is influenced by factors such as own price, consumer income, genetics, social environment, culture, age, gender, accessibility, exposure and personality. By far the largest quantity of alcohol consumed is beer, followed by wine, brandy, other spirits, alcoholic fruit beverages, whisky, fortified wine and sparkling wine. On average, according to the WHO report, every person in the world aged 15 years or older consumes 6.2 liters of pure alcohol per year. But less than half the population - 38.3 percent – drinks. So those who do drink, on average drink 17 liters of pure alcohol a year. It was found that worldwide about 16 percent of drinkers engage in heavy episodic drinking - often referred to as 'binge-drinking' - which is the most harmful to health. Poorer people are generally more affected by the social and health consequences of alcohol, the report reveals. Globally, Europe consumes the most alcohol per person of which some of its countries having particularly high rates of harmful drinking. A study published earlier in 2012 found that a quarter of all Russian men die before they reach their mid-

fifties, largely from drinking to excess. Some men in that study reported drinking three or more bottles of vodka a week. The WHO said global trend analyses showed that drinking has been stable over the last five years in Europe, Africa and the Americas. But it is growing in South-East Asia and the Western Pacific. In spite of the apparently negative impact of alcohol on society, alcohol has been an important element in many cultures. In response to a growing number of alcohol-related problems, many countries are now examining domestic policies related to alcohol consumption. Over time, developed countries have experimented with a range of policy options, from prohibition to bans on advertising, drinking age laws and health promotion campaigns. While these policies have been effective in developed countries, resulting in declining per capita consumption, they have also stimulated beverage companies to pursue new markets in less developed countries. As a result, alcohol problems have risen rapidly in developing countries. The economic costs associated with excessive alcohol consumption may be inimical to overall goals of national economic development. South Sudan is among African countries where the existing culture generally does not prohibit consumption of alcohol. Alcohol consumption among South Sudanese youth has become a major public health as well as a socioeconomic concern all over South Sudan over the past few decades. National Health Survey (National Statistics, 2012) has indicated a significant increase in the use of alcohol - among the 15-24-year-old age group, and of course most of those who fall within this age group are students. Young adulthood in many cultures is the stage of life in which the highest levels of alcohol consumption occur [Epidemiol 2008].

After entering university, a student's life situation changes, and he or she experiences increased independence, decreased parental guidance, supervision and support, and more social contacts with peers on the university campus. All of these factors potentially contribute to increased alcohol use [Dorgan 2007]. Especially important is the fact that alcohol consumption is most often a social activity with peers and therefore forms a cultural event in the process of identity development [Mohan D, Chopra A, Sethi H 2002]. Before independence, alcohol consumption in South Sudan was so minimal due to a number of reasons, and the most outstanding among them were the existence of Sharia law in Sudan as well as the absence of manufactured alcohol beverages in the country. Although there are a number of other risk and protective factors associated with alcohol consumption in young adults, the scope of the analysis covers a subset of

2

socio-demographic and economic variables, which are linked to and seem to be specifically important for the university of Juba environment.

1.2 Statement of the Problem

Worldwide, excessive alcohol consumption accounted for about 3 million deaths in 2012 (WHO report 2012). South Sudan with a population of about 11 million people is a country where most of the cultures do not prohibit consumption of alcohol. The population age group between 15 and 24 are the youth in the country with high alcohol consumption prevalence as indicated by the Health Survey of 2011 by the National Bureau of Statistics. This age group is highly composed of students in general and university students in particular. Many researches done treat alcohol as normal good, and established how the consumption of alcoholic beverages could be impacted upon by its own price and consumer income in neglect of other outstanding determinants of alcohol consumption. The results of price – consumption relationships have made policy makers to prescribe taxes on alcoholic beverages as a way of discouraging its consumption in order to protect consumers. In South Sudan such policies are not having the expected results and no proper studies have ever been taken to examine the right determinants of alcohol consumption in the country. So any policy mixed required for effective consumer protection needs us to elaborately determine all the major factors that affect consumption of alcohol. Various studies on consumption of alcohol have related it's as resulting from its low prices, availability, unemployment and poverty.

However, before the Comprehensive Peace Agreement (CPA) in 2005, the consumption of alcohol was at low level and its prevalence was only among adults. After the CPA, there is observed increase in consumption of alcohol among the population with 75% - 90% prevalence among the youth (Mangar, 2006 – 2013). This high prevalence is linked to easy accessibility of alcohol as the first giant industry in the new country was a beer and spirit factory. This high prevalence is also associated with the removal of the Sharia law from the South Sudan after the CPA. The research will therefore try to reestablish this fact and examine how employment status, price, income, gender peer influence, parent education, and knowledge of health implication of alcohol consumption are related to consumption of alcohol among students in university of Juba in South Sudan in order to enhance policy effectiveness.

1.3 Objectives of the Study

1.3.1 The general objective

The overall objective of this study is to assess and evaluate the prevalence of alcohol consumption among university students in South Sudan with specific reference to university of Juba.

1.3.2 Specific objectives

The research will try to achieve the following specific objectives:

i. Determine major factors contributing to consumption of alcohol among students at the University of Juba

ii. To measure the extent to which each factor contributes in determining consumption of alcohol among the students at the University of Juba

iii. To suggest some policy recommendations that can be used to curb excessive consumption of alcohol among students (Consumer Protection).

1.3.3 Research questions

In order to achieve the above objectives, the study raises and would try to provide answers to the following major and specific questions:

i. What is the level of prevalence of consumption of alcohol among the university students?

ii. Is there abuse on consumption of alcoholic beverages among the student population?

iii. Which factor among all the factors has greater impact on consumption of alcohol among the students? And

iv. What policy can be the appropriate policy for curbing consumption of alcohol among other policies?

1.4 Justification of the Study

Most studies on the consumption and demand for alcohol presume that the commodity alcohol is like any other consumable good. Therefore, they concluded that all the other elements that determine demand and consumption can apply on consumption of alcoholic beverages. Those old studies also assume that alcohol is consumed for the derivation of utility as any other good, and hence the utility theory of consumer behavior can be used in analyzing consumption of alcohol (Nelson 1999; Kenkel 1993, 1996; Manning et al. 1995). Several studies on consumption of alcohol conducted in Europe, America, Australia and some African countries have used different methods and models to evaluate the prevalence, levels and determinant of consumption of alcohol, especially among college or university students ((Kuending and Kuntschi, 2006, Crawford 2008).

They have found out that the reasons as to why people consume alcohol and the factors that determine the consumption level goes beyond those that affect the consumption of the other goods. For example, in the USA, the prevalence of alcohol consumption among students could go up to a level of 70% with binge drinking beyond 20%. While in South Sudan, is claimed that almost between 75% - 90% of the people drink alcohol, although there had never been well compiled scientific investigation into this fact (Mangar 2006, 2013). Also how much of this is being consumed by college students and what factors determine the consumption level are matters of concern. As such it is justifiable here as a first step to scientifically investigate and provide some information on alcohol consumption among university students to bridge this knowledge gap given that South Sudan is still a new country.

1.5 Significance of the Study

The study will be a material addition to the already few existing literatures on consumption of alcohol in the world and the third world in particular. It provides a firsthand data on alcohol consumption among students in South Sudan for the first time. Yet, another importance for this study is that, it acts as a base for further study of the subject matter, especially in South Sudan where such studies have never been there before. This will create an opportunity for policy makers about the dangers of alcohol consumption in the country and what policy measures that should be taken to reduce the menace, especially among students and the youth generally.

1.6 Literature Review

Two major studies estimated effects of price on alcohol use by youth ages 16 to 21 using data from USA National Health and Nutrition Examination Surveys (Grossman et al. 1987; Coate and Grossman 1988) conducted between 1971 to 1975 and 1976 to 1980 respectively. The studies also evaluated how the effect of price differs according to the consumption patterns of individual consumers. Both concluded that alcohol consumption is inversely related to the monetary price of alcohol.

It is evident that the factors that determine why individuals consumed alcohol are many and each individual consumption level differs from one person to the other. The major factors include family environment as agreed upon by both Steinberg (2002), Horton and Hunt (1980). Furthermore, Coon (1995), Bahr, Marcos and Maughan, G (1995) argued that availability of alcohol in the family or in the vicinity at near reach and low cost are major factors that can influence an adolescence decision to drink, noting that most people start drinking at this stage in life. Also these studies all agree that people who come from families whose parent(s) drink are more likely to drink alcohol. However, for Coon (1995), the quality of mothering and fathering can also determine the status of an individual consumption of alcohol. Family bonding has been repeatedly shown to be negatively related to adolescent drinking (Kuending and Kuntschi, 2006).

Friends and peer groups are presumed to exert a substantial influence on young people's drinking patterns. Schoor et al (2008) conducted a study to whether personality traits and peer drinking affect alcohol consumption in young adults. The conclusion was that all these factors indeed have positive effects on the decision to consume alcohol, and that the consumption of alcohol worldwide is on the increase and this is very dangerous because of both the health and socio economic costs involved. In colleges, consumption is rampant and this is an indicator of an upward trend in the total world alcohol consumption. Drinking before adulthood, however, is generally discouraged in most countries, although young people may be introduced to alcohol at an earlier age in some societies, typically within the family and in the context of meals or celebrations. Such an integrative and relatively permissive approach to drinking is commonly found in cultures with a Mediterranean drinking style. In general, studies have shown that young males are more likely to drink and do so in higher quantities than young females. However,

recent data suggest that in some countries the gender gap among young people is narrowing, with girls and young women catching up with their male peers (Schoor et al, 2008). These findings include not only the quantity of alcohol consumption but also frequency and drinking patterns. Several studies also suggest that culture plays a prominent role in setting norms and expectancies around drinking, including young peoples' drinking.

In addition to culture, other key factors help shape young peoples' attitudes toward alcohol consumption. For example: Parental influence and drinking habits play a strong role in shaping drinking behavior in young people. Peers and friends, Religiosity and active religious involvement also play an important role in young peoples' decisions on whether and how to drink. Drinking during adolescence may be a predictor of future alcohol misuse and other risky behaviors. While alcohol consumption among young people is an area of concern for a variety of socioeconomic and health reasons, there is also evidence that the majority of youths grow out of their harmful and reckless drinking patterns over time. In general, as responsibilities associated with employment, marriage, and children take on a larger role, drinking tends to decrease, as do drinking problems in most people. Much attention has been given to research on heavy episodic drinking and related patterns among young people. These behaviors have been studied particularly well among student populations. Social consequences of such consumption include negative effects on studies and academic achievement, family conflict, and risky sexual behavior (Grossman et al. 1987; Coate 1988).

1.7 Research Method /Design

This study is both a theoretical and analytical in nature analyzing factors that determine consumption of alcohol and how changes in them affect consumption of alcohol among students population. It takes students from university of Juba as the sample university in South Sudan. The study makes use of both secondary and primary cross-sectional individual-level data (i.e., data that report the amount of alcohol consumed by specific persons) that is collected using self-reporting questionnaires that is run to simple randomly non-probabilistic selected samples of 100 students at the University of Juba in South Sudan. The dependent variable in this study is alcohol consumption. To assess this variable, the participants were asked to make their ratings in the questionnaires. The independent variables included gender, age, monthly income, monthly

family income, living arrangement, knowledge of alcohol dangers, attitude towards banning alcohol, perceived benefits of alcohol avoidance. Gender is measured on male-female format. Age, monthly income, amount of alcohol consumed, and monthly family income are measured as open-ended questions. Living arrangement, frequency and type of alcohol consumed are measured on multiple choice bases. Knowledge of alcohol dangers being measured using true – false format (true = 1, false = 0). The other variables are measured using a five-point rating scale (1 = strongly disagree/ very little, 5 = strongly agree/very much).

Most of the questions in this level are adapted from previous studies (Reis, 2001; Rhodes et al, 2003; Simons and Gaher, 2004; Haines et al, 2006). Second, the interpersonal level includes peer drinking, father drinking, mother drinking, and relatives drinking. Peer drinking is measured by the number of close friends who drink alcohol. The variables in this level are measured using a dichotomous format (drink and not drink). Descriptive statistics and multiple regression logit model analysis at the 0.05 level of statistical significance is used to analyze the data using SPSS and STATA program. Data are presented in tables, bar charts or pie charts and graphs where necessary. Discussions and theoretical description and analysis are presented after every table, graph or chart. The whole methodology process is discussed in detail in chapter three of this study.

1.8 Scope of the study

The study only tries to achieve the stated objectives by answering those major questions on consumption of alcohol by the students at the University of Juba. The data collection covers students from all the seven colleges in the University. Also the study ends by testing which factors have more influence in determining students' consumption of alcohol within the university of Juba context to reach a generalization.

1.9 Limitation and delimitation of the study

The most important limitations of the study are that the research only confines its sample to 120 students, which is not good enough sample for generalization for South Sudan. This was done due to avoid large costs that might be associated with large sample and the difficulty of managing the interview procedures given that the time for the data collection was very short. However, being the first attempt of its kind, it is

important that the results of the findings could still be very instrumental for those interested in carrying out further studies in this area. We also excluded students from the postgraduate section which future studies may need to include for wider coverage. The data might also fall short of wider socio-ethnic coverage since most of the students from the war affected areas of Jonglei, Unity and part of Upper Nile states might possibly not be fully represented in the sample. The budget for the fieldwork was also a problem since it was not enough to properly train enough research assistants, and this had probably affected the quality of the data in one way or the other that might have resulted to the problem of heteroskedasticity and small sample size errors in the study.

1.10 Organization of the study

The rest of the study is organized as:

Chapter two: Includes review and overview of the Literature on alcohol demand and consumption generally with specific reference to South Sudan. It also highlights on some benefits and dangers of consuming alcohol in general.

Chapter Three:

This chapter in detail explains the whole research methodology and procedures, type of data and how it is collected, data processing and analysis as well as the theoretical base of the study.

Chapter Four:

This chapter includes data description and analysis. The full discussions and interpretations of the statistical analysis of the collected data are also presented here in this chapter. And

Chapter Five:

Chapter five, which is the Last chapter includes summary, conclusions, and policy recommendations based on the research findings.

CHAPTER TWO

LITERATURE REVIEW

A. Theoretical Literature

2.1 General Concepts

2.1.1 The concept of Alcohol

Alcohol is no ordinary commodity. It has been part of human civilization for thousands of years. Alcoholic beverages are produced by the fermentation of yeast, sugars and starches. Ethyl alcohol or ethanol is the intoxicating ingredient in alcohol beverages. Alcohol is a depressant; it slows down the function of the central nervous system. It can impair judgment and alter a person's emotions, perceptions, movements and reactions, vision and hearing. When consumed in small amounts, it can help a person feel relaxed and less anxious. When consumed in larger quantities, alcohol can have detrimental effects on one's health as well as social relations and financial well-being. Within the context of this study, the term Alcohol is used in its simplest meaning to refer to all the alcoholic beverages that are consumed by individuals as final products. The utility or disutility of this consumption is assumed to accrue to the final consumer who is the person directly consuming or using the product. All the other demands for alcoholic products which have been considered as intermediate goods are not included in this definition. These of course would represent producers' demand for alcohol and not the consumer demand.

2.1.2 The Concept of Consumption

Consumption refers to the use of commodity to derive utility or satisfaction from the act. It is always considered economically as a function of income though being relevant to demand, it is also affected by other factors such as price of the good in question, socioeconomic and demographic factors etc. In this research context, consumption refers to the act by individuals of drinking alcoholic beverages in their different forms.

2.1.3 The concept of Alcohol Abuse and Alcohol Dependence

Alcohol dependency is a disease caused by strong urge to drink, loss of control, physical addiction and the need to drink greater amounts of alcohol with an intention of getting high. Most people associate alcohol with pleasure not putting into account the consequences one is

bound to fall into. Like many other diseases, alcoholism is chronic and, is often influenced by a person's genes and lifestyle (Browne-Miller, 2009).

Alcoholic abuse is looked at as consumption of alcoholic drinks or beverages by individuals at a volume measured beyond the daily non-hazardous level, which might lead to undesirable social, economic and health effects. Alcohol abuse is a pattern of drinking that result in harm to one's health, interpersonal relationships or ability to work. Certain manifestations of alcohol abuse include failure to fulfill responsibilities at work, school or home; drinking in dangerous situations such as while driving; and continued drinking despite of problems that are caused or worsened by drinking. Alcohol abuse can lead to alcohol dependence. The harshness of an alcohol problem depends on factors including the type of alcohol you drink, how much you drink, and how long you have been drinking (Andrew Burton, 2010). Experts divide levels of alcohol use and abuse into the following categories in terms of risk for developing problems:- moderate drinking; at-risk drinking; alcohol abuse; and Alcohol dependence (alcoholism).

2.2 History of Human beginning in consumption of alcohol

Alcohol is no ordinary commodity. It has been part of human civilization for thousands of years. Alcoholic beverages are produced by the fermentation of yeast, sugars and starches. Ethyl alcohol or ethanol is the intoxicating ingredient in alcohol beverages. Alcohol is a depressant; it slows down the function of the central nervous system. It can impair judgment and alter a person's emotions, perceptions, movements and reactions, vision and hearing. The human consumption of alcohol probably originates from frugivory (consumption of fruits). Fermentation of sugars by yeast naturally present in overripe and decaying fruits produces ethanol, known to intoxicate birds and mammals. However, the amount of ethanol alcohol in such fruits ranges from trace to 5%, roughly comparable to light beer. (And you can't really get drunk on light beer.) It is nothing compared to the amount of alcohol present in regular beer (4-6%), wine (12-15%), and distilled spirits (20-95%). Human consumption of alcohol, however, was unintentional, accidental, and haphazard until about 10,000 years ago.

11

The intentional fermentation of fruits and grain to yield ethanol arose only recently in human history. The production of beer, which relies on a large amount of grain, and that of wine, which similarly requires a large amount of grapes, could not have taken place before the advent of agriculture around 8,000 BC and the consequent agricultural surplus. Archeological evidence dates the production of beer and wine to Mesopotamia at about 6,000 BC. The origin of distilled spirits is far more recent, and is traced to Middle East or China at about 700 AD. The word alcohol - al kohl - is Arabic in origin, like many other words that begin with "al," like algebra, algorithm, alchemy, and Al Gore. Human experience with concentrations of ethanol higher than 5% that is attained by decaying fruits is therefore very recent. More importantly, any unintentional, accidental, and haphazard consumption of alcohol in the ancestral environment, before the advent of agriculture about 10,000 years ago, happened as a result of eating, not drinking, whereas alcohol is almost entirely consumed today by drinking, not eating (Deep-fried beer is a very recent exception). It would therefore be predictable that more intelligent individuals may be more likely to prefer drinking modern alcoholic beverages (beer, wine, and distilled spirits) than less intelligent individuals, because the substance and the method of consumption are both evolutionarily novel.

2.3 Reasons giving rise to consumption of Alcohol

A number of studies by different writers attribute the reasons for alcohol consumption to several factors. Most people associate alcohol with pleasure not putting into account the consequences one is bound to fall into. Like many other diseases, alcoholism is chronic and, is often influenced by a person's genes and lifestyle (Browne – Miller, 2009). Some people have taken to drinking alcohol as a means of reducing stress. They think that it would provide a perfect solution to their stress (Barrows, 1991; Grant, 1998; Babor, 2010). Alcohol consumption has been part of human history since antiquity. There are not only numerous biblical examples and ancient myths which refer to alcohol but local oral history and archeological findings suggests that consumption has been part of African culture, rituals, tradition and custom since "time immemorial". But the fact of enduring alcohol consumption and the passing down of this habit through generations does not adequately explain why alcohol is consumed. Moreover patterns of alcohol use have changed significantly over time and evidence suggests that the quantity used now is far greater than in earlier times. The WHO estimates that around 2 billion people worldwide consume alcohol

(WHO 2004) and there is clearly no single reason why they do or why different people drink to different extents. It is apparent though that drinking is influenced by factors such as genetics, social environment, Culture, age, gender, accessibility, exposure and personality. According to Adam Cohn, 2011, people in general sense have ten top or basic reasons why they start drinking in the first place. These are inclusive of the following:

(1). For the effect (2).Out of curiosity (3).As a reaction to the social environment (4). To relieve stress(5).Because they see it modeled by others (6). As part of normal developmental transitions (7). As a result of personality characteristics (8).Because it is culturally normalized (9).Because they expect a good experience, and (10). Because it is accessible.

2.4 Costs and Benefits of consuming Alcohol

Besides the numerous health hazards associated with the consumption of alcohol, there are several Socio-economic costs that follows the use of this substance. Social costs are the negative economic impacts of alcohol consumption on the material welfare of society (WHO, 2004). Direct costs refer to the value of goods and services actually delivered to address harmful effects of alcohol consumption while indirect costs represent the value of personal productive services that are not performed because of the adverse consequences of drinking. A conservative estimate of the economic costs of alcohol abuse based on research studies conducted in other countries is 1% of gross domestic product (GDP). For South Africa this would work out at about R8.7 billion per year, an amount almost twice that received in excise duties on alcoholic beverages in 2000/1 (2005 Alcoholic Beverage Review). Despite the above costs, there are important benefits, which accrue from the alcohol industry. The industry, through alcohol producing companies, acting independently and through the Industry Association for Responsible Alcohol Use (ARA), aims to promote the responsible use rather than the abuse of alcohol. It is argued that the majority of people who consume alcohol do so without damaging consequences and that this trend should be encouraged.

They also argue that there is Employment creation: South African Breweries (including ABI) employs 8 232 people (2005 web page). Salaries and wages amounted to around R2.2 billion. It is estimated that more than 1 million people are employed in the beer and soft drink value chain industry does far more good for the country than harm. Some of the contributions which the

13

industry make (aside from the "enjoyment" that people get) are:- industry does far more good to the industry than harm. The wine industry estimates that 197,579 jobs were directly and indirectly supported by the industry in 2003. 108 679 of these were directly employed. They estimate further that if the tourism industry is taken into account, a grand total of 256 908 employees were directly and indirectly supported in the Western cape alone. The industry also contributes in taxes, Community partnerships and sponsorships redistribute wealth through programs like Black Economic Empowerment (BEE). It also empowers emerging farmers who supply the industry. The wine industry also supports a range of small and medium empowerment business initiatives.

In South Africa for example, the advertising industry is highly dependent on revenue from liquor companies and numerous jobs depend on this industry. In 2004/5 the industry spent close to R560 million on advertising (2005 Alcoholic Beverage Review). The majority was spent on TV advertising, followed by print and radio adverts.

2.5 Relationships between Price and Consumption of Alcohol

Many studies have shown that there are always negative relationships between the demands for alcohol, and hence, consumption of alcohol and its own price in general.

An extensive review of the economic literature on alcohol demand concluded that based on studies using aggregate data (i.e., data that report the amount of alcohol consumed by large groups of people), the price elasticities of demand for beer, wine, and distilled spirits are -0.3, -1.0, and -1.5, respectively (Leung and Phelps 1993). (Leung and Phelps 1993) emphasize that these numbers represent "best guesses" because of the wide range of estimates contained in the studies reviewed. These estimates suggest that beer consumption is relatively insensitive to price changes, whereas demand for wine and distilled spirits is very responsive to price. Analyses using individual-level data (i.e., data that report the amount of alcohol consumed by specific persons) suggest that alcohol demand may be even more responsive to price than these estimates indicate, possibly because this approach can obtain differential price responses among respondents of different age groups (Leung and Phelps 1993). Studies that are more recent have confirmed the price responsiveness of alcohol consumption (Nelson 1999; Kenkel 1993, 1996; Manning et al. 1995).

2.6 Alcohol consumption per capita for different countries

The level of alcohol consumption percapita shows how much an individual is drinking of pure alcohol in terms of liter in a particular given year. This figure is important in that, it makes comparison of individual consumption easier among various countries of the world. The consumption percapita differ across countries and continents for various but unclear reasons. Worldwide, adults (age 15 years and older) consume on average 5 liters of pure alcohol from beer, wine and spirits each year. For the Africa region, the adult (15 years and older) consumption of alcohol is about 4 liters of pure alcohol each year.

The WHO Global Status Report on Alcohol released in 2004 showed that in Uganda, 19.47 liters of pure alcohol are consumed per capita each year. This is nearly 4 times higher than the worldwide average and 5 times higher than the Africa region average, making Uganda ranked number 1 from 189 WHO member states in level of alcohol consumption. 19.47 liters of pure alcohol is about 1.62 liters of pure alcohol consumed each month. If one standard drink equals 15.2 milliliter (mL) of pure alcohol (12 grams of pure alcohol equals 15.2 mL in volume, which is defined as a standard drink in the study from which this WHO data comes, this would average to approximately 107 drinks/month consumed per capita in Uganda. The second ranked WHO member state after Uganda is Luxembourg with an adult (15 years and older) average annual consumption of 17.54 liters of pure alcohol. David Basangwa, an alcohol expert in Uganda and psychiatrist who works in treating alcoholism at Butabika Mental Referral Hospital, disputes this number since the data for Uganda in this WHO report are derived from regional studies that targeted areas with known higher consumption of alcohol. He puts the volume of alcohol consumption closer to 15 liters per capita, which is still beyond the average level.

Table 1.2: Alcohol consumption per capita among some selected countries

RANK	COUNTRY	CONSUMPTION IN LITRES
1	Uganda	19.47
2	Nigeria	10.04
3	Swaziland	9.51
4	Burundi	9.33
5	Gabon	7.97
6	South Africa	7.81
7	Rwanda	6.8
8	Sierra Leone	6.64
9	Sao Tome and Principe	6.07
10	Botswana	5.38
11	Tanzania	5.29
12	Zimbabwe	5.08
13	Burkina Faso	4.38
14	Cape Verde	3.72
15	Cameroon	3.66

Source:

http://www.who.int/substance_abuse/publications/global_status_report_2004_overview.pdf

Looking at the global consumption of alcohol, according to the WHO, Americans each drink 9.4 liters of ethyl alcohol per year on average. That's equivalent to 94 bottles of the aforementioned wine.

According to the table above, Uganda has the highest alcohol consumption percapita. Ugandans consume more alcohol than counterparts in any African country, demonstrating the citizens' abiding love for liquor, according to a survey done by US broadcaster Cable News Network (CNN). Titled 'World's 10 best-drinking nations', Uganda is ranked 8th globally ahead of Germany and Australia at positions 9 and 10, respectively. The worst drinkers in the world, according to the ranking, are British nationals who use bars to crack deals, initiate and end relationships, settle scores and overcome their "traditional reserve". In Uganda's case, the study

says patrons generously drink "waragi, also known as war gin because it was once used to fortify troops. Though drinking too much inevitably leads to surrender." "Uganda leads its African neighbors for alcohol intake, largely due to a rampant trade in illegally made rotgut and a winning formula of booze made from bananas," the broadcaster noted in its study. The ranking offered no benchmarks or figures, making it impossible to determine how scientific or not the research was.

B. Empirical Literature Review

2.7 Determinants of alcohol consumption among College Students

Steinberg (2002) argued that the high rate of alcohol consumption was due to changes in the family. Earlier studies by Horton and Hunt (1980) mentioned the family as the basic social institution from which other institutions have grown as increasing cultural complexity made them necessary. In light of these scholarly studies, alcohol consumption can be understood in the context of the family. For Coon (1995), the quality of mothering and fathering is of prime importance. Other scholars have shown that living in a family where family members consume alcohol increases the chance that an adolescent has friends who drink alcohol (Bahr, Marcos and Maughan, G 1995). Perceived availability is commonly associated with adolescent alcohol use. Perceived availability and drinking volume appear to be shaped by the adolescents' social environment. Part of this social environment includes having siblings who drink. Based on the fact sheet of Institute of Alcohol Studies on adolescents and alcohol (2009/10) it indicated that among the youngest adolescents the usual drinking place was the home. As they grew older, they continued to drink at home, but the usual site of their drinking shifted, first to parties, then to clubs and discos and finally to pubs. Family bonding has been repeatedly shown to be negatively related to adolescent drinking (Kuending and Kuntschi, 2006). Researchers suggest that strong family bonding is reflected in the adolescent's adoption of parental and societal norms and values, which in turn protect against involvement in risk behaviors (Bell et al ., 2000 cited in Kuendig and Kuntschi, 2006). Many parents who drink excessively fail to establish strong family bonds as they tend to create high levels of stress and emotional harm among other family members. Therefore, strong family bonds are not easily developed, established and maintained in families where excessive drinking habits are common(Eurocare and COFACE, 1998 cited in Kuendig and Kuntsche, 2006). Individuals with distant, hostile, or conflicted family relationships

are more likely to develop substance- abuse problems than their peers who grow up in close nurturing families (Steinberg, 2002. Studies have also shown that there is a substantial effect of socioeconomic background of adolescents on alcohol consumption. Adolescents from the lowest occupational group had almost twice the odds of being a large consumer than the highest occupational group (Droomers, et al 2003). The consumption of alcohol in Mexico for instance has been linked with higher socioeconomic status (SES); half of the alcohol consumed in the country is consumed by the 30% of the population with the highest SES (Medina-Mora& Rojas Guiot, 2003 cited in Marsiglia, et al, 2009). Higher SES, which often is associated with higher parental levels of education, also appears to have an effect on adolescent substance use. Because higher levels of education are often associated with higher SES, increased levels of alcohol use by adolescents may therefore be associated with easier access to the money needed to purchase those substances (Felix-Ortiz et al, 2001 cited in Marsiglia, et al 2009) and possibly with weaker anti-drug norms present among higher SES families. Apart from influence of parents, adolescents' drinking behaviors has been shown to be enhanced by peer groups, and their relationship with their peer groups (Yeh, 2006). It is primarily through interactions with peers that adolescents learn to define substance use as an acceptable and desirable activity (Crawford and Novak, 2008). Friends are presumed to exert a substantial influence on young people's drinking patterns.

Schoor et al (2008) conducted a study to whether personality traits and peer drinking affect alcohol consumption in young adults. Data were analyzed from a study that was conducted in a 'bar laboratory' in which ad-lib drinking of peer groups was observed. The findings indicated that personality was not associated with young adults' actual alcohol consumption. Further, peer drinking levels were strongly related to young adults' drinking. They noticed that agreeableness interacted with the effects of peer drinking on young adults' drinking in such a way that agreeable individuals adapted their actual alcohol consumption more easily than others when socializing in a high- or a low- drinking peer group. They therefore concluded that drinking in a peer context, irrespective of personality, played a major role in forming young adults' drinking. College is often seen as a time for individuals to find out their identity as a person. For many people, it's a chance to truly explore their surroundings without the constricting binds they may feel from their caregivers. During this period, people try new things and exhibit behavior that

would most likely not occur under other circumstances. For instance, many people will never again get the chance to live in a residence hall setting, where they are in such proximity to other people. But with the atmosphere of college being so unlike any other, it's easy to get carried away. And one of the most popular ways to experience the true college scene is through alcohol, and lots of it. It is most likely that the time that most people will experience their greatest magnitude of alcohol consumption while enrolled in college (Tapouzis D. 1994). As cited in LaBrie, Rodrigues, Schiffman, and Tawalbeh's article, Ham and Hope state that college students consume more alcohol than any other group of the population. College students also purchase the most alcohol out of any other demographic, which is interesting considering only about half of the number of college students are legally allowed to purchase it. With easy access to great magnitudes of alcohol and an environment that condones underage drinking, many people become quickly consumed with the pressure to drink. And not only are students drinking but they are drinking at dangerously high levels (Wechsler, 1995). This phenomenon is known as binge drinking.

Wechsler (1995) defined binge drinking as consuming five or more drinks in a row for men and four or more drinks for women, and doing this at least once in a two week period. Findings from several surveys show that college students drink more heavily than their non-college peers. For example, one study by University of Michigan, entitled "Monitoring the Future, 1975-2013", found that 18- to 24-year-olds in the United States drink an average of 9.5 drinks per binge episode. And data from MTF found that, between 2005 and 2010, 7 percent of college women and 24 percent of men reported consuming 10 or more drinks at least once in a 2-week period. Overall, data suggest that this kind of heavy drinking by college students is associated with poorer academic success. Drinking by college students also is associated with increased morbidity and mortality. Alcohol consumption among college students ages18–24 is associated with unintentional death (an estimated 1,825 students annually), injury (an estimated 599,000 students annually), physical assault (approximately 696,000 students annually), sexual assault (more than 97,000 students annually), health consequences (more than 150,000 students annually), drunk driving (roughly 2.7 million students annually), and alcohol abuse disorders (roughly 20 percent of college students). People of college age also are at increased risk of alcohol overdose. One study found that nearly 30,000 people aged 18–24 were hospitalized in

2008 for alcohol overdoses with no other drugs involved, an increase of 25 percent from 1999. Hospitalizations involving a combination of alcohol and drugs among this age-group increased 76 percent during the same time period. Overall, 59,000 young people were hospitalized in 2008 for overdoses involving just alcohol or alcohol combined with other drugs. Given that 33 percent of young people ages 18–24 were full-time college students at 4-year colleges in 2008, a conservative estimate suggests that approximately 20,000 hospitalizations for alcohol overdoses alone or in combination with other drugs involved college students. According to the 2013 Monitoring the Future Study, 78% of college students have tried alcohol at least once in their lifetime and 66% report they have been drunk. More important, perhaps, is the occurrence of binge drinking – 35% of college students report binge drinking (having consumed five or more drinks in a row at least once in the two-weeks prior to completing the survey). After years of relatively stable levels, trends in alcohol consumption among college students increased slightly in 2012, but 2013 prevalence rates once again declined, reaching historic low levels. Statistically significant decreases from 2012 to 2013 were reported for annual and past month consumption. Among college students the long term trend from 1991 to 2013 showed decreases in all prevalence rates measured in the annual survey – lifetime, annual, past month and binge drinking. Lifetime alcohol consumption among college students reached a new record low level of 78% in 2013, decreasing 17% proportionally since 1991. Since 1991 annual consumption has declined 14%, and decreased a statistically significant 3.6% from 2012 to the lowest recorded level to date – 76%.

During this same period of time, monthly alcohol consumption declined 16%, decreased a statistically significant 4.6% from 2012, recording an historic low of 63% in 2013. Similarly, binge drinking among college students in 2013 reached the lowest level yet chronicled (35%) – down 18%, proportionally, from 43% in 1991 and declined 2% from 37% in 2012. (Source: University of Michigan, Monitoring the Future, 1975-2013: Volume II, College Students and Adults Ages 19-50, 2014). Further, results from the 2012 National Survey on Drug Use and Health highlight that 14% of college students reported episodes of heavy drinking, that is, binge drinking on five or more occasions in the past month. The Monitoring the Future Study (2005-2013 combined data) revealed during the two weeks prior to the survey one in eight (13%) college students reported they have consumed 10 or more drinks in a row at least once, including

one in twenty (5%) who reported consuming 15 or more drinks in a row. [Epidemiol 2008] found that Young adulthood is in many cultures the stage of life in which the highest levels of alcohol consumption occur. After entering university, a student's life situation changes, and he or she experiences increased independence, decreased parental guidance, supervision and sup-port, and more social contacts with peers on the university campus. All of these factors potentially contribute to increased alcohol use [Dorgan 2007].

Somphol Vantamay (2007) carried out a study on factors affecting alcohol consumption among students in Chulalongkorn University in Bankok using a social ecological approach as a theoretical framework. The results showed that all 22 independent variables can copredict alcohol consumption among university students at 41.2 % (Adjusted = 40.1%). However, there were only 13 variables that affected alcohol consumption significantly: gender, age, monthly income, living arrangement, attitude toward alcohol use, perceived susceptibility of alcohol use, perceived self-efficacy, peer drinking, relatives drinking, and accessibility of alcohol around university, accessibility of alcohol around community, exposure to anti-alcohol campaign, and exposure to alcohol advertising. Consequently, multi-level preventions should be urgently considered to prevent alcohol use among university students in Thailand.

A recent study in Uganda (2014) conducted by Youth Development Link group YDLG revealed that young people prefer strong local spirits which are easily accessible in miniature sachets at very low prices. Young people also engage in binge drinking during public events and parties, at most of which local companies sell alcohol at discounted prices. Limited information about harmful use of alcohol, desire to indulge in sexual activities, peer pressure, stress, poverty and unemployment have caused many young people to continue drinking.

2.8 Alcohol consumption Situation in South Sudan

South Sudan only got its independence in 2011 to become known as the Republic of South Sudan. Previously, it was part of Sudan, and due to the Sharia law which was imposed in the country in 1983 it was difficult do have any scientifically recorded information on consumption of alcohol in the whole country. However, in South Sudan like in any other non-Islamic country in the world, alcohol is being legally consumed. Most cultures of the people in South Sudan in all the ten states promote the consumption of alcohol, instead of discouraging it. Alcoholic

beverages since historical time here are being used in rituals, celebrating birth of a child, funeral rights, and other social gatherings. It is very interesting to be observed by the researcher that in Sudan, South Sudanese were the only people who could defy the law to consume alcohol and face imprisonment because they believe that consumption of alcohol is part of their culture. Others believed that by doing so, they are not surrendering to the Sharia law ruling in the country. The type of alcohol consumed in the country originally were the local brews which include SEIKO or MOKOYO (locally made spirit brewed from dates, sorghum or cassava), KWETEE (wine made from maize or sorghum), and LACHUI or MARUWA (beer made from millet). After the signing of the Comprehensive Peace Agreement (CPA) in 2005, the situation became different for South Sudan; although in Sudan it remains the same. In South Sudan, manufactured alcoholic beverages of different kinds and brands started to pour into the country from everywhere in the world. Most of these alcohols entered the country from Uganda, Kenya, Ethiopia, Congo etc. With the opening of trade between Juba and these countries, beer and other alcoholic beverages flooded into the city and other towns in South Sudan. Before, suppliers say, the price of beer could be as high as $6 per bottle in 2006. Now it is less than $1 as per current market exchange rate. According to Mangar (2013, SSN); a survey conducted in Juba, between 75% and 90% of South Sudan Youth consume alcohol. This is a very alarming rate given that the country is still at its infant stage of economic existence. The author managed to uncover the stimulating factors that have led to the exploding drinking rate among the youth and here are some of the push-factors:-

(a) Joblessness. (b)Peer pressure.(c) Stress relief.(d) They drink to lose their inhibitions.
Although all would agree that consumption of alcohol in South Sudan is causing more harms than good, yet it has some massive economic gains to the individuals involved in its manufacture and sales. First, the biggest manufacturing factory in South Sudan is a beer and spirit factory called the South Sudan Beverages Limited (SSBL). This factory became operational in 2009, only 3 years after the CPA. It is producing beer, spirits and other non-alcoholic beverages at real massive quantities supplying the whole South Sudan in addition to the imported products. The factory is employing directly about 800 workers and indirectly thousands others who are involved in transportation, distribution, and sales of the factory products. Also, the government of South Sudan is directly collecting taxes from the factory as well as indirect taxes in form of

income taxes from those employed as a result of existence of the factory. All these, of course have economic values to the nation. On a low scale, the consumption of alcohol by the different groups is also keeping the local producers in business and hence making the ends meet. Most of the poor women in the country are those involved in the production of the local brews in the form of Seiko or Mokoyo, Kwetee, and Lachoi. These women are able to make their daily living on the income earned from the sales of these alcoholic products. Some of them are also able to send their children to schools and colleges using such earnings, all which are considered to be economically positive for the individuals and the society at large.

2.9 Overview of the Literature

From both the theoretical and empirical literature review, it is clear that more people in the world consume alcohol today for various reasons, some of which are not even clear to the consumers themselves. It is evident that the factors that determine why individuals consumed alcohol are many and each individual consumption level differs from one person to the other. The major factors include family environment as agreed upon by both Steinberg (2002), Horton and Hunt (1980). Furthermore, Coon (1995), Bahr, Marcos and Maughan, G (1995) argued that availability of alcohol in the family or in the vicinity at near reach and low cost are major factors that can influence an adolescence decision to drink, noting that most people start drinking at this stage in life. Also these studies all agree that people who come from families whose parent(s) drink are more likely to drink alcohol. However, for Coon (1995), the quality of mothering and fathering can also determine the status of an individual consumption of alcohol. More generally, findings suggest that family structure has a moderate effect on youth substance use; that parental and peer relations are better predictors than family structure of levels of alcohol consumption; and that variations in parental attachment, parenting style, and peer relations across family types explain some, but not all, of the effects of family structure on adolescents' substance use behaviours (Crawford, 2008).

Family bonding has been repeatedly shown to be negatively related to adolescent drinking (Kuending and Kuntschi, 2006). Friends and peer groups are presumed to exert a substantial influence on young people's drinking patterns. Schoor et al (2008) conducted a study to whether personality traits and peer drinking affect alcohol consumption in young adults. All the literature

23

came to the same conclusions that consumption of alcohol worldwide is on the increase and this is very dangerous because of both the health and socio economic costs involved. In colleges, consumption is rampant and this is an indicator of an upward trend in the total world alcohol consumption. This is simply because these college youth form the future elite population which is supposed to be the most important factors in economic development. Although some of the literatures have more factors involved in determining consumption of alcohol in general and among college students in particular, all of them agree that consumption of alcohol is not healthy and helpful to the individuals and the economy. Hence, there is high need for consumer protection by good policies enacted by governments to safeguard against these bad effects. They also agree that at most occasions, the youth are involved in binge drinking. They therefore concluded that laws should be put in place to curb drinking by the youth.

CHAPTER THREE
STUDY METHODOLOGY

3.1 Conceptual framework

The study is theoretically relying on general theory of consumer behavior in Consumer Economics. Neoclassical utility theory of consumer behavior where consumers reveal their preferences on goods depending on marginal utilities of the goods is the base on which the study derived its assumptions.

The utility maximization problem: Maximize $U f (A, H) = U (P, H)$ Subject to $P_A A + P_h H = Y$

Here U is utility, A is amount of alcohol consumed, H is other factors affecting consumption of alcohol other than the price. PA is the price of alcohol, Ph is the price of other goods and Y is income. By solving the above utility maximization problem you derive the uncompensated/Marshallian demand functions of both Alcohol and other goods from which the students derive utility. These demand functions are as indicated below;

$A=Y/(2P\_A)$ and $H=Y/(2P\_h)$

This study employs the neoclassical utility theory of consumer behavior in the generation of its model. The utility maximization problem is as indicated below. In light of this, agents must maximize utility from a basket of goods.

Maximize $U f (A, H) = U (P, H)$

Subject to $P_A A + P_h H = Y$

$A=Y/(2P\_A)$ and $H=Y/(2P\_h)$

3.2 Model Specification and Study design (Empirical Framework)

This is a cross sectional study utilizing quantitative methods of data collection. The quantitative process consisted of issuing self-administered questionnaires to the students to assess alcohol consumption information, which is a cross-sectional data sample. This was conducted in august 2015. Armed with the function above, the dependent variable is the amount of alcohol consumed

with independent variables as employment status, price, income; gender, age, religion, education level, accessibility and socio economic status are related to consumption of alcohol among students in university of Juba in South Sudan.

When consumption is measured as a linear relation to factors that determine it directly, it can be noted that the model will be of the form;

$$C = \beta_0 + \beta_1 P + \beta_2 Y + \beta_3 ES + \beta_4 G + \beta_5 A + \beta_6 I + \beta_7 E + \beta_8 H + \beta_9 R + \varepsilon \dots\dots\dots\dots\dots 1$$

Where:
C is alcohol consumption dummied by response (Yes/No), P_A Is the price of alcohol, Y Is income
ES Is the employment status, G Is a proxy for gender, A is a proxy for age, I is peer influence to consume alcohol, E is education level, H is knowledge of health implication of alcohol, R is proxy for religious affiliation, ε Is the stochastic error term, $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ and β_8 are the coefficients to be estimated.

However, due to disadvantage that would associate with the result if the above model is used, the preferable model used was a Logit model for the estimation of consumption. In the linear probability model, a problem with the regression model is that the predicted probabilities will not be limited between 0 and 1.

We do not use the regression model with binary outcome data. So we have equation two which is a logit estimator for alcohol consumption as below:

$$F(x'\beta) = \Lambda(x'\beta) = \frac{e^{x'\beta}}{1 + e^{x'\beta}} = \frac{\exp(x'\beta)}{1 + \exp(x'\beta)}$$

$$\dots\dots\dots\dots\dots\dots\dots\dots\dots 2$$

3.3 Description of variables

3.3.1 Dependent Variable

The dependent variable is a binary response (C). It takes on two values: 0 and 1. Where C = {0 if no and 1 if yes}. C is alcohol consumption dummied by response (Yes/No). C becomes X in this logit model.

3.3.2 Independent Variables

Socio-demographic and economic factors: age, sex, socio-economic Environmental factors: family, Binge drinking, price of alcohol, income level, Access to alcohol, alcohol purchasing age law, P_A Is the price of alcohol, Y Is income, ES Is the employment status, G Is a proxy for gender, A is a proxy for age, I is peer influence to consume alcohol, E is education level, H is knowledge of health implication of alcohol, R represents religion affiliation, and ε which is the stochastic error term.

3.4 Study Site

University of Juba started with the establishment of the Colleges of Economics & Social Sciences and Adult education, College of Education, College of Natural Resources, and College of medicine in 1975 immediately three years after the Addis Ababa agreement of 1972 as a response to the need for higher education in southern areas of Sudan, although it became operational only in 1977. The main campus of the university is located in Juba, the capital and largest city of the Republic of South Sudan. Due to the second Sudanese civil war (1983 – 2005), the university relocated to Khartoum, for safety of staff, students, and infrastructure. Following attainment of independence by South Sudan in July 2011, the university has relocated back to Juba, where it was founded. Until 1993, university of Juba was the only university in Southern Sudan. Afterwards, the government established two other universities that of upper Nile and Bahr al Ghazal both in 1994. In view of the rapid expansion and complexities in administration, the University underwent a major restructuring in 1999 resulting in decentralization of the administration, by creation of eleven (11) colleges and five (5) centers headed by deans and directors respectively. University of Juba has over 10,000 students with less than 500 being post

graduate. They are both non-residents and residents students with majority being non-residents due to lack of adequate students hostels.

The study was conducted at the University of Juba and only focused on five major colleges. University of Juba offers an ideal study site since its colleges are situated in Juba with student coming from all over South Sudan giving rise to diverse cultural background of the respondents.

3.5 Study population

The study population will be the undergraduate students; both residents and non-residents. This forms an ideal group because they spend most of their time in their respective colleges, therefore are accessible. The students were sampled from the 5 colleges to give a representative sample.

3.6 Sampling: Sampling Procedure, Sample Size determination

3.6.1 Sample Size Determination

The sample was determined applying the following formula Fisher 1998 model. The study used a Non-Probability systematic random Sample method because of its convenience in respect to objectives of the study. It has the advantage of being speedy and less costly while maintaining both internal and external validities as well as being easily justifiable. It is also extensively used and does not need list of population elements.

$$n = \frac{Z^2 P(1-P)}{d^2}$$

Where: n is the sample size, z is the standard normal deviation at 95% confidence level.

p is the proportion in the targets population i.e. prevalence of alcohol consumption at 90% (Marial, 2013), and d is the target margin of error put at 0.05.

Using this Fischer formula above, we derive n = 100

3.6.2 Sampling

The sample size is 120 students from the five major colleges of the university. This size had been reached through the Fischer model. For the purpose simplicity, 10% of the total student population in each college was drawn as the sample frame from the list from which now 10% became the participating sample in the study. Following preliminary enquiries with the administration of the University of Juba, the researcher established the average number of undergraduate students in each college.

Table 1.3: Sample size distribution and total college population at University of Juba

S/NO	COLLEGE	SAMPLE SIZE
1	Social & Economic Studies	30
2	Education	25
3	Medicine & Health Sciences	20
4	Natural Resources & Environmental Studies	15
5	Community Studies & Rural Development	15
6	Others	15
	TOTAL	120

Source: Generated by the researcher based on the students' lists

The number of the respondents in each college had been allocated proportionally using the estimated number of undergraduate students. In cases where most students were off session, the number was adjusted to cater for it. The selected numbers of students were sampled conveniently in each college.

In order to supplement and bear out results arising from the survey, key informant interviews were conducted. Purposive sampling procedure had been applied in the selection of the four key informants. The eligible key informants were selected since they were directly involved in student day to day life. They comprised of the student leaders, security officers and hall wardens.

3.7 Data Collection

The study used both quantitative and qualitative methods of data collection and analysis.

A pretest was carried out randomly prior to the real study in early month week at the Catholic university in Juba. Catholic university was selected since it was the nearest University and has students who are the same age as University of Juba; therefore, they are facing the same social and economic environment as the main study population. Following the pilot study, the questionnaire was adjusted accordingly before embarking on the definitive study.

Three research assistants were recruited to assist with the data collection. They were trained on interviewing techniques (including ethical considerations) prior to data collection. They were consistently monitored by the principle investigator during data collection period.

The researchers strategically went to places where the students hang out. This included University cafeteria, other eating places and the library as well as lecture halls. The researchers introduced themselves to the respondents and acknowledged their participation in a research study to establish factors associated with determinants of alcohol consumption and abuse among the students. When the participant agreed to participate they were instructed that completing the questionnaire was voluntary and that they would not be identified by participating in the study. Once informed consent was obtained, then they were allowed to continue to fill in the study questionnaires.

3.8 Data Processing and Analysis

Data from structured questionnaires were entered, checked, cleaned and analyzed using STATA and

Univarite analysis was performed in order to obtain descriptive statistics. Proportions, means and standard deviations were determined during the analysis. The results are presented in form of tables and charts. Bivariate analysis was performed in order to examine associations between the independent variables and alcohol consumption abuse. The Z-test was used to calculate statistical values for continuous variables whereas chi-square test was used for categorical variables in cases of observed relationships. Measures of association are considered statistically significant when p value equals to or less than 0.05. AUDIT comprises all questions addressing the objectives areas. The data is then manually analyzed in relation to themes and the objectives of

the study. Some of the themes included, availability and access to alcohol, the social environment of the university, differences between the male and female students with relation to alcohol and the alcohol policy uses and challenges at the university.

3.9 Minimization of Errors and Biases

The potential errors and biases were minimized by:

1. Training research assistants so as to make sure that they understood the questions well
2. Pre-testing the questionnaires and any ambiguity corrected before actual data collection
3. Having the participants understand the informed consent and highlighting on confidentiality.

3.10 Ethical Considerations including ethical clearance

1. Approval from the University. The investigator obtained approval of the university administration to collect data before conducting the study.

2. Informed Consent: All participants were informed of the purpose of the study and what it involved of them through the Informed Consent Form affixed to the questionnaire. In this form, participants were given the option to opt out of completing the questionnaire.

3. Confidentiality. The investigator undertook to treat the information provided during the study with utmost confidentiality. The identities of the participants were not captured, and only a code that is supplied by the participant was used as an identifier.

4. Potential harm and benefits: Participants were assured that no harm would come to them as a result of participating in this study.

Table 2.3   Expected Trend of variables' Relationships

No	Variable	Expected relationship	Basic/Reference point
1	Price P	_	Micro economics analysis of demand
2	Income Y	+	General Theory of consumer behaviour
	Employment Status ES	+	Tapouzis D. The socio-economic impact of alcohol.
	Gender G	male + and Female _	Tumwesigye NM and Kasirye R. Gender and Alcohol Consumption in Uganda.
	Age A	+	Somphol Vantamay (2007,Bankok)
	Peer Influence I	+	Mangar (2013, SSN)
	Education level E	+	Droomers, et al 2003; SES and alcohol consumption in Mexico
	Knowledge of Health implication H	_	Global Status Report on Alcohol 2004
	Religion R	_	Schoor 2009; More religious people consume less likely consume alcohol

Source: Derived from the literatures reviewed

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS

In this chapter, results from the empirical analysis are presented and discussed with focus on issues explaining how the dependent variable (consumption of Alcohol) is related to the independent variables. However, the chapter will start by presenting and interpreting the descriptive statistics.

4.1 Descriptive Statistics of the analysis

The data analysis process begins here by presenting, discussing and interpreting the statistical inferences obtained after analyzing the questionnaires. The total number of students investigated from the different colleges of the University was 120 randomly selected after calculating the sample size using the Fischer 1998 equation as explained earlier in chapter three of this study.

Table 1.4   Showing Gender of the respondents

Gender	Frequency	Percentage	Cumulative
1 Male	100	83.33	83.33
2 Female	20	16.67	100.00
Total	120	100.00	------------

Source: Researcher's Statistical calculations from the questionnaires

From table 1.4 above, out of the 120 students, 100 of them were male and the other 20 were female students. This roughly approximates to having 83% males and 17% females participating in the study. This low percentage of female is not by design since the sample was randomly selected. However, it also indicates the male – female imbalance among the students in the different colleges of the University of Juba where in total males are more than the female students.

Table 2.4   Showing minimum and maximum Age (A) of the respondents

Variable	Observations	Mean	Std. Deviation	Min	Max
ID	120	60.5	34.78	1	1
Age	120	27.6	4.76	20	49

Source: Researcher's Analysis from the questionnaires

The ages of the students range from 20 years old as the minimum age to 49 years old as the maximum age. The mean age is found to be 27 years old with a highest frequency of 19 forming 16% of the total population studied. On the other hand, the minimum of 20 years old and the maximum of 49 years old both have frequency of 1 each and only form 0.8% of the studied population each. So in terms of minimum age regulation for alcohol consumption, all the students studied are beyond the minimum age requirements of 18 years of age before which a person is legally not allowed to buy or consume alcohol. However, generally the statistical results show that most of the population of the students studied fall between the age of 22 years old and 32 years old. The result of the mean and standard deviation of the ages including the minimum and maximum age are shown in table 2.4 above.

Table 3.4   Showing employment status (EM) of the respondents

Employment Status	Frequency	Percentage	Cumulative
No information	2	1.67	1.67
1 Employed	57	47.50	49.17
2 not employed	61	50.83	100.00
TOTAL	120	100.00	

Source: Researcher's Analysis from the questionnaires

It can be observed from table 3.4 above that out of the 120 students listed in the study, 2 of them did not provide information on their employment status. 57 were employed making about 47.5% while 61 were not employed which composed about 51% of the sampled population. This fact is in line with and indicative of the fact that a large number of the students at the university are already matured individuals who are all beyond 20 years of age as the youngest among them is 20 years old while the oldest is 49 years old. As such people in this category of age are under normal circumstances expected to make a living on their own hence, must be employed in one way or the other.

Table 4.4   showing Religion (R) of the respondents

Religion	Frequency	Percentage	Cumulative
1 Orthodox Catholic	45	37.82	37.82
2 Protestant	47	39.50	77.31
3 Islam	8	6.72	84.03
4 Belonging to no religion	3	2.52	86.55
5 Others	16	13.45	100.00
TOTAL	119	100.00	

Source: Researcher's Analysis from the questionnaires

Table 4.4 above shows the different religious section to which the studied students belong. Out of 120 students, 1 did not respond on the question of religion. From 119 who responded, Protestants have the highest percentage of about 40% and about 38% were Orthodox Catholics. Muslims formed only about 6.7% while 2.5% of the respondents revealed that they do not belong to any religious group practiced in the world today. About 13% of the students chose others as labeled by number 5 and this refers to such religious sects as Roman Catholics, Episcopal Church of Sudan (ECS), Seven days Adventist, and Jehovah witness etc.

Table 5.4 showing percentage of those who consume alcohol and those who do not consume

Consumption of alcohol	Frequency	Percentage	Cumulative
1 Drink	51	42.50	42.50
2 Do not drink	69	57.50	100.00
TOTAL	120	100.00	

Source: Researcher's Analysis from the questionnaires

Table 5.4 above is one of the main tables in the study since it contains the responses which represent the dependent variable in the whole study as the research tries to examine those factors which determine consumption of alcohol which are the independent variables. Out of the 120 students interviewed, 51 of them consume or have ever consumed alcohol before while 69 students do not or have never taken alcohol in their life. In percentage form then, those consuming alcohol is 42.5% and those who do not consume alcohol is 57.5%. Therefore, more of the students are found not to be drinking alcohol in the study. However, 42.5% in terms of alcohol consumption if generalized for the whole student population is an alarming rate though comparatively not as much as that revealed in Mangar (2006/2013) survey which put the rate in the whole society to fall between 75% and 90%. These figures and percentages represent consumption by both male and female students. However, consumption by the female students was found to be very insignificant as the female population only formed 17% of the sample. Also a very insignificant number of the female students were found to consume alcohol out of the twenty female students in the sample.

Table 6.4 showing unique character of respondent's income with higher frequencies

Income in South Sudanese pounds (SSP)	Frequency	Percentage	Cumulative
(.) No income shown	20	16.67	16.67
50	1	0.83	65.83
200	7	5.83	37.50
250	5	4.17	42.50
300	12	10.00	54.17
500	15	12.50	78.33
600	13	11.00	90.00
3500	1	0.83	59.17

Source: Researcher's Analysis from the questionnaires

From the questionnaire analysis, out of the 120 students, 20 students did not report the amount of monthly income that they receive. This is a big number since it represents about 17% of the studied population, and this could also affect the results since some of these students also consume alcohol. Income in the context of this study comprises the amount of money receive by the students as salaries from employment plus monthly stipends from relatives and other sources or monthly stipends alone since some of these students were unemployed. Hence, the stipends are a transferred income. From table 6.4 above, the minimum income is only 50 South Sudanese Pounds (SSP) with a frequency of one while the maximum income is 3500 SSP with a frequency of one also. This in fact shows a very high difference and inequality. Most of the income falls between SSP 200 and SSP 600 with most of the respondents having income of SSP 500 at frequency of 15 or 12.5% of the sampled students' population. This is followed by those who had income of SSP 600 at a frequency of 13 or 11% of the sampled students' population. 12 students or 10% of the students had income of SSP 300 and 7 of them or 5.8% had income of SSP 200.

There were 5 of the respondents with income of SSP 1000 which is 4.1% of the population and another 5 also had income of SSP 250. About 4 had income of SSP 400, 3 had income of SSP 700, and another 3 had income of SSP 100 and SSP 350. The rest of the income revealed though higher have very low frequencies of one or two as can be seen in table 7.4 below.

Table 7.4 Showing incomes with low frequencies

Income	Frequency	Percentage	Cumulative
650, 850, 1300, 1800, 3000	2 each	8.35	8.35
50, 150, 285, 410, 430, 450, 550, 569, 750, 790, 817, 893, 900, 1077, 1100, 1170, 1500, 1700, 2100, 2500, 3500	1 each	17.43	25.78

Source: Researcher's Analysis from the questionnaires

The table above (Table 7.4) shows that there were 5 students with income having frequencies of two each, and this together formed 8.3% of the studied population. On the hand those with frequencies of two each were 21 which is equivalent to about 25.8% of the population under study. In the logistic regression analysis, and in order to study the significance or non-significance of income in determining consumption of alcohol among the students, we generate the logs of the income instead of using the income figures in their current shape.

Table 8.4 Showing peer influence on consumption of alcohol

Influence Factor	Frequency	Percentage	Cumulative
(.) Not drinking	61	50.83	50.83
1 Friends at college	13	10.83	61.67
2 Friends before college	14	11.67	73.33
3 Relatives at home	19	15.83	89.17
4 Just tried alone	13	10.83	100.00
TOTAL	120	100.00	_____

Source: Researcher's Analysis from the questionnaires

Looking at table 8.4 above, 61% of the students did not give response to question eleven on who introduced them to first consumption of alcohol. In fact these were the students who do not consume alcohol out of the 120 surveyed students. This represents 50% only because also among them there are those who had tested alcohol but did not respond to this question and as such they were also represented by dots in the analysis process. The highest factor that influenced the individual to consume alcohol was found to be relatives at home with a percentage of 15.8%. This could be true since almost all the cultures in South Sudan among the 64 ethnic groups do not prohibit consumption of alcohol. Instead, most of the cultures promote consumption of alcohol in rituals, celebrations and funerals. Therefore, on such occasions children easily find their ways into testing alcoholic beverages for the first time which they later promote or develop through. The second factor in influencing an individual to start consumption of alcohol was found to be friends before college with about influence level of 11.7%. This means that these students starts to consume alcohol at early age since in South Sudan most children at the level before college would be at the age below 20 years old. Friends at college had an influence of 10.8% while another 10.8% of the students reported having started to drink alcohol on their own trial without any outside influence.

Table 9.4 Showing different prices at which the students bought their units of alcohol

Price per unit	Frequency	Percentage	Cumulative
(.) No response	81	67.50	67.50
3	1	0.83	68.13
4	1	0.83	68.96
5	3	2.50	71.46
6	2	1.67	73.13
7	4	3.33	76.46
8	6	5.00	81.46
9	2	1.67	83.13
10	11	9.17	92.30
12	2	1.67	93.97
15	5	4.17	98.24
18	1	0.83	98.97
20	1	0.83	100.00
TOTAL	120	100.00	

Source: Researcher's Analysis from the questionnaires

From table 9.4 above, 67.5% of the students did not reveal any price in the questionnaires and this is represented by the dot. This figure mostly showed those students who responded not to have consumed alcohol. Generally, the prices range between minimum SSP 3 to the maximum level of SSP 20. The dominant prices with the highest frequencies are SSP 8, SSP 10 and SSP 15 with percentages of 5%, 9.1% and 4.1% respectively. The rest are having very low frequencies.

Table 10.4 Showing outlets of students' access to alcohol

Access	Frequency	Percentage	Cumulative
(.) No response	72	60.00	60.00
1 Bar near the university/hostel	9	7.50	67.50
2 Nearby market/shop	7	5.83	73.33
3 Residential area	22	18.33	91.67
4 Brought by relatives	5	4.17	95.83
5 Others	5	4.17	100.00
TOTAL	120	100.00	

Source: Researcher's Analysis from the questionnaires

The above table shows that 60% of the students did not give their response and this composed of most of those who do not drink alcohol. Among those who reported consuming alcohol, 18% access their alcohol just from their residential areas while 7.5% buy theirs from bars near the university or hostel. This means that accessibility is greatly influencing consumption of alcohol by students. 5.8% of them access their alcohol from nearby market or shop. 4.1% among the students access their alcohol from relatives and another 4.1% get their alcohol from other sources rather than the above mentioned ones.

Table 11.4 Showing students' family members who drink alcohol

Family member drinking	Frequency	Percentage	Cumulative
(.) No response	3	2.50	2.50
1 Both parents	11	9.17	11.67
2 Mother only	6	5.00	16.67
3 Father only	37	30.83	47.50
4 Aunt/uncle	8	6.67	54.17
5 Grant parents	16	13.33	67.50
6 None of them	39	32.50	100.00
TOTAL	120	100.00	

Source: Researcher's Analysis from the questionnaires

Table 11.4 reveals that 2.5% of the students did not respond to this question. Most of the students had their fathers drinking mounting to a high level of 30.8% while those whose mothers are the only ones drinking was low at 5% only. Students who's both parents drink formed 9.1% of the population. 13.3% of the respondents grant parents are reported to be drinking. However, the biggest percentages of the students' parents who do not drink represent 32.5%.

Table 12.4 Showing education level of students Mothers

Mother education level	Frequency	Percentage	Cumulative
(.) No response	5	4.17	4.17
1 No education	51	42.50	46.67
2 Primary education	23	19.17	65.83
3 Intermediate/secondary education	30	25.00	90.83
4 university education	7	5.83	96.67
5 Above university level	4	3.33	100.00
TOTAL	120	100.00	_____

Source: Researcher's Analysis from the questionnaires

From table 12.4 above, the highest percentage of the students' mothers had no education at all which is at 42.5% while those with primary education is 19.1% and intermediate/ secondary education is at 25%. Only 5.8% attended university education and 3.3% reached post graduate level of education. On the other hand, looking at table 4.13, it is evident that 26.6% of the students' fathers had no education at all compared to that of the mothers which is high at 42.5% as in table 4.12 above. Put together, both show high level of illiteracy in South Sudan which is put to be above 75% by other researchers. Fathers who attended Primary education, intermediate education, and University education show 11.6%, 25.8%, and 19.1% respectively. Those who went beyond University education represented 5.8% only. However, this figure is higher than that of the mothers' which is only 3.3%.

Table 13.4 Showing education level of students Fathers

Father education level	Frequency	Percentage	Cumulative
(.) No response	13	10.83	10.83
1 No education at all	32	26.67	37.50
2 Primary education	14	11.67	49.17
3 Intermediate/secondary education	31	25.83	75.00
4 University education	23	19.17	94.17
5 Above University education	7	5.83	100.00
TOTAL	120	100.00	_____

Source: Researcher's Analysis from the questionnaires

The above table also shows that males are more educated than the females, which is actually a known fact in most of the developing countries especially in Africa, and sub-Saharan Africa in particular.

Table 14.4 Showing how culture of the respondent view consumption of alcohol

Culture	Frequency	Percentage	Cumulative
1 Yes	84	70.00	70.00
2 No	25	20.83	90.83
3 No idea	11	9.17	100.00
TOTAL	120	100.00	_____

Source: Researcher's Analysis from the questionnaires

We can see from table 14.4 above that 70% of the students responded that their cultures do not prevent or prohibit consumption of alcohol. Alcohol here is used in almost all social occasions in the country. 20% responded that their cultures do not promote consumption of alcohol, though officially no culture in South Sudan is openly discouraging the consumption may be except

among youth or young children. Only 9.1% of the students had no idea about their cultural position on consumption of alcohol.

Table 15.4 Showing students' knowledge of dangers of drinking alcohol

Knowledge level	Frequency	Percentage	Cumulative
.	3	2.50	2.50
1	99	82.50	85.00
2	9	7.50	93.33
3	8	6.67	100.00
TOTAL	120	100.00	_____

Source: Researcher's Analysis from the questionnaires

Table 15.4 above shows the students' level of knowledge of the dangers associated with consumption of alcohol. A high percentage as high as 82.5% have full knowledge of the harmful effects of consuming alcohol. This is from both those who consume alcohol and those who do not consume the commodity. 7.5% of the students do not have knowledge of the harmful effects and about 7.6% reported having only partial knowledge of the harmful effects of alcohol consumption.

Table 16.4 showing students' friends who drink alcohol

Friends	Frequency	Percentage	Cumulative
(.) No response	2	1.67	1.67
1 None	39	32.50	34.17
2 Almost all	22	18.33	52.50
3 Few	57	47.50	100.00
TOTAL	120	100.00	_____

Source: Researcher's Analysis from the questionnaires

Table 16.4 above, 47.5% of the students had few friends who drink while 32.5% have none of their friends drinking alcohol while 18.3% have almost all of their friends drinking alcohol. Of · course it was clear that peer relationship has high influence on a friend starting to consume alcohol as shown from the previous table on peer influence.

Table 17.4 Showing Residence of the students

Residence	Frequency	Percentage	Cumulative
1 In campus	24	20.00	20.00
2 Off campus	96	80.00	100.00
TOTAL	120	100.00	_____

Source: Researcher's Analysis from the questionnaires

Table 17.4 shows that most of the students surveyed do not reside in hostels at a tune of 80% while only 20% live in hostels. This shows the level of scarcity associated with students' residential facilities in South Sudan in general.

Table 18.4 Showing students' guardians when growing up

Guardian	Frequency	Percentage	Cumulative
1 Mum and dad	69	57.50	57.50
2 Single mum	26	21.67	79.17
3 Single dad	6	5.00	84.17
4 Foster parents	7	5.83	90.00
5 Aunt/Uncle	10	8.33	98.33
6 Grant parents	2	1.67	100.00
TOTAL	120	100.00	_____

Source: Researcher's Analysis from the questionnaires

A large percent of the students were or are being taken care of by both parents at a level of 57.5%. 21.6% of them are taken care of by single mothers while 5% were taken care of by single fathers. This rate of 21.6% is alarming and is consistent with most findings elsewhere in

the world that single motherhood is on the rise. Aunts and Uncles also play a greater role in taking care of the students here to a tune of 8.3%. On the other hand foster parents happened to have taken care of 5.8% of the sampled students while grant parents play lesser roles measured at 1.6% only according to the responses.

Table 19.4 Showing students' age at which they started drinking alcohol

Start drink	Frequency	Percent	Cumulative
(.) No response	4	3.33	3.33
1 Not drinking other than few sips	68	56.67	60.00
2 7 years or younger old	9	7.50	67.50
3 8 or 9 years old	5	4.17	71.67
4 10 or 11 years old	1	0.83	72.50
5 12 or 13 years old	6	5.00	77.50
6 14 or 15 years old	8	6.67	84.17
7 16 years old or older	19	15.83	100.00
Total	120	100.00	

Source: Researcher's Analysis from the questionnaires

The table above shows that 15.8% of the students started drinking at age 16 years or above. This looks good initially as far as the drinking age of 18 years old is concerned since the age of 16 is closer to the legal drinking age. However, a good number of them also started drinking at a teenage age which is a bit higher at between age 7 and 14 years of age which if added together on the table would add up to 24% percent. This is alarming and would mean that policy makers have to do something in this regards.

46

Table 20.4 Showing students' units of alcohol consumed in one sitting in last 30 days

Number of drinks	Frequency	Percent	Cumulative
(.) No response	5	4.17	4.17
1 Did not drink	78	65.00	69.17
2 Less than one drink	15	12.50	81.67
3 One drink	5	4.17	85.83
4 Two drinks	7	5.83	91.67
5 Three drinks	3	2.50	94.17
6 Four drinks	2	1.67	95.83
7 Five or More drinks	5	4.17	100.00
Total	120	100.00	

Source: Researcher's Analysis from the questionnaires

Table 20.4 intends to measure the existence of excessive alcohol consumption known as binge drinking among the students. It is obvious from the table that out of those who drank alcohol 30 days before the data collection 12.5% had less than one drink, 4.1% had one drink at least, 5.8% had two drinks, 2.5% had three drinks and 1.6% had four drinks. Those who had four or more drinks formed 4.1% of the population. This is the level that measures binge drinking or excessive alcohol consumption. According to Wechsler, four or more drinks per a sitting within a period of two weeks for a female is binge drinking. On the other hand for male, binge drinking is when the male drinks five or more within the same time period. Given this fact then, we can conclude here that the level of binge drinking among the students is not alarming compared to other countries like United States of America where that rate could go as high as 30% or more in several studies.

Table 21.4 responses on whether government should regulate alcohol consumption or not

Response on regulatory policy	Frequency	Percent	Cumulative
(.) No response	2	1.67	1.67
1 Yes	98	81.67	83.33
2 No	20	16.67	100.00
Total	120	100.00	

Source: Researcher's Analysis from the questionnaires

The students' responses to a greater extent were mostly in favor of regulating consumption of alcohol by the government. These responses came from both those who drink and those who do not drink all together. 81.6% of the students are in favor of at least some form of regulation of alcohol consumption by the authority while only 16.6% were not at ease with any regulation for various reasons mainly arguing that the alcohol sector provides income as well as there should be freedom of consumer choices. However, 2 or 1.67% of the students did not provide their response to this question on policy and regulation of alcohol consumption by the state authorities.

Table 22.4 Showing students' responses on type of regulation

policy choice	Frequency	Percent	Cumulative
(.) No response	7	5.83	5.83
1 Controlling prices of alcohol	15	12.50	8.33
1,2,4 Controlling prices	1	0.83	19.17
1,4	1	0.83	20.00
1,4,5	2	1.67	21.67
2 Banning imports of alcohol	22	18.33	40.00
2,4	1	0.83	40.83
2,5	1	0.83	41.67
3 Banning local production and consumption	15	12.50	54.17
3,4	1	0.83	55.00
4 Strictly implementing drinking age law	20	16.67	71.67
4,5	1	0.83	72.50
5 Raising taxes on alcohol	18	15.00	87.50
6 Others:	1	0.83	88.33
all drink	1	0.83	89.17
choice	7	5.83	95.00
income	6	5.00	100.00
Total	120	100.00	

Source: Researcher's Analysis from the questionnaires

As regards to which policy is viewed as appropriate, the largest proportion of the students stood for banning importation of alcohol to a tune of 18.3% followed by 16.6% who wanted a strict implementation of the drinking age law. 15% of the students felt that the government should

49

increase taxes on alcohol and 12.5% instead called for banning local production as well as consumption of alcohol. Another 12.5% wanted a policy of price increment as a way of reducing consumption of alcohol in the society. The rest of the remaining students suggested a mixed policy which would combine the above policies in different ways by choosing either 2 or 3 policies at ago. Those who rejected government intervention gave a number of reasons. Some held that consumption of alcohol is an individual choice as such it should not be regulated because it will violate the principle of freedom of choice. Others believed that consumption and production of alcohol gives rise to income in the economy and as such regulation will negatively affect income. Some suggested that governments should control the drunkard instead of controlling consumption itself.

4.2 Regression Results and Analysis

The research tries to use the logit and probit model in looking at major determinants or factors affecting consumption of alcohol among the university students at the University of Juba using data set collected in a simple survey for this particular study through the 120 questionnaires. The dependent variable is whether or not the student sampled consumed alcohol (0 or 1). The independent variables selected include: age, gender, income, price, culture, parents' education level, peer influence, family member consuming alcohol, religiosity, knowledge of health hazard of alcohol, and accessibility. Estimating regression model, logit, and the probit models thus: in other words, the descriptive statistical analysis from the questionnaire obtained the below results in percentage form;

Table 23.4 Binary Responses on alcohol consumption

Consumption of Alcohol	Y codes	Percent frequency
Yes	1	42.50%
No	0	57.50%

Source: Analysis from questionnaires

Table 24.4 Binary outcome, model coefficients and marginal effects

Drinking	Coefficient	Std. Err.	t	P>[z]	[95% conf.	Interval
Ln-income	-.0064016	.0120846	-0.53	0.597	-.0303631	.01756
Religiosity (Islam)	-.1447927	.1189546	-1.22	0.226	-.3806578	.0910724
College Friend	.0567121	.1016458	0.56	0.578	-.1448328	.2582571
Mother educ.	.1074433	.0733096	1.47	0.146	-.0379161	.2528026
Father educ.	.0509875	.0824867	0.62	0.538	-.1125683	.2145433
Awareness	.1412483	.1001546	1.41	0.161	-.0573397	.3398363
Culture	.1823053	.0656385	2.78	0.006	.0521562	.3124544
Both parents drink	-.3458578	.2113317	-1.64	0.105	-.7648896	.0731741
Mother drink	-.4018945	.2301678	-1.75	0.084	-.8582748	.0544858
Father drink	-.4451954	.1930441	-2.31	0.003	-.8279663	-.0624245
Relative influence	-.4048695	.197391	-2.05	0.043	-.7962594	-.0134796
None drink	-.5009032	.1930697	-2.59	0.011	-.8837248	-.1180817
Access (nearby)	.4065593	.1103773	3.68	0.000	.1877015	.6254172
Ln-price	.1480576	.0499479	2.96	0.004	.0490202	.247095
Friends and myself	3.883798	1.960168	1.98	0.048	.0419381	7.725657
Constant	.2942436	.2286674	1.29	0.201	-.1591615	.7476488

4.3 Interpretation and Discussions of the regression model results

From table 4.24 above, it is showing that 42.5% consume alcohol while the other 57.5% do not consume. The regression results on table 4.25 explained the results of the model estimation thus: the p value of income is insignificant at 5% level of significance and this could be attributed to the fact that most of the respondents with higher income are not consuming alcohol. It is those students with very low income that were found to be consuming alcohol in the study resulting into insignificance of income in the regression. So the results show that those with higher income are 0.6% less likely to consume alcohol compared to those students with lower income.

Religiosity shows insignificant results although it correctly predicts the sign of relationship between consumption of alcohol and religion which is negative as expected. Islam has the highest coefficient revealing that Muslims are 14% less likely to consume alcohol compared to non-Muslims in the study.

Parents' education in general is not significant as shown by the results. However relationship signs are consistent with predicted a result which agrees with studies in Mexico. The consumption of alcohol in Mexico for instance has been linked with higher socioeconomic status (SES); half of the alcohol consumed in the country is consumed by the 30% of the population with the highest SES (Medina-Mora& Rojas Guiot, 2003 cited in Marsiglia, et al, 2009). Friends at college and students' awareness of the dangers of consuming alcohol both have greater influence on the decision of the individual students to consume alcohol. For instance, 70% of the students are found to be fully aware of the dangers associated with alcohol and hence, are less likely to consume. However, both factors have significance level below the predicted 5%. The most significant factor in the study is accessibility of alcohol with p value of 0.000 level of significance. The coefficient of predictability is 40% of all the other determinants. This is measured or influenced by alcohol being accessible by the individual from the nearby shop or market.

The second most significant factor among the determinants is the price of alcohol with significance p value of 0.004. Price shows that there is 14% influence while the sign is positive which shows the nature of alcohol in this respect. It could also be possible that the prices of alcohol among the population are low such that people continue to buy even if the prices are increasing.

The third most significant determinant in this study is culture a with a significance p value of 0.006. The sign of the coefficient is positive and hence, corresponds to the expected results. It shows that among all the factors, culture is likely to have 18% effect on the decision to consume alcohol. Of course from the descriptive statistics, over 80% of the students revealed that their cultures do not prohibit consumption of alcohol. Instead alcohol is used for most social occasions ranging from celebrating birth of a child, marriages to funerals which in turn normalize consumption of alcohol in the whole society.

A fourth significant element determining consumption of alcohol among the students was found to be fathers drinking with significance p value level of 0.003. In other words, children whose fathers drink are found to be 4% less likely to drink alcohol which is contrary to real expected situation.

A fifth factor involves students who do not have any relative or parents drinking alcohol. Here the significance level as measured by p value is 0.011. It carries a negative coefficient of 50% which implies that students whose parents or close relatives do not consume alcohol are 50% less likely to consume alcohol than those whose relatives or parents drink alcohol. This is a very important finding in this study. Also the influence of relative general of consumption of alcohol is found to be great with p value of 0.043.

4.4 Interpretation and Discussions of the probit and logistic models results

The average of predicted probabilities for drinking is about 51% which is similar to the actual frequency for drinking. The logit and probit models correctly predict 90.83% of the values and the rest are misclassified. When the price of alcohol increases by one bound students are 43% more likely to drink. Muslim students are 70% less likely to drink alcohol. A student whose father is educated is 30% more likely to drink. When the price of alcohol is high (in comparison when it's low) students are more likely to drink. Students start to drink alone more in comparison being influenced by others. In comparison to students whose fathers are not educated those whose fathers are educated are more likely to drink. Students are more likely influenced to drink by culture. When alcohol is easily accessed students are more likely to drink than when it is not easily accessible. Muslim students are less likely to drink when compared to other religions. However, gender was found not to be significant in the study. In case of age, the mean did not vary much from the coefficients because of some uniformity since the highest age group fell between 23 and 31. Therefore, the variation is so small which renders the regression marginal results insignificant. As for gender, over 80% of the population studied by coincidence turns out to be male while less than 20% were females. Out of the female sample, a very insignificant number consumes alcohol which has also made gender variation to be insignificant in the study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND IMPLICATIONS

In this chapter, all the procedures carried out in the research work and the findings and results are summarized. Conclusions reached are also derived in this chapter, and finally the chapter highlights on policy implications of the results as well as making recommendations for further studies.

5.1 Summary

Worldwide, consumption of alcohol is on the increase regardless of the harmful effects it has on human health and economic wellbeing. Policies such as minimum drinking age, high taxes, and limited bars operating ours have not been helping in reducing excessive consumption of alcohol. The world Health Organization latest report 2014 estimates that about 38% of the population of the world consumes alcohol and about 3 million die from alcohol related problems annually. This is quite alarming figure and there is no good single reason as to why people in such big number consume alcohol. In south Sudan, the consumption had been on the increase especially after the signing of the Comprehensive Peace agreement (CPA) in 2005. There had never been clearly known factors attributed to the increase though it believed that the abolition of Sharia law in the country and near accessibility of alcohol resulting from influx of alcoholic imports from the neighboring countries as well as a new beer and spirit factory opened in the country could be influencing factors. Due to non-identification of the exact factor renders efforts by the government policies to curb excessive consumption of alcohol ineffective. Based on this fact, the study aimed to evaluate and assess the situation of alcohol consumption among students in South Sudan with special focus on the factors that determine consumption of alcohol among the student population. It tries to assess whether there is excessive consumption of alcohol among the students or not. If there is then what could be the most influential determinants in terms of significance and weights as measured by the p values and factor coefficients respectively that determine consumption of alcohol generally among the studied students in particular. We used in the study cross sectional primary data collected through questionnaires rendered to 120 randomly selected students from the University of Juba. The data is analyzed using Stata applying a logistic and regression models to estimate the marginal effects of the variables. The dependent

variable for the study is alcohol consumption while the independent variables included age, gender, religiosity, parents' education, accessibility, culture, peer influence, friends drinking, parents and relatives drinking, and the respondents' awareness about the dangers of consuming alcohol. The results of the statistical descriptions and regression were all presented in tables and discussions and interpretations follow after each table. The key findings of the study are that, out of the 120 students studied, 42.5% consumes alcohol while 47.5% do not. This is an alarming rate if generalized for a country like South Sudan whose population is only 11 million people. The rate of excessive consumption however was very low at only 4% of the studied population unlike in USA and other countries where similar studies found binge drinking among students to go high at about 30%. The most influential factors that determine consumption of alcohol in order of importance were found to be accessibility in nearby sales point, low price of beer-for beer being the most alcohol consumed by the students, culture and traditions, parents and other relatives drinking, and influence by friends in college.

5.2 Conclusions, implications and Recommendations

The study analyses the determinants of consumption of alcohol among University of Juba students using primary data collected through questionnaires in August 2015. The findings suggest that income, age and gender are not very significant in determining consumption among the students. Price of alcohol is significant in determining consumption but the relationship would not be supported by the normal low of demand which states that the higher the price less would be demanded and vice versa. This is because prices of alcohol are very low and hence, even if the price increases, the consumer would not feel it so as to adjust. Therefore, it would make an economic sense for policies attempting to reduce consumption of alcohol here to allow prices to increase through taxes. This could be good both for the government as it raises its revenues through taxes as well as for the traders who would increase their profits when sales revenues increase.

One implication of this study is that popular notion that people with higher income tends to consume more does not hold in this study. In fact, it was those individuals with lesser income that tends to consume more alcohol with income also having lesser significance. However, this could be true because of the nature of alcohol as being a good which is neither normal nor

luxury. Instead, it becomes a necessity once the individual consumer gets addicted in using it, and as such policies should work to prevent people who drink becoming addicted to alcohol.

The study also found that culture is very significant in determining consumption of alcohol among the students. This is true with most African societies where every social occasion is conducted with alcohol as a major good to entertain people with. The implication of maintaining such a culture is that consumption of alcohol by children becomes a normal thing of which both policy makers and the society members are to work together by enacting and implementing policies that could work towards abolishing or reducing the use of alcoholic beverages in conducting social functions.

Most importantly is the fact that near accessibility of alcohol is the highest determinant of consumption which implies that the youth and others easily buy alcohol at their residential areas. In order to solve this problem, policies should be made to discourage or prohibit sales of alcohol in shops or kiosks in residential areas. There should be designated outlets that sell alcohol like super markets or bars which are far from students' or general residences.

Generally, the most significant factors in determining consumption of alcohol are near accessibility, culture, own price, Religion, friends at college, non-drinking parents and relatives, and when ones father drinks. These are considered at 5% level of significance. However, if the level of significance is varied to 10%, then all the independent variables become significant as determinants of alcohol consumption. If we consider these findings from the economic consumer perspective, the findings are therefore in line with modern theories of consumer behaviour in both its microeconomics and macroeconomics points of view both at theoretical as well as at empirical stance.

The inconclusive nature of the findings of studies on similar topics makes it mandatory to propose areas for further research. For future research, the study recommends the use of more independent variables than that used in the current study. A wider coverage to include more universities in the country is also recommended. To this end, since South Sudan do not have well compiled data, the use of primary or any other more frequent data is encouraged. It is further proposed that there should be trial of other approaches or improving the current methodology to see if more accurate and different results could be obtained in future studies of similar nature.

REFERENCES

Becker, G.S., and Murphy, K.M. A theory of Rational Addiction, Journal of Political Economy 96(4): 675 – 700, 1988.

Camargo, C.A., Jr.; Stampfer, M.J.; et al. Moderate alcohol Consumption and Risk for angina Pectoris or Myocardial infarction in U.S. male Physicians. Annals of Internal Medicine 126(5): 372 – 375, 1997.

Chaloupka, F. J., and Wechsler, H. Binge Drinking in College: The Impact of Price, availability, and alcohol policies, Contemporary Economics Policy 14((4): 112 – 124, 1996.

Coate, D., and Grossman, M. Effects of alcoholic beverage prices and legal drinking ages on youth alcohol use. Journal of Law and Economics 31(1):145–171, 1988.

Cook, P.J., and Moore, M.J. Economic perspectives on reducing alcohol-related violence. In: Martin, S.E., ed. Alcohol and Interpersonal Violence: Fostering Multidisciplinary Perspectives. NIAAA Research Monograph No. 24, NIH Pub. No. 93–3496. Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism, 1993. pp. 193–212.

Emily H. The Economics of Alcohol Consumption: Exploring the Relationship between Sensitivity to the Price of Alcohol and Behavioral Consequences, Yale University, 2004.

Godfrey, J. Alcohol Taxes: From the Whisky Rebellion to the 1990 budget summit. Tax Notes 48(2): 137, 1990.

Grossman, M., and Hsieh, C.R., eds. Economic Analysis of Substance Use and Abuse: The Experience of Developed Countries and Lessons for Developing Countries. Cheltenham, United Kingdom: Edward Elgar, 2001. pp. 257–289.

Global Status Report on Alcohol 2004. World Health Organization, Geneva, 2004

Hibell, B., Andersson, B., Ahlstrom, S., Balakireva, O., Bjarnason, T., Kokkevi, A., et al. (2000). The 1999 ESPAD report: *Alcohol and other drug use among students in 30 European countries.* Stockholm: Swedish Council for Information on Alcohol and Other Drugs.

Kenkel, D.S. Drinking, driving and deterrence: The effectiveness and social costs of alternative policies. Journal of Law and Economics 36(2):877–914, 1993.

Laixuthai, A., and Chaloupka, F.J. Youth alcohol use and public policy. Contemporary Policy Issues 11(4):70–81, 1993.

Leung, S.F., and Phelps, C.E. "My kingdom for a drink . . .?" A review of estimates of the price sensitivity of demand for alcoholic beverages. In: Hilton, M.E. and Bloss, G., eds. Economics and the Prevention of Alcohol-Related Problems. NIAAA Research Monograph No. 25, NIH Pub. No. 93–3513. Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism, 1993. pp. 1–32.

Manning, W.G.; Blumberg, L.; and Moulton, L.H. The demand for alcohol: The differential response to price. Journal of Health Economics 14(2):123–148, 1995.

Nelson, J. P. (2001). Alcohol advertising bans: A survey of research methods, results, and policy implications. In M. R. Baye& J. P. Nelson (Eds.), *Advances in applied microeconomics* (Vol. 10: Advertising and differentiated products, pp. 239-295). Amsterdam: JAI Press & Elsevier Press.

Tapouzis D. The socio-economic impact of HIV/AIDS on rural families with an emphasis on youth in Uganda. Kampala, Uganda: Food and Agricultural Organization ofthe United Nations (FAO), 1994.

Tumwesigye NM and Kasirye R. Gender and The Major Consequences of Alcohol Consumption in Uganda. Chapter 9 of Alcohol, Gender and Drinking Problems: Perspectives from Low and Middle Income Countries; Obot IS and Room R, editors. Genacis Project (Gender, Alcohol and Culture: An International Study), World Health Organization, Geneva, 2005.

Wolff B, Busza J, Bufumbo L, Whitworth J. Women who fall by the roadside: gender, sexual risk and alcohol in rural Uganda. Addiction 2006 Sep;101(9):1277-84

Introduction

I am Ahmed A. Morgan, a postgraduate student at The University of Nairobi, School of Economics. I am doing research on Prevalence of consumption of alcohol and its determining factors among University of Juba students. The purpose of this study will be, to establish the factors associated with the prevalence of alcohol consumption among University of Juba students. This research will involve self-administered based questionnaire.

Therefore, your participation in filling this questionnaire is very crucial for data collection and success of this study. The information that I collect from this research project will be kept confidential. Information will be put away and no one but the researchers will be able to see it. Any information you have given will have a number on it instead of your name. Once again, you are assured here that all the data will be for academic purpose only with high level of confidentiality maintained.

Socio-Demographic Data

Questionnaire ID: _____ Date:_____

Initials of your name: _____

Q1 Age:_____ Gender: 1. Male 2. Female (Tick one only please)

Q2 Which College are you in? (Tick the appropriate college name from the below list)

i. College of Social & Economic Studies ( )

ii. College of Education ( )

iii. College of Medicine & Health Sciences ( )

iv. College of Natural Resources & Environmental Studies ( )

v. College of Community Studies and Rural Development ( )

vi. Others:_____

Background Information

1. What year of study are you? Please tick as appropriate.

(1) First Year (2) Second Year (3) Third Year (3) Fourth Year (5) Fifth year (6) Year

2. What type of place of residence did you grow up in?

(1) Urban slum area (2) Urban Non slum area (3) Rural Area

3. Where do you live when you are in the University?

(1) On Campus (2) Off Campus

4. Who have taken care of you in the family when growing up? (Family Type)

(1) Mum and Dad (2) Single Mum (2) Single Dad (4) Foster Parents (5) Aunt/Uncle

(6) Grandparent (s)

5. What is your religious affiliation?

(1) Orthodox Catholic (2) Protestant (3) Islam (4) Not any (5) others_____

6. Do you work part time while studying?

(1)Yes   (2) No

7. If you work how much approximately is your monthly income? SSP_____only.

8. If being supported by parents/relatives: How much monthly approximately? SSP_____only.

Access to alcohol

9. Have you ever taken alcohol?

(1) Yes (2) No

10. How old were you when you had your first drink of alcohol other than a few sips?

(1) I have never had a drink of alcohol other than a few sips (2) 7 years old or younger (3) 8 or 9 years old (4) 10 or 11 years old (5) 12 or 13 years old (6) 14 or 15 years old (7) 16 years old or older

11. Who introduced you to your first time tasting or drinking alcohol?

(1) Friends at college (2) Friends at lower school (3)By a relatives at home (4) I just tried alone

12. During the past 30 days, on how many days did you have at least one drink containing alcohol?

(1) 0 days (2) 1 or 2 days (3) 3 to 5 days (4) 6 to 9 days (5) 10 to 19 days (6) 20 to 29 days (7) All 30 days

13. During the past 30 days, on the days you drank alcohol, how many drinks did you usually drink per day?

(1) I did not drink alcohol during the past 30 days   (2) Less than one drink (3) 1 drinks (4) 2 drinks

(5) 3 drinks (6) 4 drinks (7) 5 or more drinks

14. What type of alcohol do you usually drink most? SELECT ONLY ONE RESPONSE.

(1) I do not drink alcohol

(2) Beer: underline your best choice (Tusker, Nile, White Bull, Club, Others)

(3) Wine   (4) Spirits   (5) Mokoyo/Seiko   (6) Busaa /Kwete   (7) Others   (8) Lachoi/Maruwa

15. How often do you have a drink containing alcohol?

(1) Never   (2) Monthly or less   (3) 2-4 times a month   (4) 2-3 times a week   (5) 5 or more times a week

16. How many/much standard drinks containing alcohol do you have on a typical day when drinking in terms of bottles or any local measure?

(1) Never   (2) 1 or 2   (3) 3 or 4   (4) 5 or 6   (5) 7 to 9   (6) 10 or more

17. At what price have you bought the drink per this unit in your last drinking session within the last 30 days? SSP_____only per unit.

18. Where do you buy or get your alcohol from?

(1) A bar near the university/hostel   (2) Nearby market/shop   (3) Residential area   (4) Brought by friends/ relatives   (5) Others_____

Socioeconomic Information

19. Who drinks in your family?

(1) Both parents (2) Mother only (3) Father only (4) Aunt/uncle (5) Grant parents (6) None of them

20. How many of your close friends do drink?

(1)   None   (2)   Almost   all   (3)   Few   (4)   All   drink   (5) Others_____

21. What is the education level of your parents?

a. Mother: (1) No education (2) Primary (3) Intermediate/secondary (4) University (5) Above University

b. Father: (1) No education (2) Primary (3) Intermediate/secondary (4) University (5) Above University

22. Does your culture accept drinking as a way of life and for cultural rituals and celebrations?

(1) Yes   (2) No   (3) do not know

23. In your own honest opinion, why do you or think others do drink alcohol?

(1) Enjoy the taste (2) Reduce stress (3) follow peers or friends (4) It is accessible (5) ignorance

(6) Family also drinks (7) I do not really know   (8) Affordable at low price (9) Just to try

(10) Others_____

24. Do you also smoke cigarettes?   (1) Yes   (2) No

25. Are you aware of the negative health effects, dangers and other socioeconomic harms that both smoking and consumption of alcohol has on the individuals and society at large?

(1) yes I am fully aware   (2) Not aware   (3) Aware only to some extend

26. Do you think government should come in and regulate alcohol consumption generally?

(1) Yes (2)No

27. If No, Why? _____

28. If yes, then what method of intervention do you approve of?

(1) Controlling price of alcohol (2) Banning import of alcohol (3) Banning local production and consumption of alcohol (4) Strictly implementing the drinking age laws (5) Raising taxes on alcohol (6) Others_____

Thank you very much for being part of this study