GAMBLING BEHAVIOUR OF LOW-INCOME YOUTH IN DANDORA

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DECLARATION

I hereby declare that this is my original work and that to the best of my knowledge has never been presented for the award of any degree in any other university or institution.

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ABSTRACT

Gambling industry contributes significantly to national income directly or indirectly in addition to creating formal jobs which are non-agricultural based. Gambling problem amongst the youths is a risky behavior that cannot be taken lightly since it causes physical, social and psychological problems among the youths which is associated with their health challenges. This continues to be a growing problem with many gamblers getting into drug abuse, mental problems and financial difficulties especially among the Kenyan youths in the low income. This is deemed to be more prevalent in the cities in slums which are characterized by low incomes. Using primary data, this study sought to find out factors that affect participation in gambling. Secondly, the study researched the effects of gambling on low-income youths. Finally, the study investigated the prevalence of gambling behaviour in low-income areas. Using the probit model and marginal effects, the study established that factors such as Gender and income sources increased the probability participation in gambling. Other factors such as Marital Status, Religion, Age and Education Level reduced the probability of the participation in gambling by the Dandora youths The findings showed that majority of the gamblers experience a reduction in their incomes with 61.86 percent agreeing that gambling affected their incomes negatively compared to the 38.14 The study noted that the betting behaviour was more prevalent with 94.29 percent indicating that they would bet 0-6 times in a week. The study was proposes proper measures by the government to create employment for the majority of the jobless. This will help to curtail their behaviour in gambling. Further, the study recommends that government should involve the religious community in addressing the menace of gambling behaviour that is associated with alcoholism, financial loss and addiction. In conclusion the study recommended a more inclusive study that includes both low income and high-income families.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Gambling has increasingly become an area of interest in economics and other disciplines in Kenya as well as internationally. (Sammut, 2010) defines gambling as betting money or some form of property on the outcome of a game or event that is ultimately based on chance. The increasing knowledge about gambling has been associated with social media which is not regulated. Social media lacks effective regulatory control of the contents accessed by the youths and the underage in the entire populations by the modern media as compared to the traditional media which was uncontrolled (Rein and Baxter 2015). As noted by Gainsbury et al. (2016), exposure to advertisements about gambling positively affects people's attitudes towards betting, gambling behavior and changes the intentions. The increasing promotion of the gambling activities has been characterized by the increased expenditures on commercial gambling advertisement internationally as well as increased gambling markets online (Lee et al. 2008; McMullan et al. 2012).

According to Shaffer and Hall (1996), 4-7 percent of the adolescents are faced with gambling challenge which is acute. Similarly, Jacobs (1989) concluded that gambling is a serious societal problem with approximately 4– 6 percent being victims of gambling problems while adults were less affected with only 1-3 percent of those who had pathological gambling (American Psychiatric Association, 1994). The continued expansion of the gambling sector has become riskier for those underage children and this presents a dire need for on the continued impact analysis of this sector on the population (National Research Council, 1999).

Romer (2003) noted that the gambling problem amongst the youths is a risky behavior that cannot be taken lightly since it causes physical, social and psychological problems among the youths which is associated with their health challenges. At least one in every eight adolescent youths suffers from the problem of gambling (Adlaf & Ialomiteanu, 2000). Gambling has chances of winning or losing which increases the probability of gambling outcomes from the game (Anderson & Brown, 1984). These chances have to do with players' who have some personal attributes or behaviors which increase their level of probability to win (Joukhador, Blaszczynski, & MacCallum, 2004). Majority of the gamblers are characterized by a kind of addiction to gambling which is natural with compulsive consumption of non-substance as a

result of rewards (Tamminga & Nestler, 2006). It is an addiction without having to take any drug (Potenza et al., 2001).

Gambling has three categories: first is the wagering and betting; secondly is what is called gaming and it involves the mathematical pre-determination of rules of the game and the outcomes; Finally, is the lottery style games such as cross-lotto, powerball, pools, scratch tickets and keno whose awards are based on a winning symbol or number combinations (Delfabbro & LeCouteur, 2008). It is worth noting that gambling avenues are mainly in suburbs in major towns and cities operating even during the night. These avenues are mainly in areas with lower social-class demographics (Livingstone & Woolley, 2007; Marshall & Baker, 2002). Those who participate in betting vary considerably with age and sex with the proportion of men who gamble being higher than women (Productivity Commission, 2009). This is due to the differences in game preferences, gaming rules, motivators and features of gaming avenues (Delfabbro, 2000).

Although gambling is in different forms in the different parts of the world, sport betting and lotteries are the most common ones in Kenya. Casino gambling as a form of gambling exists in a variety of forms ranging from table gaming, machine games, gaming controlled by the state, riverboat, Indian games, lotteries and charitable gaming (Marfels, 1995). The reality is that gambling industry, such as in Kenya, has been a source of significant resources to fund government policies and generate job opportunities (South Africa National Gambling Board, 2013).

For instance, gambling industry having a GDP multiplier of 2.0 contributed at least 0.77 percent of the national income directly or indirectly in South Africa in 2012 in addition to creating 1.7 percent of the formal jobs which are non-agricultural based (South Africa National Gambling Board, 2013). Kenya is the third in terms of revenue collection from gambling businesses. The revenues collected from gambling rose to USD29 million in 2019 from USD20 million in 2014.It was projected that the figure would rise to USD 50 million in 2020 (Price Waterhouse Coopers, 2019).

Unfortunately, there are socio-economic problems that are consequences of lottery and gambling industry (Friedman et al. 1989; Goodman 1994). This presents the need to have a balance between the need to generate revenues for the government and the associated costs within the legal framework. Gamblers with severe addiction spend much energy and resources in gambling leading to companies' loss of productivity and profits. For instance, in Kenya, some gambling addicts may be severely indebted and will be driven to extreme lengths of borrowing especially given the fact that mobile lending platforms have increased in popularity thus increasing ease of borrowing. In the event that sports-betting becomes a rewarding habit, the gambler continues to indulge in other habits which are self-defeating since this is not hard-earned money. Some of the social problems that are aggravated with casino businesses include the addiction to alcohol, increased crime rates, prostitution, family strife and gambling characterized by compulsiveness (ibid).

Advocators of gambling argue that commercial gambling is a source of employment which is key in the provision of labor (Crookall, 2000). Casino businesses always require provision of labor such as security, those who technically support the customer and attendants. The challenge with it is that jobs created from such cannot be easily estimated because they are engaged in different stages of gambling. In addition, there is a forward and backward linkage between gambling and other sectors in the economy such as hotels, transportation, and provision of security as well as advertisement through the media. Gambling is mainly dependent on consumer expenditures and business cycles through which earnings tend to vary widely between good and bad economic times.

Price Waterhouse Coopers (PwC,2017) noted that South Africa has the largest gambling market followed closely by Kenya and Nigeria. According to Geopoll (2017) gambling has become popular within the sub-Saharan Africa (SSA) mainly among males since they have high level of affinity to the thriving technology and the increasing popularity of local sports betting, players and the convenience of using mobile phone as a tool for betting. With such developments, there have been polls carried out with an aim of trying to understand consumer betting behavior and consumption, drivers and motivations as well as decision-making patterns (Elliot, 2018)

1.1.1 Evolution of the Betting Industry in Kenya

This section provides reviews on the current gambling patterns in Kenya and its growth over the past few years. The gambling industry has been burgeoning for the last approximately 30 years. This is evidenced by the increasing number of gambling, betting and lottery companies that have been launched in the country in the recent past. By the year 2019 there were more than 20 betting companies namely: Sportpesa, Betway, Betika, Betin, 1xbet, Bet yetu, Hollywood bet, Elibet, Eazi bet, Cheza cash among others. In most of these companies sports betting seemed to have the largest share in this industry.

In Kenya, Chapter 132 of the Betting Lotteries and Gaming Act of the Laws of Kenya seems to have served the country well until the early 1990's when the number of Casinos grew. This Act came into effect in 1996 and prior to this all forms of betting were considered illegal. The exponential growth in this industry was associated with; weak and obsolete legislation, perceived economic size of the industry, lack of a clear gaming policy; political interference of the operations of the regulatory board among others (Mutuku, 2013).

According to Geopoll (2019) statistics show that Kenya has the largest number of youths engaging in gambling within the SSA with sports betting is the most favored form of gambling. In addition, Kenya and Nigeria are huge markets for gambling after South Africa. Kenya has experienced patterns/trends in gambling growing over time to hence becoming a key sector in the economy with sub-sectors such as prize competitions, sport betting and lotteries. Prior to license revocation, Kenya had over 30 licensed betting firms as well as casinos.

In the gambling outlook report by PWC (2017-2021) stakes in sports betting industry in Kenya are high and generated income worth approximately USD20 million. It was estimated to grow to USD 50 million in early 2020’s as demand increases. The sector continued to grow and in the year 2015 Kenyan government collected approximately USD 28.3 million in form of tax revenues ranking third. In the financial year 2016/17 gambling revenue was USD 19.8 million and this was approximately half of the health budget in Kenya (Betting Control and Licensing Board (BCLB), 2016/17).

In many African countries just as Kenya is, gambling is considered to be a legitimate recreational and leisure activity. Since majority of Kenyans have access to the mobile phones, Kenya has seen an increase in the level of addiction due to sports betting. The increase in

sports betting is associated with the burgeoning of mobile phones as well as the internet penetration (Geopoll Survey, 2019).

The rise of SportPesa, a betting company started in 2013, accumulated a substantial amount of revenue sufficient to finance major leagues in Kenya which brought it into the global arena. Statistics showed that SportPesa was the most famous in regard to the market share controlling about 82 percent of online gamblers while the rest of firms controlled the remaining 18 percent which includes Betin, Elitebet,Betika, Mcheza and Betpawa (Geopoll Survey, 2014). Most of the gamblers come from low-income families and they are found in different locations in the country and places skewed on certain demographics for instance, males located in urban areas aged a certain range of years. The unique thing noted was that participation was done by both male and females, though primary data collected and analyzed by other studies showed that males participate more often and that approximately 50 percent of the gamblers are aged 18-25 years. This indicated that the youths are the most likely involved in gambling due to fondness with their mobile phones, high appeal for sports and more importantly the high unemployment rates amongst them.

A recent survey by KNBS (2018) provided evidence that more than 7 million Kenyans were unemployed, more than a quarter of them desperately need means of earning a living. According to Geopoll Survey (2019) 40 percent of the low-income gambling consumers are not employed with 29 percent of them being students. Consequently, a significant proportion of the low-income gamblers depend of gambling as a source of income for them.

According to (Walker, 2011), there have been significant studies carried out on gambling over time. Despite this, the research on gambling, particularly in economics and business, is still limited. Consequently, there is need to carry out a research in this area since lawful forms of gambling such as casinos have an economic aspect too. Despite the effects of global economic melt-down in 2007-9, governments have looked at legal casino business as a means of alleviating fiscal pressure. This is more evident in USA than in any other countries since majority of the states are making casinos legal (Walker, 2011). This pattern has been seen across the countries in the world and this based on the perceived effect of casinos on local or state economy by legislators (Walker, 2011).

1.1.2 Types of Gambers

It would be important to highlight the various types of gamblers so that we can understand which category (ies) is/are more likely to be found among low income youth. Gamblers can

be categorized as: full-time paid gamblers; unsociable or temperamental gamblers, part-time social gamblers i.e casual and serious, getaway gamblers and uncontrollable gamblers, (Custer R. M., 1985).

Paid gamblers refer to the people who take gambling as a job and as result they ought to have skills for the type of gambling they participate in for them to be successful. There is a well calculated move to bet against their bankroll and they have to remain in control so that they do not engage when the gambling is not profitable to them. As a result, this category of gamblers cannot be said to be addicted. Similarly, antisocial gamblers are motivated by money in their gambling but unlike professional gamblers they cheat and scam others or even the casinos.

Casual social gamblers do gambling for special reasons such as to have fun, relax for instance in a social setting. Occasionally, casual gamblers engage in games such as poker with colleagues or friends. They can also participate in lottery if there are huge sums of money or even jackpots on events which do not happen frequently such as the world cup. On the other hand, social gamblers are more less the same as casual social gamblers, but they take gambling as a hobby just like any other form of recreational activity. The serious social gamblers always have control of the betting and they value their families and jobs more than gambling

Escapist or getaway gamblers have preference for the gambling that does not necessarily need any real skill and these includes bingos or machine gambling. As they play these games, they tend to get relieved from boredom, depression, anxiety and loneliness. Although it does not give much excitement, it provides a numbing effect for the participants to escape their troubles. The other type of gamblers is the compulsive gamblers in which their participation in gambling has a negative effect in all aspects of their life as it goes on. For them, their gambling is unmanageable because they perceive it to be the main activity in their life. Since gambling is prioritized before their families and their jobs, their failure to have money makes them go out of their way to get money by cheating, lies and even stealing. Due to addiction, these type of gamblers would never stop gambling regardless of their desire to do so.

1.1.3 Factors Influencing Prevalence and Incidence of Gambling

There are various factors that have led to increased number of the gamblers in the country.

Media and commercial advertisement has hugely contributed in enticing eligible candidates to gamble (Odhiambo, 2018). Gambling messages have been designed to pass betting as a normal activity. Similarly, Jacobs (2000, 2004), noted that youth involvement in gambling has been made easy through the media and the availability of internet. The media has power to influence people's perception. Mwangi (2011) calls this power of media a 'symbolic system' that forms the basis of common standards or what is widely perceived as good in society. Socialization happens through internalization of such common standards and perceptions. In this respect, media has made gambling a norm in the society through the numerous gambling adverts aired on the local television stations. In Kenyan television industry, gambling commercials that used to air between 6pm to 10pm were averagely ten advertisements in the time gap (Kenya's Ministry of Interior and Co-ordination of National government and BCLB, 2019).

Unemployment is believed to have a causal sequence on gambling (GeoPoll survey, 2019). Most youths caught up in the compulsive gambling habit do so with the hope that they can make ends meet. If one earns about Kshs. 5000 from the daily hassles, they may be tempted to make it slightly more than that to keep their head afloat and be able to provide for his family and meet his other responsibilities. Any increment on top of their original income is acceptable and it determines the amount that they are able to place for betting. If in their comparison, betting is found to be more profitable than the ordinary job of Kshs. 5000 then one may forego the job for gambling. On the other hand, some people in Kenya people indulge in gambling since they do not have any other thing to do and/or do not have any form of employment which could earn them an income.

Technological advancement and ease of internet access - population is high and urban areas are densely populated compared to rural areas. This means that most of the people who can engage in these games have an enabling factor given their location and exposure. Since most games are not land-based this means that gamers can play as much as they please depending on their own comfort and convenience provided one has the device and/or access to internet. The online alternative provides access to the world's best online casinos which have fully-optimized mobile sites that would still allow one to get the experience of playing on a PC or betting machine somewhere. Internet speeds have also been improving over time this therefore means that they can be relied on to provide a smooth and uninterrupted gambling

experience. It is estimated that out of the 45million people in Kenya 30million have access to the mobile phone (Communication Authority of Kenya, CAK, 2019).

Failure to monitor the time and money spent on gambling and effort to win is one of the key problems faced by gamblers. Those who loose try desperately to win back the money and this causes the individuals to look for additional sources of funding. Kenya has witnessed growth in the use of mobile money platforms. The supply therefore meets the demand and the market forces will continue responding to each other in a bid to reach equilibrium.

Structural characteristics of gambling allude to the features of famous games such as World Cup, FA, UEFA Europe league, English Premier League, AFCON just to name a few which have frequency of events. Such games happen fast and their skill elements are continuous. They are characterized by the illusion of almost having won. They have the attached chances or probability of winning; almost ideal sizes of the jackpot and stakes; and use of credit when playing and they are problematic in nature when gambling (Reith, 2006).

The problem of gambling is due to availability and convenience of the gamblers. Electronic or slots machines are usually located in places such as outside casinos, bars, clubs and even at the hotels and this encourages impulsive gambling and this leads to highest gambling problems witnessed in the world (Reith, 2006). Sport betting has slowly become one of the burgeoning industries in the entertainment industry and hang-out joints. The fact that they are appealing they are popular among young men and women who are computer literate although women and may be a bit uncomfortable with traditional betters. The less the time and effort required, the more impulsive it becomes to engage in impulsive gambling (Reith, 2006).

The nation's unique development status and progress compared to neighboring countries like Uganda, Tanzania, Ethiopia, Sudan, Somalia - it can be assumed that the level of disposable income is relatively high (UNCTAD,2018). There being a positive correlation between disposable income and the propensity to spend, it will not be so difficult for one to part with some reasonable amount at least for leisure and fun activities. In terms of ease of doing business, one would be able to get into the market and stay in it if they abide by the rules. Betting regulations are not so stringent in Kenya compared to its neighboring countries and thus it is relatively easy for gambling firms to enter the Kenyan market and supply the service without much government interference.

1.1.4 The Cost-Benefit Analysis of Betting

Some people have been debating over the costs and benefits of gambling. While proponents put emphasis on the economic regeneration aspect, opponents insist on the social costs, especially the increase in problem gambling and its adverse effects (Reith, 2006). Mostly, polarized opinions based on ethical and/or religious beliefs rather than facts seem to form the basis of the debate (Reith, 2006).

Gambling is part of leisure and entertainment and is a growing industry especially casinos where people are also employed and they depend on such for their livelihood according to the Commonwealth Productivity Commission Inquiry (CPCI, 1999). Therefore, it is a two-way traffic that while some, especially youths depend on gambling as a source of income, another part of the population gamble as a form of leisure.

As noted by Rosenbaum and Wong (2015) gambling provides gamblers with socially supportive resources including and not limited to socialization, eating among friends, temporarily escape from problems associated with life as well as engagement in meaningful social networks more so for older consumers who get opportunities not to engage in their daily activities. Further they argued that gambling is a reliever for gamblers suffering from negative symptoms associated with mental fatigue which are as result of withdrawal, fascination as well as incompatibility.

In a study carried out in Australia Veal and Lynch (2013), established that millions of people are attracted to gambling for leisure. The implication is that majority of the gamblers in Australia only engaged in gambling after their normal work as a way of passing time. Further, they showed that traditionally gambling was a form of income generating activities. According to King and Wan (2012) in their study in China reported that, gaming has a positive multiplier effect and this region's economy has improved.

Opponents mostly discuss adverse effects on society, such as increased crime, drunk driving when they win or suicides caused by a bet loss. However, it is possible that casino gambling presents a wider range of forms of entertainment and could be a substitute, leading to businesses in the locality employing less workers. In this case levels of unemployment or employment might not vary; however local businesses would be hurt. Also, if a casino takes the place of other businesses but less labor is needed, it is possible that unemployment in the

locality will increase. The casino may also offer lower wages than the businesses it replaced, especially if it is the only opportunity low-skilled workers have.

Majority of the adolescent youths show some development of pathological gambling and they are more susceptible to the risk of gambling (Derevensky & Gupta, 2004b; Shaffer & Hall, 1996). In their earlier study, Vitaro et al., (1998) sampled 765 teenage males based in Montreal and found overwhelming evidence that abuse of substances and gambling were positively related and significantly affect one another. They observed that concomitant gambling and problems of substance abuse were as a result of impulse control deficits that are visible in early childhood and early adolescence.

Vitaro et al., (2001) in their study in Montreal concluded that recurrence of gambling at 16 years was associated with problems associated with gambling such as delays in school and alcohol and drug abuse. In their study Winters et al., (2002) in the sample of 305 adolescent youths and young adults found out that gambling behavior in them correlates with substance abuse among the youths.

The economic benefits of gambling include: the revenue from taxation, employment creation, wages and capital payments which contributes significantly to GDP. (Walker, 2011). These benefits are accompanied by costs such as "cannibalization" of other industries, gambling problems such as crime, alcoholism. There has been no clarity on the costs and benefits associated with gambling due to limited research carried out in this field because there are only few researchers investigating other issues in this area. The challenge with estimating the social costs has been comorbidity where individuals with gambling disorders may have had underlying issues that caused their costly behavior socially, so the undesirable behavior is caused by a number of disorders (Walker, 2011).

The net present value of gambling can be said to be negative in the sense that it can only contribute to economic growth but not economic development. From a positive perspective, betting/gambling looks like the next economic frontier that has the ability to grow the economies of some developing countries. However, in social welfare economics, there is no Pareto optimality in gambling.

1.2 Problem Statement

Review of literature has proposed two polarized opinions in explaining the effects of gambling. The first one is of the view that gambling is associated with economic benefits that spur growth in the local economic and thus the positive effects of gambling overshadow negative effects: what is described as boosterism model. (Stokowski, 1996). The other view suggests that gambling activities are associated with social disruptions that produce extensive negative change in the social fabric of the society which include increased crimes, social pathology, bankruptcy among others (Tosun, 2002; Chhabra & Guroy, 2007).

Gambling is a fast-growing activity in Kenya in which many young Kenyans are involved in it as many unemployed people turn to it as a source of income. According to Schmidt (2020) in a survey conducted in Western Kenyan using a sample of 111, he found that 55 percent of the men and 20 percent of females had placed bets previously or currently betting with peaks in the age group between 18 and 35. This is in line with the Geopoll (2017) estimation that more than 70 percent of the Kenyan youth bet on sport events. This proportion of the gambling Kenyans is alarming as resources that would have been used for individual development and for national development are being lost to gambling (Angote, 2016).

Opponents of gambling argue that it creates several social problems by increasing problem gambling and crimes rates seemingly rise while proponents of gambling argue that it creates significant wealth, new jobs and enhancement of economic opportunities (Reith, 2006). Moreover, casino gambling is beneficial including an increase in tax revenues, more employment opportunities, higher pay for workers and payments to capital. Thus all these lead to enhanced economic growth (Walker, 2011). Despite the popularized benefits of gambling, there are negative effects such as many gamblers are deemed to abuse drugs (Vitaro, Brendgen et al., 2001; Derevensky & Gupta, 2004; Shaffer & Hall, 1996; Tremblay ,Vitaro, Brendgen and Ladouceur (2001); Ferland ,Vitaro, Jacques, and Ladouceur (1998).

Kenyan youth form a substantial percentage of Kenya's population today and it is crucially important to ensure that they are adequately engaged and prepared to fit in the dynamic and turbulent environment in society. It is estimated that 76 percent of these youths are engaged in gambling (Geopoll, 2019). With the growth of gambling industry leading to popularity and prevalence, it is imperative that there is need to have profound knowledge on the sector and its socio-economic effects on the society (EPRC, 2016). According to Reith (2006) gambling

contributes significantly to reduced labour productivity among the youths in the working age in many developing nations such as Kenya.

Despite the huge numbers of youth involved in gambling and the attendant negative impacts there are only a few studies conducted in Kenya on effects that gambling has had on youth (Koross, 2016; Odhiambo, 2018 & Njoroge, 2018). However, the studies do not account for the effect of gambling on the poor communities most of whom are residents of slums in many cities in Kenya. This is despite the fact that they form majority of the gambling proportion in the country. Therefore, there is need to have an empirical evidence on gambling activities and its effects on the low-income population. It has also been noted that majority of gamblers are the poor in society and are mainly found in poor urban areas due to the menace of high unemployment (Jacobs, 2000). This presented the need to understand the factors contribute to gambling behaviour of these low incomes youths and the effect gambling has on the behaviour of these low-income youths. As a result, this study investigated the effects of gambling on low-income youth with specific focus on Dandora which is a slum in Nairobi.

1.3 Research Questions

i. What factors influence low-income youth gambling in Dandora?

ii. How does gambling affect the behavior of low income youth in Dandora?

iii. How prevalent is gambling among low income youth in Dandora?

1.4 General Objective

The broad objective of this research is to examine effects of gambling on low income youth. Specifically, the study will seek to:

i. Establish factors that influence gambling of low income youth in Dandora, Nairobi.

ii. Investigate the effect of gambling behavior of low income youth in Dandora area

iii. Explore the prevalence of gambling among low income youth.

iv. Make policy recommendation for ameliorating gambling problems.

1.5 Justification of the Study

The findings of this study will be significant to a number of stakeholders.

Policy makers and various stakeholders working with different sections of the Kenyan government such as the Ministries dealing with youth, sports and treasury may find this important. Policy makers may find recommendations herein useful regarding the regulation of gambling activities in Kenya.

Findings of this research will also contribute to the existing pool of knowledge regarding the economics of gambling. Other researchers will find this useful as a reference material to advance their research. It will also be of interest to some scholars and researchers to identify the research gaps and will help them to come up with a study to bridge the same.

1.6 Organization of the Study

The thesis is organized as follows: Chapter two covers the literature review of the study. Particularly the chapter covers in detail the theories upon which the study will be based. It will also provide a summary of literature that point out to the research gaps, weaknesses of existing works and how the study intends to fill in those gaps. Chapter three covers the methodology that will be adopted in this study. It specifies the variables, data type, source, research design to be adopted among others. Literature and materials that were referred to have also been provided in the references section of this paper. Chapter four presents findings of the study and discusses them at length. It also shows the various tests done on the data. Chapter five summarizes by giving conclusions for the study and makes suggestions that policy makers may consider.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter does a presentation of literature upon which the study is based. The three main sections are: theoretical literature, empirical literature and overview of literature. Theoretical literature review explains some theories that support this research. Empirical literature presents in detail other empirical works that have been done in this area of study. Overview of literature will present strengths and weaknesses in the reviewed literature and discuss contribution of this study to the existing knowledge.

2.1 Theoretical Literature

2.1.1 Probability theory

The term probability refers to the possibility or the chance of something happening. It is basically an estimation of relative average frequency of the event occurring in repeated and independent trials. The probability relative frequency ranges between 0% to 100% and it allows us to predict the happening of the event without necessarily indicating the time of the happening. In any particular game, probability plays an important role in determining the terms or conditions to achieve some given results or some financial prospects in addition to the determination of worthiness of playing a given game. Probability can either be expressed in decimal or fraction form. Another way of describing probability is the use of odds in describing the chances of winning in betting or lottery (Turner, et. al, 2000).

The probability of success is the chance of success relative to the sum total of both the chances of success and failure. For instance, 1/4 can be expressed as 25 percent or in decimal places as 0.25. If there are 4 tickets in total and a player picks one of the tickets, then the chances of success would be 1/4 or 0.25. The odd ration shows the ratio of success to failure the odd ratio would be 3 to 1 implying that there are 3 probabilities of losing and only one opportunity to win. In converting the odds into probability of winning, you just use the chances of success as numerator and the total chances as denominator. When chance of winning equals' chance of losing in an odd ratio, that's referred to as an even odd and a payout of the same ration is referred to as even money (Turner, et. al, 2000).

It is important to estimate the available number of opportunities for any occurrence in a game in computation. In an instance of loyalty in any lottery, the probability of winning increases with the number of tickets bought. In other words, the more tickets are bought the higher the chances of winning. While playing in a random event, much of the systems and beliefs in the gambling are more of misconceptions and players imagine that as they keep playing they will eventually emerge as winners. Although random events are not predictable, not planned and erratic in nature, sometimes they apparently serve a purpose or follow a pattern. The essence of random selection is an ideal that is not usually obtained. The use of gambling machines in casinos is very efficient in maximizing uncertainty and thus their results are near randomness (Turner, et. al, 2000). Gamblers persistently believe that there is a pattern of chance and this is traced from misunderstanding of two laws in statistics as follows:

>Law of averages: The idea is to find out the average of things over time.

>Law of large numbers: It is based on the principle that outcomes closely approximate the mathematically computed probability by increasing the sample size (Turner & Horbay, 2003).

Computer based gambling such as machine gambling, video gaming and lottery make use of complicated mathematics called congruential iteration to generate random events using big numbers; A, B and M repeatedly and the values generated change every time. This formula produces complex numbers with increased level of uncertainty and thus the seed value provides uncertainty and it is said to be pseudo-random since the numbers are produced by a formula. The gamblers assume that these random events are self-regulating because their experience seemingly conforms to this belief. The second law of large numbers is associated with the regressed mean and the prediction is unique e.g too low or too high followed by the scores that are near the mean (Turner, 1998).

The idea is that there is a convergence of the averages towards the mean but the experience results to illusion by gamblers that it is pushed by some forces. In addition, gamblers are also convinced by the increase in the number of bets that the random events are self-regulating. When one doubles the bet after a failure, there is a high possibility that the gambler will win based on the statistical law of averages. The fact that people's expectations are that the random events correct themselves automatically, they use the doubling as an investment strategy. In the incremental strategy, there is always a push towards random events to have

them look random (Turner & Horbay, 2003). According to Turner (1998) double strategy leads to success on the basis that random events are self-regulating and thus most of times doubling works and this justifies the notion that self-adjustment will occur in random events. The structure is designed in such a way that it is slow in money accumulation but in the end the gambler experiences a disastrous losing streak.

2.1.2 Information Theory

The theory by Kelly (1956) uses information theory to explain investing and gambling. The idea was that gamblers should maximize their expectations of the logarithm of the capital instead of expected profit attached to these bets because it would lead the gambler to gamble all he had when prospects of winning were perceived as positive. According to Larry Kelly it was the gambler's capital's exponential which brought about addiction associated with consecutive bets through application of law of large numbers. Quantification of the data in the theory helps in making best decisions in games played under circumstances of imperfect information by using the available information. In betting gamblers tend to logically evaluate all the relevant variables in the game relative to the bookmaker's assessments, since it is presented in the form of odds or spreads and risking a bet with more likelihood to win if the assessments greatly vary. This is more applicable in sport betting. Sport betting applies information theory because statistics are available. Economists have found different results by testing different mathematical theories using sports.

Random walk which is part of efficient market hypothesis is one of theories applied in sport betting where information on various variables fluctuate such as prices and returns. The assumption is that market automatically adjusts to new information and thus participants cannot go against the market since they operate on the same knowledge base which formed the basis of market alterations. As noted by Fama (1970) a structured market should have three qualities:

>The assumption of zero transaction costs in trading

>Free costless information to all players in the market.

>Concensus on recent information used for present and subsequent prices for every security

According to statisticians, the third assumption lets information theory to be applied in sports handicapping. Failure to reach an agreement by everyone on how information affects the end-results leads to varied viewpoints.

2.1.3 Expected gains theory

The information that gamblers have plays an important role in capital growth as postulated in this theory. This theory supports the analysis of the best betting situation in such cases. This is computed on the basis of the initial capital, the capital after the bet is made and the amount of the side information possessed by the player as far as the bet is concerned. This equation is only applicable on the assumption of zero transaction costs and no minimum bets. In the presence of either of these two conditions, there is another key concept that is important which is the fact that probability of the gambler's ruin which must be faced by the gambler.

2.1.4 Side information theory

There are always two possible outcomes in an event; success or failure. Ideally, if one had a prior knowledge he or she would double betting on the outcome of winning. As noted by Kelly (1956) optimal strategy known as Kelly criterion can be applied regardless of the level of complication of the situation in order to increase capital given the available information. Having side information affects the happening of actual event besides the available knowledge about the outcome. The information one has always affects the decisions to be undertaken and thus it is important to assess the information one has based on which decisions are to be made.

2.1.5 Prospect theory and cumulative prospect theory

Prospect theory has gained popularity in making decision under risk or uncertainty over the last one decade with wide application in various contexts. Taking into account distortions associated with probability, reduced sensitivity and status quo as the basis, this theory is key in explaining inconsistencies such as variations from the effect of certainty and expected utility such as Allais paradox. Theoretically, this theory violates the functional aspect of stochastic dominance (Kahneman and Tversky, 1979). Stochastic dominance requires a change in probability mass from bad to better consequences and this is associated with improved prospect (Fennema & Wakker, 1997).

Theoretically, problems were solved using the cumulative prospect theory brought about by Kahneman and Tversky in 1992 and it addressed the issue of stochastic dominance. In addition, this theory adopts the rank-dependent method in the transformation of probabilities as introduced by Quiggin (1982). (Fennema & Wakker, 1997).

The theory took into account the rank-dependent functional which transformed cumulative, rather than individual probabilities while accommodating a growing literature. In addition, it satisfies stochastic dominance. It is a model for descriptive decisions which are undertaken under risk and uncertainty (Tversky, Kahneman, 1992). The idea is that people think of possible outcomes usually in relation to reference point. In specific, they relate their expectations of the outcomes with the status quo and this is popularly known as the framing effect.

The participants such as gamblers in our case have different risk attitudes towards gains and losses in regard to the predetermined reference points. People are mainly concerned about the potentiality of loss as compared to gaining. The players in such decision-making give much weight to extreme events and less focus on average happenings.

In uncertainty situations, the utility is calculated by summing up the utilities of the outcomes with weighted probabilities. This is based on the premise that prospects which are clearly dominating are removed in the editing phase, and in making the normal weights they add up to one in line with the basic principle of probability. If that is not the case, then rank-dependent method or cumulative prospect theory first proposed by Quiggin (1982) making decisions under risk and Schmeidler's (1989) decision theory under uncertainty is applicable. In this model, the entire cumulative distribution function is transformed and applied by the present theory.

2.2 Empirical Literature

Bol T., *et al* (2004) investigated gambling and income disparities in the United States using panel data between 1980 and 1997. Despite the fact that a number of studies have examined consequences of increasing income imbalance, studies for the effects on gambling behavior are minimal. The study findings indicated that an increase in income inequality had a positive correlation with increased expenditure on gambling. The study employed longitudinal data

and estimated fixed-effects regression model in the analysis of two categories of gambling expenditure classified as pari-mutuel betting spending and lottery spending. Increased lottery expenditure was found to positively affect income inequality while pari-mutuel betting was found to be non-linear for high income inequality. The positive effect of gambling expenditure on income inequality was associated with mobile aspirations, resource availability for the "well to do" and status anxiety in the lower part of the distribution.

Hirshberg and Lye (2013) carried out a research in Australia and they investigated the effect of stimulus packages on gambling. One of the components was cash payments given directly to individuals and households. Ideally, these payments are meant to increase expenditure of household consumption and thus lessen the expected decrease in aggregate demand. Due to the increased popularity of electronic gaming machines concerns were raised regarding this suggestion; that a significant amount of the payout would be used for gaming. Monthly data for net EGM expenditure was used as well as the number of gaming machines situated in clubs and hotels in three states that were known for gambling. Equations were defined for each of them. The response variable was the log of total net expenditure on gaming (TNE in USD for the year 1989/1990) , with a dummy variable being the log of the number of EGMs(Smoke) and used to explain variations in EGM demand influenced by number of smoking bans in 17 gaming venues. A series of dummy variables that corresponded to times stimulus payments were paid were used as regressors. The study applied a lag operator with a difference of 12 periods to eliminate the periodic pattern in TNE which was in months.

By the use of Seemingly Unrelated Regressions (SUR), Zellner's (1962), estimated three state equations taking into account the autoregressive error process varying from one state to another. The specifications were dependent on each equation by the use of Lagrange in detecting autocorrelation as well as the Ljung-Box Q statistics. The study established the presence of white noise from the detection of correlograms of the residuals in every equation. In their findings, they established that gaming expenditures increased significantly by 10.4 percent for the first stimulus while second stimulus increased the gaming expenditures by 15.9 percent when the stimulus was increased by 26.3 percent for 4 months. Consequently, they could not reject the postulation that impact was the same in the 3 states but they rejected, at a significance level of 0.05, the hypothesis that two stimulus packages paid in different periods had a similar effect on electronic gaming machine revenues. Payments in the first

stimulus saw low income households and pensioners benefitting. Payments for the second benefitted a diverse range of households outside the first scope.

Brown et. al. (2008) conducted a study on the relationship between use of credit, at an individual and household level, and gambling. Particularly, they sought to find out the how gambling affects risk-taking behavior such as availability of credit options and the use thereof leading to indebtedness. The study used a sample of cross-sectional data collected in UK Expenditure and Food Surveys for 6 years starting from 2001. The findings provided evidence that using credit had a positive effect on gambling while there was a strong positive correlation between gambling and credit use at household level. It was particularly evident in lower income households.

The study by Elgar et al. (2017) researched relationship between pathological gambling and relative deprivation in youths at a micro level. The study was based on symptoms reported by the pathological gamblers themselves and family data on material resources, for a total of 19,321 participants included in the 2013-2014 in Italy for school going children. The study findings revealed that individuals from families that were relatively deprived of resources had increased the rate of pathological gambling symptoms by four times. This was indicated by the prevalence ratio of 4:18. Using a multinomial negative regression analysis, the disorder symptoms due to gambling were found to be more prevalent in among men in the first-generation immigrants and not in youths. In this study the controlling variable was the peer support. The findings supported the conclusion that high level of deprivation and having low peer support jointly affect disordered gambling.

The study in Manitoba by Edgerton (2014) conducted a longitudinal study of young adults for a period of four years starting from 2007 to 2011. The study was initially based on 679 Manitobans between 18 and 20 years old. It concluded with 517 respondents giving a retention rate of about 90 percent in the period. Using the latent growth curve modeling, the study findings showed that the severe problem of gambling and the rate at which it changed depended on factors such as sex, age of the participants, gambling experience, alcohol consumption, drug dependence, anxiety, social support perception, impulsiveness and illusion control. The study established that gambling risk diminished over time due to a downward spiral which is inevitable among youths.

Dyall (2007) in his study concluded that gambling plays a key role in social disorganization and deprivation of many communities in New Zealand particularly to those who came from low income families and minority ethnic groups. There was evidence of adoption of the public health policy backed by legislation to deal with the challenges posed by the gambling especially to the vulnerable groups with increase in resource allocation to deal with this menace. Gambling caused challenges such as poverty, anger, infightings, stress, lack of food and rent in Maori area in where the majority of the residents were the poor.

The research by Barnes et al. (1999) sought to find the how alcohol consumption affected gambling behavior among youth in the US. Samples of youth were drawn from Buffalo area, New York at a household level. They used a multivariate analysis of variance. The findings of this study indicated that gambling positively increased with an increase in drug use by youths in US. Findings showed that gambling and use of alcohol were associated with four main factors which include moral disengagement, adolescent and peer delinquency and impulsivity. Other factors such as monitoring by parents, drug abuse and smoking cigarette were main factors that determined use of alcohol. The study showed gambling was prevalent among the youths with evidence that gambling and alcohol consumption was associated with smoking, illegal drug use as well as delinquency.

While studying the gambling problems Auger et al. (2010) sought to find out the effect of impulsivity and how socio-economic status (SES) interacts to influence gambling onset in youth for the period engaging students with a least 12.5 years of age in Canada. Using the Cox proportional hazards regression, the study findings showed that impulsivity led to increase in the risk of gambling for those who did not possess university degree as well as those living in poor dwellings in Canada. Those with no university education were more vulnerable to impulsivity in the region as compared to those who had university degree.

Lussier et al. (2014) employed a cross-sectional design and sequential logistic regression model in their study on gambling in Canada. It indicated that majority of the youths who accounted for 60.2 of respondents had gambled within the preceding one year. The study noted that social bonding was a compensatory factor while location and peer influence posed as major risk factors. They forecasted the challenges faced by young adults engaged in gambling such as impulsivity and gender issue. In addition, the findings showed that

antisocial behaviour strongly contributed to problem gambling closely followed by environmental risks factors and peer influence.

The Scotland study by Moodie and Fannigan (2006) found gambling prevalence to be 9.0 percent while 15.1 of those interviewed were found to be at risk of gambling. In their endeavors to find out the means of gambling among the youths, they noted that fruit machines in all the groups factored in this study which consisted of 2,043 youngsters aged between 11-16 years. In their country, the fame of gambling was due to the risks and high rates of problems associated with gambling. It was established that pathological gamblers have been a matter of concern in Scotland with evidence that 76 percent of the people who live in Scotland had gambled.

Arge (2015) studied the relationship between unemployment and gambling in Iceland. In doing so demographic variables such as gender, age and employment status were considered among others. The respondents were aged between 18 to 70 years, the mean was 41 years and standard deviation was 14years. The study had two objectives: to find out relationship between unemployment and gambling and secondly, to compare the prevalence of gambling among the unemployed, employed or students. The findings were as follows: unemployment and gambling were found to be weakly correlated and gambling prevalence did not vary much according to employment status among the unemployed, those who were employed or in school. Descriptive statistics were collected for the relevant variables and SPSS applied to achieve objectives of the research. To check for variations in age between the genders individual sample *t*-tests were applied. To determine the significance of the associations between categorical variables chi-square test was applied. To determine how strongly the categorical variables were associated Phi's correlation was calculated. 53.2% of the problem gamblers were aged between 18 and 25; 87.2% of the problem gamblers were male; 23% of those who were unemployed reported feeling depressed due to low or no income while 9% of those employed or in school reported the same feeling.

Reed (2012) in gambling and employment did a research to find out the impact of gambling on work. The survey was done online in United Kingdom among respondents aged 25-34 years. Demographic variables were used here as well and descriptive statistics were also used for analysis. The findings suggested that unemployed people of those in low paying jobs were twice as likely to engage in fixed odds betting than those in well-paying jobs; more than 82%

of the respondents thought that gambling and financial constraints resulting from it thereof are likely a distraction for people who are working; 6% men thought about gambling at work compared to 1% among the women; 45% of those with responsibilities were more likely to gamble compared to 39% among those without responsibilities.

In their study Ssewanyana and Bitanihirwe (2018) studied the gambling behavior among the youths in Sub-Saharan Africa. They noted that increasing unemployment and low wages in Sub-saharan Africa among the greatly contributed to youths' participation in gambling. The industry was prominent and had serious economic implications such as employment creation and revenue generation which has created a positive attitude towards it by the young people. That noted, gambling has also had negative effects such as anxiety, depression, and sleep deprivation, cardiovascular disease, peptic ulcer disease, and hypertension. These arise mainly when one becomes addicted to gambling. As a result, they suggested that a couple of measures should be undertaken which include: laws outlawing underage gambling to be enacted, education and creating awareness concerning gambling would be important, increased allocation and financing to aid in improvement of inadequate programs for addiction and mental health which were associated with problem gambling in Sub-Saharan Africa among other measures.

The study by Olaore et al. (2020) examined the relationship between youth engagement in betting games and the level of unemployment in Nigeria. To achieve the objectives of the study, the study applied structural equation model (SEM) and confirmatory factor analysis. The evidence showed that factors such as technological advancement, big winning promises as well as bonuses played an important role on the youth participation on betting games. Contrary to the priori expectations, unemployment among the youths was found not to significantly affect the participation of youths on betting. The study also noted that betting had caused increased awareness on various sporting activities in the world in addition to the growth of the Nigeria's economy.

In their study in Uganda by Ahaibwe et al. (2016) examined the effect of social and economic factors on gambling in Kampala. The study used data collected from the household survey carried out in Kampala city in April 2015 as the basis and the findings provided evidence that 25% of adults had engaged in some form of gambling in the one year preceding the survey. The key factors that were found to affect participation in gambling included: age, income,

employment status and sex. The gambling was mainly an activity for less fortunate in society and the poor spent much of their incomes on gambling as compared to the rich counterparts.

In a study carried out by Njoroge (2018) titled gambling in Kenya where he focused on Nakuru, explored the factors that led to participation of youths on gambling in Nakuru. He noted from the total number of those who were interviewed that approximately 39 percent of them had participated in gambling activity with 4.6 out of 100 of the respondents reported to have engaged in online gambling. The study showed that participation in gambling was affected by factors such as incomes, internet access and level of advertisement of gambles in the media using a descriptive study design. The study however noted that education level was not a key factor affecting gambling in Kenya.

Odhiambo (2018) did a research in Kenya to assess the effect of gambling commercials on youth behavior. Surveys were done among some youths selected through purposive and proportionate sampling aged 18 to 29 years. The study was focused on how gambling affected youth's behavior after they internalized and actualized the gambling messages received. The variables considered were demographic such as age, level of education, source of income among others and descriptive statistical analysis was used. The results obtained showed that undergraduates would gamble more than postgraduate; 80% of the respondents said that constant gambling commercials and advertisements made them aspire to gamble more especially when there are winners; 21% youths used computers to gamble while 69% and 10% used mobile devices and gambling booths respectively; 52% of the respondents spent an average of 6 hours daily in gambling while 41% and 7% spent less than and more than 6 hours respectively; 41% of the respondents said that they had ever won money out of the bets they placed while 59% lost.

Koross (2016) did a research to find out how betting affected Kenyan university students. Demographic variables were considered in this study and descriptive statistics were used in the analysis. 70% of the respondents indicated that money was the biggest motivator, while the rest did it out of boredom or just for fun. 68% of those who came from low income families and were not getting support from parents relied on gains from winning the bets for their entertainment and daily expenditure. There was a range of all types of gamblers among the university students, from those who did it to sustain their daily upkeep to those who placed bets just to conform and enjoy themselves and those who missed regular class

schedules due to gambling. To get money to place the bets 55% had to sell a belonging or borrow, 26% occasionally found other sources to finance the bet and 19% just used whatever amount they had. Koross' study also found out that 65% of students used their school fees or upkeep money to bet, 20% had done it occasionally while 15% had never done it before. He noted that a number of students had been reported to use their school fees to gamble and lost a significant amount and therefore ended up dropping out of college because of non-payment or not sitting for exams. The findings also suggested that there's a high correlation between smoking, drinking and gambling.

2.3 Overview of Literature

The above literature shows that gambling has become one of the key industries that are rapidly growing with some gamblers doing it for leisure while others do it as their source of employment mainly the youths. Gambling is also important to the government because it is associated with generating revenue from tax, higher wages and payments to capital and providing opportunities for employment, and thus all this lead to enhanced economic growth (Walker, 2011). On the negative side of gambling is substance abuse among the youths, delay in school and alcohol and drug as well as increase in crimes (Winters, Stinchfield, et al,2002; Vitaro et al., 2001).

Gambling is thought to be one of the factors that greatly reduce labor productivity of youths in the employable age in developing countries (Reith, 2006). The main factors that affect gambling in the previous studies carried out include employment status, age, family status, education level. Odhiambo (2018) in his research in Kenya to assess the effect of gambling commercials on youth behavior found that undergraduates would gamble more than postgraduate. The review noted that few studies have been conducted in Kenya regarding the effects of gambling on the youth despite the fact that huge numbers of the youth involved and the attendant negative impacts on them (Koross ,2016; Odhiambo ,2018 & Njoroge ,2018). These studies failed to take into account the effects of gambling on the poor population most of whom live in the slums in many cities in Kenya. This is despite the fact that they form majority of the gambling proportion in the country. Therefore, there is need to have evidence that is empirical on the effect of gambling activities on low income population. Therefore, this research aims at contributing to the existing pool of knowledge on the effects of gambling on youth by investigating the effects of gambling on low income youth with

specific focus on Dandora which is a slum in Nairobi where low income youths form the majority.

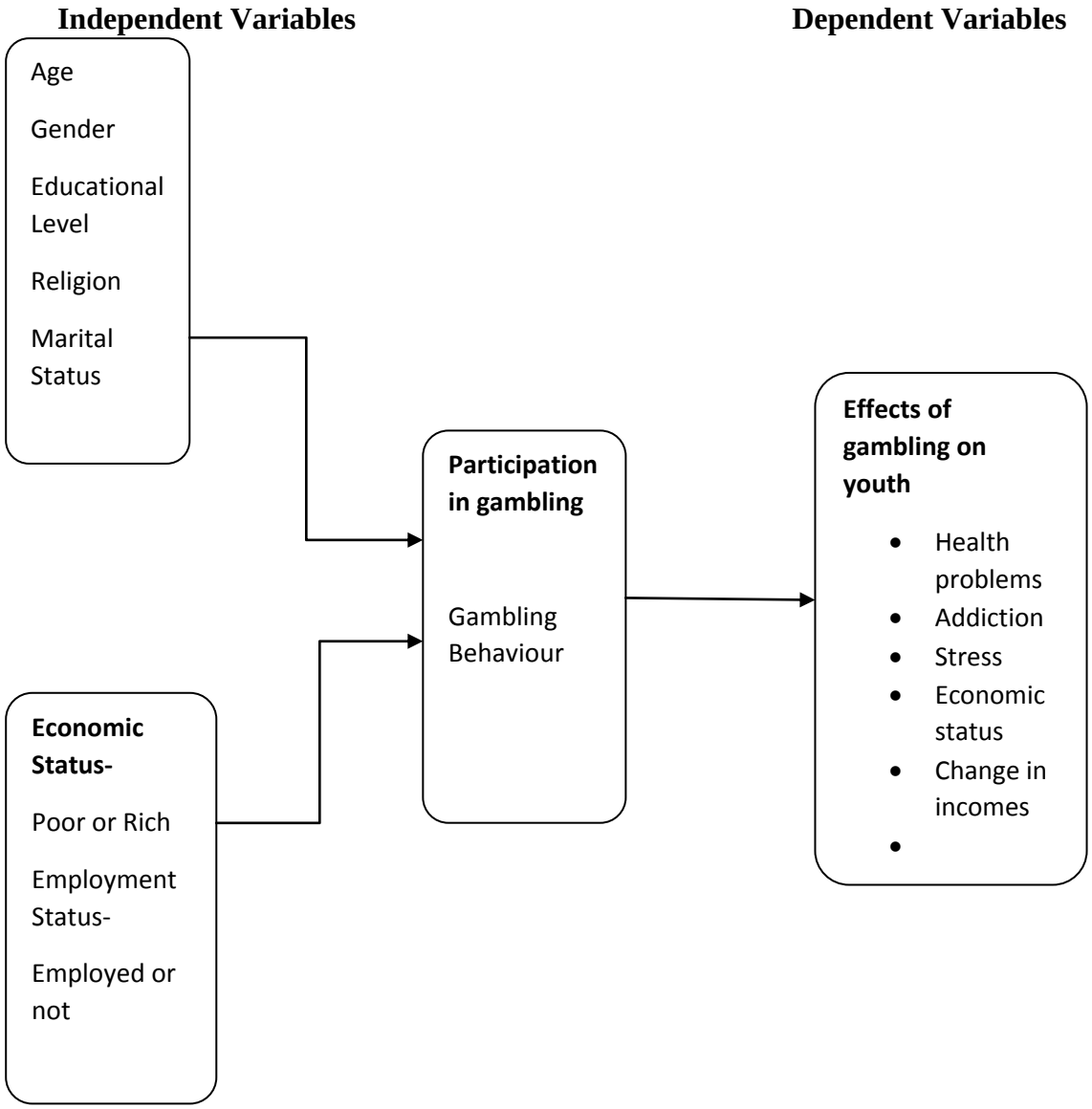
CHAPTER THREE

METHODOLOGY

3.1 Introduction

Herein the paper presents the methodology used in this study. It discusses the research design that was adopted, conceptual framework, theoretical model upon which the study is anchored, analytical model for estimation, definition, measurement of the variables, data sources and the diagnostic tests.

Conceptual Framework on Gambling Participation and its effects on youth



The above conceptual framework shows relationship between the independent and dependent variables in the study. The conceptual framework plays is important in derivation of the hypothesis tested in the study. In our case the study shows the independent or the explanatory variables which include the age, gender, education level, religion and marital status which are classified as social factors while the economic factors include the employment status and whether one is poor or rich. Participation in gambling is the dependent variable that we seek to find out determinants of gambling and effect on youth participation in gambling. The research sought to investigate the effect of gambling on youths of Dandora area specifically on their, health problems, addiction, stress, economic status and change in incomes.

3.2 Theoretical Model

This study adopts the traditional cumulative prospect theory by Kahneman and Tversky's (1979) to analyze the effect of gambling on low income youth in Kenya, specifically in Dandora. The theory stipulates that people usually assess the level of risk by the use of a value function that is defined by gains and losses. Consequently, the function is convex on losses, concave when there are gains and that it is kinked at the origin. This simply implies that individuals are more responsive to losses than gains. This concept is sometimes referred to as loss aversion.

The Prospect theory explains gambling in a more detailed manner since it captures most attributes of actual gambling behavior. To begin with, it determines that for a wide range of parameter values, a prospect theory player would be ready to take part in gambling even if the bets offered have an expected value of zero or negative. Another factor in this theory is that of the probability weighting feature that predicts a reasonable time inconsistency. This is because once the gambler or the gambling agent starts gambling, they always plan to pursue a particular game plan but later on after entering they think of switching to a different one. Therefore, the behaviour of a gambler depends on his knowledge about time inconsistency and his ability to make a commitment from the beginning to stick to the initial strategy.

To model the bet options, consider a gambling agent whose probability to gain, x, is *p* and probability to lose, y, is q. Assumption is that there are no other risks. The function is expressed as follows:

$$(x, p\ ; y, q) \quad \ldots 1$$

Where, $x \leq 0 \leq y$ or $y \leq 0 \leq x$, and where $p + q = 1$. Using the expected utility set-up, an individual with utility U assesses this gamble by generating the following function:

$$pU(W + x) + qU(W + y) \quad \ldots 2$$

Where W represents the Agent's current wealth. The player values the bet as follows:

$$\varphi(p)v(x) + \varphi(q)v(y) \quad \ldots 3$$

Where v (.) and φ (.) represents value function and the probability weighting function respectively.

The functions satisfy v (0) = 0, φ (0) = 0, and φ (1) = 1. As noted above, v (·) is concave only when there are gains; and convex when losses are likely to be experienced. Rationally, this implies that people tend to avoid risks over moderate gains and seek risks if losses are likely to occur. The theory further shows that the players do not apply objective probabilities when assessing the gamble, instead they use, transformed probabilities derived from objective probabilities via the probability weighting function φ (.). The Cumulative Prospect Theory applies the probability weighting function to the cumulative probability distribution, not to the probability density function. This warrants that cumulative prospect theory does not breach first-order stochastic dominance; hence it can be applied to gambles with more than two outcomes.

3.3 Econometric Model of Estimation

To examine the impact of gambling on low income individuals in Dandora, the study adopts the binary response model. The main assumption of the binary response model is that the individual is faced with two alternatives, and the choice between the two alternatives solely depends on certain factors (Robert & Daniel, 1998). For the case of binary response model, we have the logit and probit regression models. A model is deemed to be a probit model if the F statistic is expressed as the cumulative of a normal distribution function where as it is referred to as a logit model if F is the cumulative logistic distribution function. Both the normal and the logistic distributions yield symmetric shapes except that logistic distribution

have flatter tails as compared to normal. The estimation of this model is subjected to a Maximum Likelihood Estimation techniques. The general probit /logit model is represented as follows:

$$Y = X_i\beta + \varepsilon \; and \; y_i = 1 \; if \; Y > Z, y_i = 0 \; IF \; Y \leq z \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..4$$

Y is the dormant dependent variable that is continous, $\boldsymbol{X_i}$ is a vector of predictor $\boldsymbol{\beta}$ are the coefficients that are estimated in the model, $\boldsymbol{\varepsilon}$ is the error term while $\boldsymbol{y_i}$ is the probability of an individual participating in gambling or not.

On the basis that errors are assumed to have a standard normal distribution, *u ~ N (0,1)* with a probability function, the model will be explained through the transformation of *Xβ* into a probability. The following cumulative distribution function represents the probit model.

$$Pr\ (y = 1) \ = \emptyset(X\beta) \int_{-\infty}^{X\beta} \frac{1}{\sqrt{2\pi}} e^{-z^2/2}\, dz \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.5$$

And the log likelihood function is:

$$Ln = \left(\frac{Y}{X}, \beta\right) \prod_{t=1}^{N} \; Y\, log\, log\, \{\phi\ (X\beta)\} + (1 - Y)\{1 - \phi(X\beta)\}^i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.\ldots\ldots\ldots.6$$

The study will estimate marginal effect in order to interpret the model since it shows the changes in the likelihhood of observing or experiencing an event, in this an individual participating on gambling. Marginal effects is estimated as the mean of specific marginal effect. The Multiple regression model is in the form:

$$y_i = \alpha + \beta_i X_i + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..\ldots\ldots\ldots\ldots\ldots\ldots\ldots 7$$

The model of estimating the factors that affect rate of gambling is represented as follows:

$$Gambling = B_0 + B_1 age + B_2 Gender + B_3 Education + B_4\; Income\ Source + B_5\; Betting\ Frequency + B_6\; Impact_{Family} + B_7\; Impact_{Health} + B_8\; Impact_{Addiction} + B_9\; Risk + B_{10}\; Delivery\ type + B_{11}\; \text{Improved Income}\; \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.\ldots\ldots\ldots \ldots\ldots\ldots\ldots.8$$

The above binary model addresses the first objective on the factors that affect participation in gambling by the youths in Dandora. Findings were analyzed and presented in section 4.5 and 4.6 below. The second objective deals with the effect that

gambling activities has on the low income youths in Dandora such as addiction, involvement in drug and drug abuse, impact on health and impact on finances/income. Thirdly, the study sought to explain the prevalence of gambling and brings out the understanding of the proportion of the youths involved in gambling. To address these two objectives, the study uses descriptive approach in which the results are tabulated in the analysis of the youths' involvement in gambling and the effect of gambling on their behavior as presented in section 4.4.

3.4 Definition of variables and expected sign

Table 1: Definition of variables and expected sign

Variables	**Definition**	**Expected Sign**
Dependent Variable		
Gambling	This is the probability of an individual participating in gambling. It is measured as: 1 if an individual gambles 0 if otherwise	
Independent Variable		
Income Source	This is measured as 1 if Entrepreneur 2 if employed full time 0 if Currently Unemployed	*Positive*
Gender	1 if an individual is male and 0 otherwise	*Uncertain (-ve or +ve)*
Age	This is a categorical variable with categories measured as: 0 if 15- 19 years 1 if 20-24 years 2 if 25 – 29 years 3 if 30-35 years 4 if above 35 years	*Uncertain (-ve or +ve)*

Education	0 if no education 1 if primary education 2 if secondary education 3 if tertiary education	*Uncertain (-ve or +ve)*
Frequency of gambling	A continuous variable measured by the number of bets placed in a day by the individual	*Positive*
Betting Platforms	Measured as 1 if mobile platforms 0 if otherwise	*Positive*
Impact on Family	Measured as 1 if impact is positive 0 otherwise	*Positive*
Impact on Health	Measured as 1 if improved on health since start of betting 0 if otherwise	*Negative*
Addiction	Measured as 1 if individual can go a day without betting 0 if otherwise	*Positive*
Risk of Betting	Measured as 1 if a person knows the risks associated with betting 0 otherwise	*Negative*
Improved Income	This is measured as 1 if the person feels betting has improved income 0 if otherwise	*Positive*

3.5 Data Specification

The study used primary data gathered from sampled individuals in Dandora. Dandora was estimated to have a population of 110,164 (KNBS, 2006). The area has an estimated 6800 households (UNEP, 2007). Dandora was estimated to occupy an area of 4square kilometers and demographics of 27,541 persons per square kilometer. The area is situated East part of Nairobi city in Embakasi Division and is near Kasarani Division to the North. The area and its neighborhood i.e. Korogocho and Kariobangi locations are comprised of low income youth.

3.5.1 Target population

The study targeted 110,164 individuals consisting of 6800 households who reside in Dandora. The study targeted individuals aged between 15 years- 35 years, who are defined as the youth (African Union, 2006).

3.5.2 Sampling Design and Sample Size Calculation

The study adopted simple random sampling technique, where by each household was given an similar likelihoods of being selected into the sample (Sanda and Arthur, 2017). This sampling design was chosen based on its ease of use and accuracy in representation. Additionally, it is an efficient method given the time constraint and limited resources available for this study.

To determine the sample size, the study adopts Creative Research Systems formula shown here below as (9), (Creative Research Systems, 2012).

$$Sample\ Size = \frac{\frac{Z^2\ X\ P(1-P)}{e^2}}{1+\left(\frac{Z^2\ X\ P(1-P)}{e^2 N}\right)} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 9$$

The calculation to determine the sample size for this study assumed a confidence level of 95%. Where the Z-score (Z) used was 1.96, and margin of error (e), 0.05, the distribution (P) is 0.5, and the population size (N).

Given the target population size (N) of 110,164, the sample population is calculated as follows:

$$Sample\ Size = \frac{\frac{1.96^2\ X\ 0.5(1-0.5)}{0.05^2}}{1+\left(\frac{1.96^2\ X\ 0.5(1-0.5)}{0.05^2 X 110,164}\right)}$$

n= 384

Therefore, the study is based on a sample of 384 youths who participated in various forms of gambling in Dandora area. The study was limited to households with youths engaged in gambling.

3.5.3 Data collection

The primary data used in this study was collected using a semi-structured questionnaire where objectives of the study formed the basis. It had both pre-coded and open-ended questions. The researcher sought approval to conduct the study from the school of Economics, University of Nairobi. The letter was attached to each questionnaire and explained the research goals and guaranteed anonymity of the respondents, maximum confidentiality of data collected and implored the respondents to give candid answers.

The researcher engaged a research assistant to aid in the administration of the questionnaire owing to time constraints, he was contracted based on experience in data collection processes. The researcher, research assistant and his team all did the field work and met respondents in person. Questionnaires were then coded and responses entered in excel before clean-up and data analysis.

Data quality and reliability

Data quality refers to whether data collected is suitable for the purpose of the research and whether it appropriately measures the variables of the research. Assessment of data quality was done both at group & individual level. This was substantiated by looking at whether the data was consistent, correct, complete and credible (Moss & Litman, 2021). Reliability is the extent to which data we collected and data source can be relied on. Reliable data can be depended on, trusted, is authentic, genuine and reputable. Reliability is mainly measured by consistency (Pierce, 2007).

- To check the consistency of responses at group level diagnostic tests were carried out as discussed and analyzed in section 4.3.
- To check for correctness at individual level researcher validated that consistent responses were provided to similar items at the point of coding the questionnaires.
- Completeness of responses was done by confirming the key questions were responded to both at the point of collecting data and coding questionnaires.
- Respondent credibility and honesty follows belief that respondents responded in good faith. Results were compared to those of other previous studies that are closely related, including those mentioned in literature review section.

Data Collection Instruments

3.5.3.1 **Pilot Testing**

Cooper and Schindler (2014) notes that it is important to carry out a pilot study, which is a small scale research to collect similar data as would be collected at the future survey to test if the identified procedures will work as intended. The pilot test facilitates in identifying procedural flaws. According to Connelly (2008), a pilot study sample should be 10 per cent of the sample projected, which translates to 38 individuals. Pilot testing was done for this research before the actual data collection.

3.5.3.2 **Reliability of the Instruments**

The reliability of the instrument refers to the dependability of the tool used to measure a concept (Bryman, 2012) and is also known as internal consistency. This is the degree to which a tool for data collection consistently measures what it ought to. Following (Sekaran & Bougie, 2016)'s recommendation the study used Chronbach's Alpha to test how much the instruments could be relied upon. Only items with a Cronbach alpha score of higher than 0.7 which is an acceptable rule of thumb measure according to George and Mallery (2010) is acceptable. To do this, 10% of the sample participants participated in the pilot.

3.5.3.3 **Instrument Validity**

Validity refers to the degree to which a tool for data collection measures what it ought to. In most cases in data collection, errors usually arise from factors such as: inaccurate coding of data, ambiguous instructions to the respondents, interviewers and interviewees fatigue and bias. To address these problems, the questionnaire used simple words and short sentences which could easily be understood and comprehended. Data was also cleaned up at the point of coding the questionnaires.

3.6 Analysis of Data and Presentation

Data analysis is defined as the process of data evaluation using analytical and statistical tools. It includes the inspection, cleaning conversion, and modeling of data to discover useful information necessary in hypothesis testing and reaching conclusions, (Bryman & Bell, 2014). Data analysis for this thesis was done according to the constant comparative methods suggested by Bogdan & Biklen (1998). This implies that the formal analysis was started in early stages of the study i.e at data collection stage. The study uses multi-dimensional methods towards each factor, descriptive statistics, and regression statistics.

3.7 Estimation tests

3.7.1 Normality test

Normality is the assumption that the data under review distributes normally. Normality test was done using the Shapiro-Wilk test whereby decision applied rules that values below 0.05 indicate non-normality in distribution and values above 0.05 implies normal distribution.

3.7.2 Multicollinearity

According to Lauridsen and Mur (2006), multicollinearity is the consecutive inclusion of more variables that brings collinearity between the independent variables. This is explained also by Grewal *et al*. (2004), who said that high correlation between two or more predictor variables leads to multicollinearity. Estimations under multicollinearity can lead to biasness in the conclusions drawn from the results. Due to this, a multicollinearity test was carried out. Variance inflation factor (VIF) was used to test for the presence of multicollinearity. Values greater than 10 in the VIF show the presence of multicollinearity (Lin, 2008). In case where multicollinearity is detected, the highly collinear variables are dropped from the model

3.7.3 Heteroscedasticity

Heteroskedasticity is common in cross-sectional/survey data. It is represented by the non-constant variance characteristic of the error term. Its presence renders inference testing inapplicable. Breusch-Pagan- Godfery test was carried out to determine the presence of heteroscedasticity. If P value is less than 0.05, heteroscedasticity is deemed to be present since null hypothesis of homoscedasticity is rejected. If found to be there, robust standard error will be used (Gujarati, 2003).

CHAPTER FOUR

EMPIRICAL FINDINGS AND RESULTS DISCUSSION

4.1 Introduction

This chapter contains interpretation of data gathered as well as analysis and discussion of findings obtained from researching determinants and effects of youth gambling in Dandora. The chapter starts with the presentation of descriptive statistics, diagnostics tests followed by the models and concludes with the model results discussion.

4.2 Summary statistics

In this section, the data's summary statistics are discussed. Among other things, it indicates the type of variable, observations, mean, standard deviation, minimum, and maximum values. This information is outlined in Table 4.1. The mean shows averages scores for the various variables in this study while standard deviation indicates how much various variables deviate from their mean.

Table 4.1

Summary statistics of variables in the study

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Participation	384	.8727273	.3336576	0	1
Gender	384	.7681818	.4224739	0	1
Marital status	384	.6666667	.8764598	0	3
Religion	384	1.061927	.393417	0	2
Age	384	3.256236	1.579733	0	5
Education	384	2.148064	.7361753	0	3
Income source	384	2.89726	1.452825	0	5

Source: STATA Computation

Table 4.1 reveals that average participation in gambling was 0.8727273, with a standard deviation of 0.3336576 and that one either participated in it or not, as represented by 1 and 0. The mean for the gender variable was 0.7681818 and a standard deviation was 0.4224739. Age had the highest mean values of 3.256236 followed by income source which accounted for 2. 89726. This can be explained by the fact that there were more categories for these two variables hence a wider range of responses. They have standard deviations of 1.579733 and 1.452825 respectively. Marital status was found to be the variable with the least mean variable of 0.6666667 among the key variables included in the study.

The study findings also presented the extreme values of the variables i.e. maximum values showed the highest achievable values of the variable observations in the study. Values in the column labelled minimum showed the lowest achievable values of the variables. Most of them are zero because while coding the variables in different categories some were not applicable. Variables such as income source had up to five categories and thus the maximum values do not indicate the actual values but the various categories of the variables as per the questionnaire.

4.3 Diagnostic Tests

Diagnostic tests were carried out to ensure data quality, reliability and validity of data and model used.

4.3.1 Normality test

The study sought to check how the variables are distributed using the Shapiro-wilk test. The null hypothesis in Shapiro-wilk test postulates that the population is normally distributed. Suppose one gets an alpha value equal to 0.05, thus if p value< 0.05 null hypothesis will be rejected. When p value > 0.05 the variable is said to have a normal distribution.

Table 1

Variable	Obs	W	V	z	Prob>z
participat~n	440	0.97570	7.287	4.747	0.00000
gender	440	0.99206	2.381	2.073	0.01907
marital_st~s	441	0.92367	22.935	7.488	0.00000
religion	436	0.99690	0.922	-0.195	0.57714

age	441	0.92565	22.339	7.425	0.00000
education_~l	439	0.98646	4.053	3.344	0.00041
source_of_~e	438	0.98368	4.875	3.785	0.00008

From the results presented above most of the variables were found to be not normally distributed with the p value less than 0.05. These include participation in gambling, gender, marital status, age, education and source of incomes. Religion was the only variable that was normally distributed with a p value greater than 0.05. Variables with a normal distribution are symmetric around the mean which was category 1 in the questionnaire. This implies that being a Christian significantly reduced gambling behavior of youths in Dandora.

4.3.2 Correlation Analysis

To find the association between various variables in the study, researcher carried out a pairwise correlation analysis to find out if there was any relationship between the explanatory variables in the model. Results of the analysis are presented in table 2 below.

Table 2

Pairwise correlation matrix

Variables	Gender	Marital status	Religion	Age	Education	Income source
Gender	1.0000					
Marital status	0.0291	1.0000				
Religion	-0.0401	0.0010	1.0000			
Age	-0.0141	0.0271	-0.0086	1.0000		
Education	0.0626	0.0228	0.0084	0.0780	1.0000	
Income Source	0.0322	0.0616	-0.0096	0.0613	-0.0973	1.0000

Source: STATA Computation

Table 4.2 shows correlation coefficients indicating that the model's independent variables had weak linear correlation since they were all close to 0. According to Zach (2020) linear

correlation is absent when the value is 0, +1 signifies perfect positive correlation while -1 is a signal for perfect negative correlation. The value of 1 which is diagonal in the matrix is the coeffecient of the specific variable against itself. 0.0291 is the coefficient of relationship between a participant's gender and marital status. 0.0010 is the coefficient of relationship between a participant's religion and marital status.

Therefore, from the results in table 2 above multicollinearity did not pose a major challenge in this study. As a result, the researcher proceeded to run the regression model with all independent variables.

4.3.3 Variance Inflation Factor Test for Multicollinearity

This study checked for multicollinearity using the Variance Inflation Factor (VIF) technique to determine whether independent variables were related to one another. Multicollinearity is present when the VIF of each independent variable is more than ten (Kennedy, 1992). The VIF test results are listed in the table 3 below:

Table 3

Variance Inflation Factor

Variable	VIF	1/VIF
Income source	1.02	0.979756
Education	1.02	0.977705
Religion	1.00	0.998124
Marital status	1.02	0.984964
Gender	1.02	0.982557
Age	1.01	0.988197
Mean VIF	1.02	

Source: STATA Computation

The VIF values for each explanatory component, as well as the mean VIF value, were all lower than the usual VIF value of 10. These results revealed a modest relationship between the independent variables. The mean VIF of 1.02 was less than 10 and thus the model did not

suffer from multicollinearity. Consequently, multicollinearity was not a major concern in our research.

4.3.4 Heteroscedasticity test

To determine whether the regression results were the best, it was necessary to carry out the heteroscedasticity test. Heteroscedasticity occurs when variances of the error factors are heteroscedastic, the estimated coefficients become greatly inflated, which is misleading and makes it difficult to draw meaningful conclusions (Gujarati, 2004). To assess if heteroscedasticity was present Breusch-Pagan test (Breusch and Pagan, 1979) was done. The results are summarized in the table below. However, this is not an issue when it comes to the binary models and thus it does not have significant effect on the model results.

Table 4

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity

Calculated chi2	**11.42**
Probability > chi2	0.0007

Ho: Constant variance

Source: STATA Computation

The chi-square probability is below the traditional 5 percent significance level, as indicated in table 4. As a result, the null hypothesis of constant variance was rejected, and researcher concluded that heteroscedasticity was present in this model.

4.4 Effect of Gambling

4.4.1 Financial Effect

The study sought to find out whether youths in Dandora experienced any effects on their financial status as a result of gambling with income from their pockets.

Table 5

Effect on Financial effect	**Freq.**	**Percentage**	**Cumulative**
Yes	240	61.86	61

No	148	38.14	100

The findings showed that majority of the gamblers experience a reduction in their incomes with 61.86 percent agreeing that gambling affected their incomes negatively compared to the 38.14 percent who thought it did not affect their incomes. Therefore, gambling affects the financial status of the gamblers as they invest their incomes on gambling activities. In his paper, Zellner's (1962) established that gaming expenditures increased significantly by 10.4 percent for the first stimulus while second stimulus increased the gaming expenditures by 15.9 percent when the stimulus was increased by 26.3 percent for 4 months. Similarly, Brown et. al. (2008) provided evidence that using credit had a positive effect on gambling while there was a strong positive correlation between gambling and the use of credit at the household level. There was a strong relationship between the two in lower income households.

4.4.2 Health Effect

The study also investigated the effect of gambling on their health. Results were as tabulated in the table below:

Table 6

Effect on Health	**Freq.**	**Percentage**	**Cumulative**
Yes	181	46.77	46.47
No	206	53.23	100
Extent of the Effect			
	Freq.	**Percentage**	**Cumulative**
Small Extent	46	20.91	20.91
Moderate	95	43.18	64.09
Large Extent	79	35.91	100

The study findings showed that 53.23 percent of the gamblers did not feel that gambling affects their health conditions. The other 46.77 percent agreed that gambling affected their health condition negatively. However, the extent of the effect on health was different with 43.18 precent indicating that the effect was moderate while 35.91 percent agreed the effect on their health was to a large extent. The rest who accounted for 20.91 percent agreed that the extent was small. The study by Dyall (2007) noted that gambling caused challenges such as poverty, anger, infightings, stress, lack of food and rent in Maori area in where the majority of the residents were the poor.

4.4.3 Gambling and Drug abuse

This study also sought to find out whether gambling caused individuals to engage in drug abuse. The results were tabulated below:

Table 7

Effect on Drug abuse	**Freq.**	**Percentage**	**Cumulative**
Yes	188	74.31	74
No	65	25.69	100
Extent of the Effect			
	Freq.	**Percentage**	**Cumulative**
Small Extent	34	35.05	35.05
Moderate	27	27.84	64.09
Large Extent	36	37.11	100

Majority of the respondents noted that gambling contributed to their use of drugs. They accounted for 74.31percent while the 25.69 percent noted that their engagement in drug abuse was not due to gambling activities. For those who felt that gambling had caused their drug abuse, 37.11 percent noted that it was to a large extent, 27.84 percent was to a moderate extent while 35.05 percent was to a small extent. Similarly, Barnes et al. (1999) showed gambling was prevalent among the youths with evidence that gambling and alcohol consumption was associated with smoking, illegal drug use as well as delinquency.

4.5 Model Results

Table 8: Probit Model Results

VARIABLES	Probit Model Model 2
Gender	.5141982** (0.1747157)
Marital Status	-.1716318 ** (0.0864473)
Religion	-.507383** (.1958898)
Age	-.0280057 (.0555614)
Education Level	-.0740724 (.1074868)
Income Source	.1123361** (.0541012)
Constant	0.414897*** (.413828)
Number of obs	484
LR chi2(6)	25.58
Prob > chi2	0.0003
Pseudo R2	0.0787
Log likelihood	-149.83892

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

To address the objectives of the study, a probit model was carried out with primary school enrollment being the binary dependent variable against the independent variables. Results are presented in table 8 above. Since the output of the probit model are odd-ratios which cannot be interpreted in terms of magnitude, this study carried out the marginal effects test which shows how much probability changes when there is a unit change in predictor or independent variable. For continuous variables this change represented is instantaneous since a unit may

be very small. For this case of binary variables, the change is from 0 to other categories indicated in the questionnaire.

4.6 Marginal Effect Results

Table 9: Marginal Effect Results for Probit Model

	Probit Model
VARIABLES	**Model 2**
Gender	.1127692**
	(.04363)
Marital Status	-.0318976 **
	(.01599)
Religion	-.0942967**
	(.03613)
Age	-.0052048
	(.01031)
Education Level	-.0137663
	(.01996)
Income Source	
	.0208776**
	(.00995)

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The research established that there was a positive correlation between gender and participation in gambling. Being a man significantly increased the probability of participating in gambling by 0.1127692 compared to being a female. Gender was positive, but statistically insignificant, at a 0.05 significance level. This is also the case in real-life, more men usually participate in gambling compared to women. Ahaibwe et al. (2016) noted that the key factors that were found to affect participation in gambling included: age, income, employment status and sex

The marital status has a negative effect on their participation in gambling. Being single reduced the probability of participation in gambling by 0.0318976 percent when all other factors were maintained constant. This effect was observed as significant at a 5 percent level of significance. This is contrary to the prior expectation that the unmarried people are supposedly the ones who engage in gambling activities compared to those in marriage. Further, Edgerton (2014) showed that the severe problem of gambling and the rate at which it changed depended on factors such as sex, age of the participants, gambling experience, alcohol consumption, drug dependence, anxiety, social support perception,

The findings of this study revealed that religion had a notable negative effect on the gambling behavior of youths in Dandora area. Being a Christian significantly reduced the probability of participation in gambling by 0.0942967 at 5 percent level of significance compared to someone who belonged no or other religions. The reason is that the spirituality of people plays a major role when it comes to their participation in gambling due to the perceived teachings administered in churches or mosques.

A relative change in age was found to play an insignificant role on the participation on the gambling. A unit change in age was found to reduce the probability of participation in gambling by 0.0052048 but the effect was found to be insignificant at 5 percent level of significance. Therefore, age was not a key factor in the determination of the gambling participation. The findings by Moodie and Fannigan (2006) in their endeavors to find out the means of gambling among the youths, they noted that fruit machines in all the groups factored in this study which consisted of 2,043 youngsters aged between 11-16 years.

Education was found to play an insignificant role on the participation on gambling in Dandora. Having education from primary to tertiary level reduced the probability of participation in gambling by 0.0137663 relative to having no education but the effect is not significant. Thus, education does not have much to do with the gambling behaviour of youths in Dandora area. The study by Auger et al. (2010) showed how impulsivity led to a rise in risk of gambling for those who did not possess university degree as well as those living in poor dwellings in Canada.

The study investigated the role of income sources on participation on gambling by the Dandora youths. The findings indicated that having income sources such as entrepreneurship, full time employment, temporary employment, and starting off a new business significantly

increase the probability of employment of Dandora youths by 0.0208776 compared to those who were currently a studying. Therefore, there was a correlation between income sources and gambling as it requires some level of commitment in terms of the incomes. Koross (2016) concluded that 70 percent of the respondents indicated that money was the biggest motivator, while the rest did it out of boredom or just for fun. Further, 68 percent of those who came from low-income families and were not getting support from parents relied on winnings from gambling for their leisure and daily upkeep. Lussier et al. (2014) noted that antisocial behavior was one of the major contributors to problem gambling closely followed by environmental/neighborhood factors and peer influence.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND POLICY IMPLICATION

5.1 Introduction

This chapter consists of a summary of findings from the study, suggestions that policy makers could find useful, and proposes areas that need more research. All these are based on the findings of the study

5.2 Summary and Conclusion

The first objective of this study was to find out factors that affected gambling in Dandora area using the primary data collected using a questionnaire. Using the probit model and marginal effects, the study established that factors such as Gender and income sources increased the probability of participation in gambling. Other factors such as Marital Status, Religion, Age and Education Level reduced the probability of the participation in gambling by Dandora youths. The factors that had significant effects were marital Status and religion while age and education level did not have any significant effects on the probability of gambling.

Secondly the study sought to establish the effect of gambling on youths of Dandora. These effects ranged from finance, health to drug abuse. The findings showed that majority of the gamblers experience a reduction in their incomes with 61.86 percent agreeing that gambling affected their incomes negatively compared to the 38.14 The study findings showed that majority of the gamblers did not agree that gambling affects their health conditions accounting for 53.23 percent. The rest of the 46.77 percent agreed that gambling affected their health condition negatively Majority of the respondents noted that gambling contributed to their engagement in drug abuse accounting for 74.31 percent while the 25.69 percent noted that their engagement in drug abuse was not due to gambling activities

Finally, the study explored the prevalence of gambling among low-income youth. The study noted that the betting behavior was more prevalent with 94.29 percent indicating that they would bet 0-6 times in a week. That was the indication that the gambling behaviour was a key activity for the youths who formed the response to this study. As such this is a red flag on the increased level of the gambling behavior in this area which is considered to be a low-income area in the city.

5.3 Policy Implication

One of the key findings in this study was that more men engage in betting behaviour compared to the women. This is an indication that men seemed to engage in this due to lack of employment or constructive activities to undertake. This study proposes proper measures by the government to create employment for the majority of the jobless. This will help to curtail their gambling behaviour.

Religion seemed to reduce the probability of one engaging in gambling within the region. Given this affirmation, the study recommends that government should involve the religious communities in addressing the menace of gambling behaviour that is associated with alcoholism, financial loss and addiction which causes other social problems such as crime.

As a way of reducing participation in gambling youths can be encouraged to get married because it is deemed to make people and especially the youths more responsible in a number of ways due to attached family duties.

5.4 Areas for further study

This study looked into the factors that influence participation in gambling behaviour and the effect on the low-income youths. Ideally, gambling is not just for the poor but seemingly a common behaviour even to the youth. This study recommends for a more inclusive study on that includes both low incomes and high-income families.

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Appendix A: Respondent's Questionnaire

This questionnaire seeks to collect data for a research study on the effect of gambling on the low income youths in Kenya specifically in Dandora. Participation in this study is voluntary and confidentiality of every respondent will be maintained. You are kindly requested to participate in this study by completing the questions asked below. Your contribution will be highly appreciated. A letter will accompany each questionnaire explaining the research goals and guaranteeing maximum confidentiality of the data collected and anonymity of the respondents, imploring the respondents to give candid answers.

Instructions

Please answer each of the following questions as accurately as you can.

For those in which multiple responses are provided, you need only to tick the appropriate response(s). For the open-ended questions, please write your answer in the blank space provided.

SECTION A: Respondent's personal and Socio-economic profile

1. What is your Gender?
   - ☐ Female
   - ☐ Male
2. What is your marital status?
   - ☐ Married
   - ☐ Never Married
   - ☐ Divorced /Separated
3. What is your religion?
   - ☐ Christian
   - ☐ Muslim
   - ☐ Other
4. How old are you?
   - ☐ Below 15 years
   - ☐ 15 - 19 Years
   - ☐ 20 – 24 Years
   - ☐ 25 – 29 Years
   - ☐ 30- 35 Years
   - ☐ Above 35 Years

5. What is your Education Level?
   - ☐ Primary School Level
   - ☐ Secondary School Level
   - ☐ College/Tertiary Level
   - ☐ No education
6. What is your source of income?
   - ☐ Entrepreneur
   - ☐ Employed full time
   - ☐ Temporary Employment
   - ☐ Currently Unemployed
   - ☐ Starting off a new business
   - ☐ Currently a student
7. Have you ever participated in gambling/betting?
   - ☐ Yes
   - ☐ No
8. If yes, how were you introduced you to betting?
   - ☐ Friend
   - ☐ Workmate
   - ☐ Family member
   - ☐ Other (please specify)
9. If yes, how do you place your bet?
   - ☐ Using mobile phone (SMS or USSD)
   - ☐ On website
   - ☐ Other (Please Specify)
10. How frequently do you place a bet in a day? (prompt. 2 times, 3times..etc)
    - ☐ Number
11. How many times have you won on the placed bet?
    - ☐ Number

SECTION B: Effect of gambling on youth behavior

12. Since you started betting, has your financial status improved?
    - ☐ Yes
    - ☐ No
13. Have you experienced any change in your health since you started betting?

☐ Yes

☐ No

14. If yes, has it been positive or negative?

☐ Positive

☐ Negative

15. Whether the effect was positive or negative to what extent would you explain the effect

☐ Smaller extent

☐ Moderately

☐ Larger extent

SECTION C: Risk of gambling and Addiction

16. How many days can you go without betting?

☐ One day

☐ More than a day

17. You place a bet on the basis of informed decisions

☐ Yes

☐ No

18. Do you think betting is a risky initiative?

☐ Yes

☐ No

19. If yes, would you continue betting?

☐ Yes

☐ No

20. If yes, please explain why you would continue betting?

SECTION D: Risk of gambling and Drug Abuse

21. Before you started gambling were you engaged in any form of drug abuse?

☐ Yes

☐ No

22. If yes would you say that your gambling has increased your drug abuse behavior?

☐ Yes

☐ No

23. To what extent would you say your drug abuse has increased?

☐ Smaller extent

☐ Moderately

☐ Larger extent

24. If no would you say that your gambling made you engage in drug abuse behavior?

☐ Yes

☐ No

25. If yes would you say that your gambling has increased your drug abuse behavior?

☐ Yes

☐ No

26. To what extent would you say gambling has contributed to your involvement in drug abuse?

☐ Smaller extent

☐ Moderately

☐ Larger extent