RELATIONSHIP BETWEEN GAMBLING ADDICTION AND VIOLENT BEHAVIOUR AMONG UNIVERSITY STUDENTS IN LANG'ATA CONSTITUENCY

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15060Y

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DECLARATION

I, the undersigned, declare that this thesis is a product of my own work and is not the result of anything done in collaboration. It has not been previously presented to any other institution. All sources have been appropriately cited and duly acknowledged in full.

I agree that this thesis may be available for reference and photocopying at the discretion of the University.

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DEDICATION

This Thesis is dedicated to my immediate family members, friends and relatives for their support and motivation throughout my study period. The work is also dedicated to all gambling addicts who will find guidance and direction by reading this work.

ACKNOWLEDGEMENT

This Thesis is dedicated to my dear mum and late dad for being the best example to me. To my siblings who take pride, and other family members who have been supportive all through my studies, I acknowledge all of you. I thank my supervisors, Dr. Cosmas Kagwe and Dr. Hubert Pinto for their meticulous feedback, advice and guidance in developing this document. I thank my lecturers for providing challenging coursework instructions. I also thank my colleagues for inspiration and unwavering support during my studies. God bless you all.

ABSTRACT

Gambling addiction is unhealthy betting that could result in problematic behaviour and experience of serious multiple problems. Historically, betting is inherently an acceptable recreational activity across human societies. Similarly, betting has become a way of life and especially among university students. The study examined the relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency, Nairobi County. The target population was 20,700 university students. The sample size was 393 students. Skinner's Theory of Learning was used in understanding the relationship between types of gambling, prevalence of gambling, risk factors of gambling, coping strategies and violent behaviour among university students. Correlational research design was used. Stratified random sampling was used in identifying the sample size. Descriptive statistics was used in analysing descriptive data. Pearson's Correlation Coefficients, ANOVA and Regression Analysis were used in inferring results of the study. Pre-testing attained over 0.8 coefficient alphas. The response rate was 99.4%. Explanatory variables explained 73.7% of variation in violent behaviour among university students while 26.3% of variation in violence could be attributed to other factors outside the scope of this study. All independent variables have statistically significant relationship with the dependent variable hence they were retained in the final model. However, there was no significant relationship between gambling addiction and violent behaviour among university students. To investigate causality of betting addiction and violent behaviour among students, experimental design may be approapriate in future studies. Future studies may consider triangulating numerical and non-numerical data in investigating the relationship between betting addiction and violent behaviour among university students. Insufficient betting infrastructure was abetting betting in learning institutions hence the need to enact policies that promote healthy betting practices.

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ABBREVIATIONS OR ACRONYMS

ANOVA	Analysis of Variance
CBRNG	A Computer-Based Random Number Generator
COS	Coping Strategies
CUEA	Catholic University of Eastern Africa
CUK	Co-operative University of Kenya
DIA	Department of Internal Affairs
EGM	Electronic Gambling Machines
HR	Human Resources
JKUAT	Jomo Kenyatta University of Agriculture & Technology
KNLS	Kenya National Library Services
MMU	Multimedia University
RFG	Risk Factor of Gambling
SPSS	Statistical Package for Social Sciences
TOG	Types of Gambling
TUC	Tangaza University College
TVET	Technical and Vocational Education and Training
TUCREC	Tangaza University College Research Ethics Committee
USA	United States of America
VB	Violent Behaviour

OPERATIONAL DEFINITION OF TERMS

Betting: The act of placing money or other valuable (s) for results of an outcome based of a chance prediction (Weinberger et al., 2015). In this study, the term betting is defined as risking something of value for the possibility of a gain with uncertain results. Further, this term was used interchangeably with the term gambling.

Demographics: These are the particular features of a population (Macmillan English Dictionary, 2007). In the proposed study, the term is defined as characteristics of age, gender and levels of education of the students in the four the four selected institutions of higher education in Lang'ata Constituency, Nairobi County.

Gambling: Is the act of playing a game or taking a risky action for money or a desired outcome like a prize (James, O'Malley & Tunney, 2017). In this study, the term gambling is defined to mean placing a specific amount of money which is either to be won or lost depending on the results of the predicted game or event.

Gambling Addiction: Is unhealthy betting that could result in problematic behaviour and experience of serious social, financial, legal, emotional and psychological problems (Roberts et al., 2016). In this study, gambling is defined as an uncontrollable impulse to immerse oneself in any form of a betting activity**.**

Types of Gambling: A range of different forms of gambling activities (Renzitti et al., 2016).In this study, the term is defined as involvement in home betting, casinos, lottery, online football betting and other sports betting.

University: An institution at the highest level of education where one can study for a degree or do research (Oxford Dictionary, 2011). In this study, the term is defined to mean

institutions of higher learning where students are in an environment which is less controlled by their parents, guardians or even the teachers.

University Students: Those undertaking various disciplines in different institutions of higher learning (Rasanen et al., 2015). The term refers to young people undertaking their academic studies in any of the four selected universities in Lang'ata Constituency in Nairobi County, Kenya.

Violent Behaviour: An extreme expression of hostility with the intent to threaten, attempt or inflict harm on people (Brook et al., 2011). In this study, the term was used to mean increased propensity to engage in physical fights, tendency to carry weapons, homicides and suicides associated with gambling outcomes among university students.

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

This chapter addresses the background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, hypotheses, significance of the study, scope or delimitations of the study and assumptions of the study.

Historically, gambling has always been at the centre of human existence (Schwartz, 2007). According to Schwartz, the epic story of gambling is traced back from Pre-historic times, progresses through casting of lots depicted in religious writings to Greek and Roman civilizations, through the Middle Ages, and later the Chinese, the British Empire and the American colonies spread betting to the rest of the world. When growing up, gambling amongst the village young men was an acceptable way of recreation and leisure. For example, when young men went herding, they often involved themselves in playing of some games and whoever won, pocketed all the coins that had been placed as the bet. Despite the fact that the coins won by these young men in such betting games were, in most times, a few Kenya shilling coins, many of the boys were so obsessed with the games that they preferred to trick their parents into permitting them to join the rest of the boys in such gambling games. It is apparent that fascination with the phenomenon of betting has been at the core of human experience. For example, when parents purchase charity sweepstake cards, lottery tickets and sports betting cards for themselves and their children, they are inadvertently initiating them into the charm of betting. The excitement and addiction in gambling could therefore be as old as the human society.

James, O'Malley and Tunney (2017) described gambling as the act of playing a game or taking a risky action for money or a desired outcome like a prize. An earlier study by

Whelan, Steenbergh and Meyers (2007) defines gambling as the act of placing a valuable item or money on an event hoping to gain more value, where winning is mostly based on chance. These authors underscore the importance of money, property and taking of risk with an aim of winning. When gambling is done in excess, its consequences might be far out-reaching.

Studies have shown that young people are predisposed to involvement in gambling and problems emanating from excessive, compulsive or addictive gambling. According to Kam, Wong, Tong, Cheong and Chan (2017), university students are amongst the most susceptible group to problems associated with excessive gambling. In general, most of the recent studies have found that 6-8% of young people worldwide have serious gambling problems (Kam et al., 2017; Moore et. al., 2013; Volberg, Gupta, Griffiths, Olason & Delfabbro, 2010). However, in a study by Koross (2016), it was found that the number of university students in Kenya participating in gambling was higher than 78%. The results indicated that the estimated number of young people participating in gambling in Kenya was far much higher than the international rating of 6-8% hence the need to focus on gambling addiction among university students in Lang'ata constituency, Nairobi, Kenya.

In a study of 8,500 Secondary School students in New Zealand, approximately one quarter (24.2%) of the students had gambled in the previous year, and 4.8% were found to have had two or more indicators of unhealthy gambling - poor mental health, depression, suicides, crime, delinquency, truancy, poor academic performance and so forth (Rossen et al. 2015). Furthermore, unhealthy or problem gambling was also found to be associated with four major factors: more accepting attitudes towards gambling, gambling via machines or casinos, being worried about or trying to reduce or cease gambling, and having attempted suicide. Rasanen, Lintonen, Raisamo, Rimpela and Konu (2015) reiterate that severe general violence, severe dating violence and carrying a weapon were significant correlates of

gambling frequency among adolescents in New Zealand. Moreover, Slavin et al. (2013) noted that risk and problem gambling were associated with physical fights and carrying of weapons amongst school students. Although such studies deal with Secondary School students or adolescents, this current study drew its sample size from university students in four selected institutions of higher education in Lang'ata constituency, Nairobi County, Kenya.

In a different study of 999 students in Macau College and University in China, six hundred and twenty nine (629) women and three hundred and seventy (370) men aged between 17-25 years, the respondents indicated that they gamble for entertainment (37.5%), peer influence (22.3%), affordability due to acceptance of small stakes (17.6%), perceiving gambling activities as a challenge (17.0%) and killing time recorded 5.1% (Kam et al., 2017). In addition, the forms of gambling preferred included: mah-jong (38.1%), soccer betting (25.4%), Mark Six lottery (22.9%), card games (17.3%), stocks (9.0%), land-based casino gambling (8.0%), slots (5.0%) and online casino games (1.2%). Moreover, on the question of gambling frequency, 42.7% gambled once a month, 20.8% gambled 2-3 times a month, 18.8% gambled between 1-2 times a week, 12.5% gambled once a day, 4.2% gambled 3-4 times a week, and 1% gambled 5-6 times a week. The study had recorded a gambling participation rate of 32.3%, which is way far below the rates of 40-50% found in the previous studies (Kam et al., 2017). The study was carried out amongst university-college students, this current study focused on university students in Lang'ata constituency in Nairobi, Kenya.

In a survey of three thousand and eight hundred and seventy nine (3,879) on problem gambling among young people in Sub-Saharan Africa, Kenya reported the highest number of youth (76%) who had previously gambled, Uganda followed with 57% while Ghana had the lowest number at 42% (Ssewanyana & Bitanihirwe, 2018). In another study on gambling in South Africa, those who lived in townships were found to participate in gambling activities perceived to be fairer as opposed to lotteries and casinos which were perceived to be rigged

and unfair (Sewanyana & Bitanihirwe, 2018). The study observed that young people who indulged themselves in gambling often performed poorly in studies, lost school fees in gambling related activities, and often engaged in risky behaviour. These findings were also reiterated in Koross (2016) who noted that a student at Kabianga University in Kenya committed suicide after losing a bet and many other students had dropped out of college after losing their school fee money on bets. Although the study focused on the problem gambling among young people in Sub-Saharan, the current study focused on university students in Lang'ata constituency in Nairobi, Kenya.

In a study of one hundred (100) students from Kisii University, Eldoret Campus on effects of betting on Kenyan University Students, the number of students participating in gambling was found to be more than 78% (Koross, 2016). Barnes, Welte, Hoffman and Tidwell (2010) found that gambling had become a popular activity among college students, with an estimated 75% of college students reported to be involved in gambling. The finding by Koross was the highest number of students in colleges and universities participating in gambling in Kenya that has ever been recorded. No wonder Koross was stewarded to observe that Kenya had become a betting nation.

Furthermore, the findings by Koross indicated that university students were spread across the gamblers' spectrum. The study also found that money was the biggest motivator of gambling (70%), followed by enjoyment (15%), boredom (10%), and those who indicated all these factors combined were 5%. It was also established that 26% of the respondents had, at one point or another, contemplated suicide as a result of indulgence in the game or activity of gambling. The findings are reiterated in a study by Abbott (2017) which found that people with repeated gambling behaviour struggle to control their impulse to gamble because often could have had gotten huge debts due to excessive gambling hence finding themselves in situations where they could only lie and commit crimes to get money to settle their debts. In

spite of these studies exploring the problem of gambling amongst university students, this current study casted the net further afield to focus on the relationship between gambling addiction and violent behaviour among students from four selected universities in Lang'ata constituency in Nairobi, Kenya.

1.2 Statement of the Problem

A study by Atkinson, Sharp, Schmitz and Yaroslavsky (2012) found that over 60% of students had played scratch cards, lottery and casino games. Further studies have indicated that gambling addition is common to students in colleges and universities (Kam et al., 2017; Koross, 2016). When gambling is done in excessive, it might have far-reaching consequences like loss of money intended for tuition, low grades as a result of skipping classes and sleep deprivation among others. Damaged relationships and poor health, financial bankruptcy, homicides, suicides, carrying of weapons and increased propensity to physical fights are, but a few, adverse effects of excessive or problem gambling (Abbot, 2017; Kam et al., 2017; Koross, 2016; Roberts et al., 2016; Rossen et. al., 2015).

As seen in the background, university students are studying at a time when betting has become a widespread phenomenon in the world. Despite existence of such studies, their focus has only been on school children, adolescents, and young people. There is a knowledge gap in such studies as they do not address the problem of gambling and violent behaviour among university students, specifically in Lang'ata constituency in Nairobi County, Kenya. This is the gap addressed by the present study.

1.3 Purpose of the Study

The purpose of this study was to look at the relationship between gambling addiction and violent behaviour among university students in Kenya.

1.4 Objectives of the Study

The current study was guided by the general objective and specific objectives outlined here below:

1.4.1 General Objective

To determine the relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency

1.4.2 Specific Objectives

This current study was guided by the following objectives:

i. To investigate the different types of gambling which university students in Lang'ata constituency are involved in.
ii. To investigate the prevalence of gambling among university students who gamble in Lang'ata Constituency.
iii. To determine the coping strategies used in reducing gambling addiction among university students in Lang'ata Constituency.
iv. To explore the risk factors of gambling among university students in Lang'ata Constituency.
v. To investigate the prevalence of violent behaviour among university students who gamble in Lang'ata Constituency.
vi. To establish the relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency.

1.5 Research Questions

This current study answered the following questions:

i. What are the different types of gambling which university students in Lang'ata constituency are involved in?

ii. What is the prevalence of gambling among university students who gamble in Lang'ata Constituency?

iii. What are the coping strategies used in reducing gambling addiction among university students in Lang'ata Constituency?

iv. What are the risk factors of gambling among university students in Lang'ata Constituency?

v. What is the prevalence of violent behaviour among university students who gamble in Lang'ata Constituency?

vi. What is the relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency?

1.6 Hypothesis

The current study was guided by the below null hypothesis:

H_0: There is no relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency.

1.7 Significance of the Study

The findings of the study provided the researchers with relevant information on the problem of gambling addiction among university students in Kenya. Such findings could help scholars and researchers to develop the existing literature and knowledge related to the problem of gambling among university students in Kenya.

The current study came up with knowledge for counsellors and therapists that may be used in improving the existing theories and techniques of counselling. Such information

could help these practitioners to improve on counselling of university students who are facing the problem of gambling.

The findings of this study provided crucial information to those in management of universities in designing programmes that could help students to avoid getting into gambling traps. The findings of the study may also help those already in gambling avoid violent behaviours associated with the gambling behaviour.

The findings of the study could help parents, guardians and significant others to decipher the signals of gambling problem amongst the young people, in their care, studying in colleges and universities. As well, the findings of the study could help parents, guardians and significant others to appreciate that gambling activity can adversely change behaviour of the young people under their care. The study will also bring out the association between parental or guardian history of gambling and the risk of gambling addiction.

The findings of the study could also help the policy makers with the necessary data for formulating guidelines that exhaustively address the problem of gambling in Kenya. The findings of the study could help policy makers to develop policies on gambling that provides the way forward for the gambling gaming culture in Kenya.

Above all, the findings of the study could help university administration and university students' bodies to develop policies or services regarding betting among university students.

1.8 Scope and/Delimitations of the Study

The study focused on the relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency. The results of this study are limited to the 20,700 university students studying in the four universities of study: Catholic University of Eastern Africa, Jomo Kenyatta University of Agriculture and Technology,

Multimedia University, and Cooperative University. *(See Table 3.1, page 30).* Therefore, the knowledge gained from students in the targeted four universities in Lang'ata constituency may be extrapolated to other university students in Nairobi County and feasibly those in the surrounding areas.

1.9 Assumptions

The study made the assumption that there were human resource managers or administrators, in each of the selected universities, to give approval before proceeding with the data collection process. Again, the study was also be guided by the assumption that the students who provided information for this study gave honest and accurate information for analysis.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related to gambling addiction and violent behaviour among university students in Lang'ata Constituency in Nairobi County, Kenya. Theoretical review, empirical review, research gaps and the conceptual framework were addressed in this chapter.

2.2 Theoretical Literature Review

The section reviews theory relevant to the study. This study was guided by Skinner's Theory of Learning or Operant Conditioning.

2.2.1 Skinner's Theory of Learning/Operant Conditioning

Burrhus Frederic Skinner developed the theory of learning or operant/instrumental conditioning. According to Skinner, operant or instrumental conditioning occurs when individuals learn to perform behaviours which yield positive outcomes while avoiding those which produce negative outcomes. Behaviour therefore could be reinforced or punished. If a particular behaviour is reinforced then it is more or less likely to occur in future while if it is punished, then it will likely come to halt (McLeod, 2018). Skinner demonstrated the effects of operant conditioning by teaching animals to dance, pigeons to play pin-pong, elephants to draw, whales to Somerset and so forth, by rewarding them after displaying the desired behaviour.

In operant conditioning, according to Skinner, a stimulus that causes an organism to repeat an act more frequently reinforces that specific behaviour (McLeod, 2018). Thus reinforcing one's behaviour could shape it towards the desired direction. Skinner's theory of

learning or operant conditioning too could be a means of controlling and motivating one's behaviour towards the desired direction. Behavioural modification therefore could be used by therapists to improve learning of new behaviours or habits.

B.F Skinner's behavioural modification based on operant or instrumental conditioning focused on changing of environmental events related to one's behaviour (Dahlberg, Toal, Swann & Behrens, 2005). Reinforcement of desired behaviours and punishing undesired ones was the foundation on which Skinner's theory of operant conditioning was based. According to Skinner (as cited in McLeod et al., 2018), shaping of one's behaviour, either through rewards or punishments was to encourage an organism to move closer to the desired behaviour. To achieve that, conditions (or contingencies) required to receive rewards shifted each time the organism moved a step closer to the desired behaviour.

The Skinner's model of learning therefore implies that gambling is a behaviour governed by contingencies of reinforcement operating under operant conditioning paradigm (cited in Dahlberg et al., 2005). As such, positive and negative reinforcement increases the probability of a gambling response being elicited and explains any subsequent persistence in gambling behaviour. Because a win of a bet often generates excitement thus leading to continued play being rewarded, experience of dissociation that enables temporary emotional escape from aversive negative affective states, representing a negative reinforcement that also motivates successive play.

Skinner's model of learning suggests that a stimulus can be foiled as the condition is maintained or still reinforce the original behaviour. For example, a university student may be lured into gambling after several invitations by their friends who are gamblers or voluntarily accompanying them into gambling dens. Studies have established the link between problem gambling and high risk behaviours like violence, depression, substance abuse, emotional and psychological distress, damaged relationships and poor health (Abbott, 2017; Potenza et al.,

2011; Slavin et al., 2013). Extinction of gambling behaviour, as suggested in Skinner's learning theory, is the desired ideal end-result because it would mark the end of aforementioned risks associated with gambling addiction. Moreover, abstinence from gambling is the only way to completely avoid risk factors, but if a student chooses to gamble, there is need for individual responsibility (Welte, Barnes, Wieczorek, Tidwell, & Parker, 2004). It is for this reason that the Skinner's operant conditioning theory was used in understanding the relationship between gambling addiction and violent behaviour among students in universities in Lang'ata constituency, Nairobi County, Kenya. This is the knowledge gap filled in this study.

2.3 Empirical Literature Review

This section critically reviews literature relevant to the study and is done according to the objectives of the study.

2.3.1 Types of Gambling Among University Students

Objective one of the study sought to investigate different types of gambling which university students are involved in. At the global level, a study by Petry et al. (2014) found that traditional gambling activities like lotteries, casinos, card games, animal racing, wagering at casinos, and sporting events were the common types of gambling in most jurisdictions in the globe. This study emphasized on traditional betting activities among the gamblers. The study, however, did not consider online betting as a common type of gambling. There is literature and knowledge gap to be filled because technology has enabled people living in any part of the globe to interact within the shortest time possible. Nowadays, technology has enabled betting triumph over numerous constraints brought about by limitations of time and space.

At the international level, an online study of 448 students at a Canadian public university found that more than 60% of the students had played scratch cards, the lottery and casino games (Atkinson et al., 2012). The study further found that 38% of the students who had gambled in the last 12 months played poker, 37% bought a raffle ticket, 33% bet on a sporting event, 24% had played bingo while 8% had bet on dog and/or horse racing. These findings indicate that scratch cards, lottery and casino games were three types of betting which most respondents were involved in. Animal betting was the least type of betting which the respondents indicated was common amongst them. The observation indicates that the type of betting which gamblers involve themselves significantly depended on the available betting activities in their environment.

In a different study by McBride and Derevensky (2012) among 18-20 year old university students in two urban Canadian universities found that university students who had gambled online, 67.6% had played poker, 18.9% played slot machines, 18.9% had played blackjack, 16.2% had played roulette and 13.5% had engaged in sports' betting. These findings indicate that poker was the highly rated online betting activity while sports' betting was the least rated betting activity among the studied university students in Canada. This study by McBride and Derevensky was undertaken in a university setting in Canada while this study was undertaken among university students in four universities in Nairobi County, Kenya.

In another study of nine hundred and ninety nine (999) Macau College and University students, six hundred and twenty nine (629) women and three hundred and seventy (370) men aged between 17-25 years, the respondents indicated that the preferred mah-jong (38.1%), soccer betting (25.4%), Mark Six lottery (22.9%), card games (17.3%), stocks (9.0%), land-based casino gambling (8.0%), slots (5.0%) and online casino games (1.2%) (Kam et al., 2017). This study points at different types of gambling amongst Macau College University

students. These findings also indicate they type of gambling activities in colleges and universities majorly depended on the betting activities available in the surrounding communities and societies.

At the regional level, Robert Custer (as cited in Koross, 2016) classified gamblers into six categories: professional gamblers; antisocial or personality gamblers; casual social gamblers; serious social gamblers; escape gamblers; and compulsive gamblers. Additionally, Robert Custer noted that:

> Professional gamblers are highly skilled at gambling and therefore they calculate their betting stake and meticulously execute their betting moves and when betting becomes unprofitable they choose to exit. Antisocial gamblers who bet to gain money often cheat. Casual social gamblers bet for fun or for relaxation. Serious social gamblers gamble for recreation and thus are in control of their betting. Escape gamblers prefer armature gambling and therefore they gamble to relieve themselves from anxiety, depression boredom and loneliness. For compulsive gamblers, gambling precedes their work, lives, families, friends and significant others (As cited in Koross, 2016, pp. 60-61).

This assertion is supported by Kenny Rogers, in his track, The Gambler, where a passenger meets a gambler in a train and after a while conversation ensued, 'son I have made a life out of reading people faces…you should know when to walk and when to runaway' (Schlitz, 1976). This track depicts the central characteristic of a professional gambler of developing innate ability to predict, with the highest precision, the outcome of a bet.

At the national level, it was found that students who gambled in Kenya were in all the six categories of gamblers (Koross, 2016). It was therefore necessary to look at the prevalence level of gambling among university students in Kenya. Similarly, Abbott (2017) observed that those who engage in violence are not necessarily the professional gamblers but 'escape and compulsive gamblers' because they find it difficult to control their emotions regardless of the betting results. The argument that the other four types of gamblers would rarely engage in violent behaviour because they are used to winning and losing of bets is quite plausible.

2.3.2 Prevalence of Gambling Among University Students

The second objective sought to find out the prevalence of gambling among university students in Lang'ata constituency, Nairobi. Studies at the global level have shown that there is high prevalence rate of gambling among university students (Abbott, 2017). For example, in a comprehensive review of literature on 72 meta-analytical studies of 41,989 university students of universities in USA, it was estimated that 6.13% and 10.23% of students had pathological and problem gambling respectively (Nowak, 2010). This study pointed at the prevalence of gambling among students in institutions of higher learning at the global level.

Looking at literature in international level, it was estimated that 2.6 million college students might be classified as problem gamblers who experience negative consequences of their gambling habits like poor performance and adverse mental health (Lostutter, Lewis, Cronce, Neighbors & Larimer, 2012). A different study on gambling and alcohol use among college students and non-college young people estimated that 75 % of college students had reported to be involved in gambling (Barnes et al., 2010). These findings also are reiterated in a study of college students in Tasmania, Australia which established that almost 60% of university students are regular gamblers (Corina Ly, 2010). Again, these studies focus on prevalence of problem gambling among students and non-students in institutions of higher education, however, this study focused on prevalence of gambling among university students in Lang'ata constituency, Nairobi County, Kenya.

At the regional level, a recent survey on problem gambling among young people in Sub-Saharan Africa it was reported that Ghana had the lowest number of youth involved in betting at 42%, followed by Uganda at 57% and Kenya was the leading with 76% prevalence in gambling (Ssewanyama & Bitanihirwe, 2018). These findings show that there was evidence of high number of young people participating in gambling across different geographical areas across Africa. Moreover, the results of the survey showed that the youth in

the East African region were the most affected by the problem gambling. This survey focused on the prevalence of problem gambling among the young in the African countries but this study focused on gambling among university students in Lang'ata constituency, Nairobi County, Kenya.

At the national level, a study of 100 students from Kisii University, Eldoret Campus in Kenya found that the number of students participating in gambling was at least more than 78% (Koross, 2016). Koross found that 50% of the respondents bet at least once a week, 28% bet at least once a fortnight, 12% bet at least once a month, and 7% bet at least once in the past three months. These findings show that many students in the university participated in betting games though at varying percentages. Koross further observed that the high rates of betting among the youth in Kenya showed that the country had turned out to be a betting nation. Although the study by Koross focused on betting in a single university in Kenya, this study looked at betting among university students in Lang'ata constituency, Nairobi County, Kenya.

2.3.3 Coping Strategies of Gambling

The third objective of the study explored the coping strategies used in reducing gambling addiction and violent behaviour among university students in Lang'ata constituency, Nairobi. At the global level, Abbott (2017) observed that prolonged exposure to betting meant that there was a higher number of the population that was exposed to the problem gambling because of the time factor. However, it is expected that a society that has had problem gambling for quite a long period of time, could be at a better position to have worked on efficacious interventions than a society where gambling is still at its infancy stage.

At regional level, gambling has been shown to have far-reaching negative implications at individual, family and societal levels; at individual level compulsive gambling

affects proportional number of young people and manifest in both psychiatric - anxiety, depression and sleep deprivation - and physical conditions like hypertension, peptic ulcer disease, and cardiovascular disease (Ssewanyana & Bitanihirwe, 2018). Wong, Zane, Saw and Chan (2012) noted that it is possible to understand human behaviour by looking at the motivational forces derived from unconscious mental processes. The approach was based on the imperative that all human behaviour has meaning and is functional. The approach presupposes that pathological gambling is a symptom or expression of an underlying psychological condition. The approach therefore takes the view that although some people may not understand why they indulge in gambling, abstaining from betting could lead to major depression, relapse or even drift to other addictive or self-destructive behaviour with similar or even worse consequences. Cognitive strategies therefore aimed at counteracting the underlying irrational beliefs and attitudes about gambling that initiate and nurture undesirable behaviour (Abbott, 2017). For instance, understanding of the concepts of probability and randomness could minimise or even expunge the gambler's fallacy. Ssewanyana and Bitanihirwe (2018) reiterate that few gamblers would admit that gambling is an addictive behaviour.

In spite of introduction of variety policies and preventive measures to minimise excessive gambling and related harm or risks, such efforts seem to have yielded little or no positive results. It is paradoxical that the government and gambling providers who want to increase revenues and profits would claim to be checking on gambling activities and gambler's behaviour at one and the same time. A study by Kam et al. (2015) found that gambling is negatively correlated to problem gambling severity hence prevention of gambling should be initiated at an early age in one's life but should continue after admission to college and university. It is therefore necessary that preventive programmes should focus

on the young people in learning institutions because they are at higher risks of being engaged in gambling and violent behaviour than any other group in the society (Kam et al., 2015).

In Kenya, there is no doubt that the fast-growing number of betting activities among the young and adult population could soon become a national disease instead of panacea to uplift oneself from economic, social and individual miseries. Koross (2016) found that universities lacked the policy framework for guiding institutions of higher education to properly deal with the problem of gambling. Lack of policy framework to guide the betting games among university students is a gap that needs to be addressed by university administrators and students' bodies in institutions of higher learning (Koross, 2016). This study suggested a theoretical framework as well as a policy framework that institutions of higher learning could adopt in addressing the pervasive problem of betting among university students in Kenya.

2.3.4 Risk Factors of Gambling Among University Students

Objective fourth sought to find out the risk factors of gambling among university students. It has been estimated that approximately 2.3% of the world's population experience problems with gambling (Williams, Volberg & Stevens, 2012). This shows that the quite a substantial number of global population experience problems with gambling. According to Atkinson et al. (2012), there are multiple risk factors for college students that increase their likelihood of problem gambling such as: male gender; substance use; certain behavioural disorders; lower socio-economic status and participation in athletic activities. Moreover, Williams et al. (2012) found that young males between (18-30 years) were the highest problem gamblers, while unemployment, divorce, single marital status, reliance on social welfare, low income, low education, and minority ethnicity were generic risk factors of problem gambling.

At the international level, a study of 999 students in Macau colleges and universities found that the mean age of gambling was 14.5 years (Kam et al., 2017). The study by Kam et al. (2017) established that those who were reported to have debts were all pathological gamblers. The study by Kam et al. (2017) showed that there was a significant correlation between the initiation age to gambling and other risk-factors associated with gambling disorder. However, a study by Peltzer (2014) on gambling behaviour and psychosocial correlates among university students in low, middle and emerging economies found that university students in the age bracket (20-30) significantly engaged in gambling activities more frequently than those aged between 16-19 years. The studies by Kam et al. (2017) and Peltzer (2014) presented slightly contradictory findings on the correlation between the age of gambling and participation in risk activities by the gamblers. Nevertheless, it is important to note that methodologies used in these factors compounded with other confounding factors could have contributed to the difference in the results of the given studies. The study by Kam et al. (2017) also established that most young men were getting into gambling very early in life before the acceptable legal age (18 years) of gambling in most jurisdictions. The assumption that some parents could unknowingly initiate their children to gambling by buying some scratch cards for them as well as allowing them to use their mobile phones for betting could explain increase in children betting (Koross, 2016).

A study of the young people aged between 18-34 years in the United States of America by Lutz and Gonnerman (2011) found that 67% of the respondents had gambled in the past one month, out of which 2.7% were found to be pathological gamblers. This study indicated that approximately two-thirds of the young people in the United Stated were involved in one form of gambling or another. The age demographic of the study was more or less similar to the anticipated participants of this study of students in universities in Lang'ata constituency, Nairobi County, Kenya.

A study by Shead, Gupta and Jeffrey (2012) conducted among the students in University of California found that male university students gambled more than females, 62.9% versus 36.8%, respectively. Moreover, the study revealed that males and females engaged in different types of games at different rates with males strongly associated to poker (47%) whereas female university students were highly engaged in playing lottery (20.8%). In a different study conducted by Wong, Zane, Saw and Chan (2013) among Illinois university students aged between 18-20 years, male-gender of the respondent was identified as the most common risk factor associated with pathological gambling. The results also revealed that males gambled twice as much as their counterpart females at prevalence rates of 69% and 36% respectively. Furthermore, the study found 20.1% of the males to be pathological gamblers compared to 7.8% of the female gamblers. Moreover, in a study carried out by McBride and Derevensky (2012) among the students at McGill University, Montreal, Canada, it was established that college students were the riskiest age group because 'they presume that they are smarter than everyone else and are invulnerable.

In a different study of 8,500 New Zealand Secondary Schools by Rossen et al. (2015), the legal age for gambling was found to vary according to the gambling activity: twenty years for Casino gambling; eighteen years of age for scratch tickets, track and sports betting, and electronic gambling machines (EGMs) in pubs and clubs. This study in New Zealand was carried out among High School students while this study was carried out among university students. There could be a possibility that students in Kenya, especially in Lang'ata, who indulge in betting started doing so at the early stages in life. Due to the wide anticipated age variation amongst university students in this study, cross-tabulation of ages (18-34 and above years) was carried out to establish the prevalence differences across varying age groups.

At the regional level, a meta-analysis of students from 15 universities in Africa by Blinn-Pike, Worthy and Jonkman (2007) found that students of the male gender more likely to gamble than the female students. Again, a study of gambling in sub-Saharan Africa found that most young males faced the risk of gambling disorder; however, the females involved themselves in closed forms of gambling like mobile internet-based lotteries and games (Ssewanyana & Bitanihirwe, 2018). The authors further found that as most gamblers age they cease to engage in violent behaviour.

In Kenya, a study conducted in Kisii University, Eldoret Campus found that males were significantly more likely to be both internet gamblers and problem gamblers, and that internet gamblers were more likely to be problem gamblers than non-internet gamblers (Koross, 2016). This implies that adolescents are at a higher risk of being involved in gambling than older individuals transitioning into adulthood. The finding resonates with later studies which found that gamblers age significantly correlated with the level of engagement in violent behaviour (Abott, 2017; Ssewanyana & Bitanihirwe, 2018).

2.3.5 Relationship between Gambling Addiction and Violent Behaviour

The last objective sought to establish the relationship between gambling addiction and violent behaviour among university students in Lang'ata constituency, Nairobi. Levitis, Lidicker, and Freund (2009) described violent behaviour as an 'externally visible activity of animals, in which a coordinated pattern of sensory, motor and associated neural activity responds to changing external or internal conditions. At the global level, Guerra, Huesmann, Spindler (2003) noted that aggressive behaviour is an act, physical or non-physical, which intended to injure or irritate another person. A study by Abbott (2018) also found that carrying of weapons like knives, whips or even a gun could be a precursor of violent behaviour. In the same way that the biblical Peter drew a knife and cut-off an ear one of the

High priest's servants who wanted to arrest Peter's boss, carrying any weapon when betting could easily provoke one to reflexively use it, either to revenge after losing a bet or even to harm others, as an expression of overwhelming excitement (Slavin et al., 2013). Betting therefore could provoke emotions which could lead to expression of violence if not addressed at the right time.

Relatively little research attention has been given to wider gambling-related harms like fighting, carrying of weapons and suicides or homicides. At the international sphere, studies carried out in Australia and New Zealand found the burden of harm associated with gambling is somewhat similar in magnitude to major depressive disorder and alcohol misuse and dependence (Dowling et al., 2015; Rossen et al., 2015). Rossen et al. (2015) found that the burden of gambling harm was 0.63 and 0.77 times less, respectively, than those of other disorders. Moreover, the gambling-related burden of harm was 2.5 times more than diabetes and 3.0 times more than drug use disorders. The burden of problem gambling was found to be relative high compared to other disorders and illnesses.

At the regional level, a study conducted in South Africa found that 13% of the respondents reported that they are experienced some violence from a gambling at an early age in life (Ssewanyana & Bitanihirwe, 2018). The finding points at the adverse long-life effects that gambling can have on young people as they transit to adulthood. Ssewanyana and Bitanihirwe (2018) also found that young people who were brought up in an environment that viewed gambling as an acceptable alternative source of livelihood were likely to devote substantial time and energies in gambling. The study clearly showed that gambling could have long-lasting side-effects not only to the gamblers but also to their significant others.

In Kenya, a study conducted in Kisii University, Eldoret Campus in Kenya, found that gambling causes problems when done in excess (Koross, 2016). According to Koross, betting among university students could lead to loss of tuition or boarding fee through betting,

missing of classes, drug abuse, deprivation of sleep, drug abuse and suicides. Koross further noted that a student at Kabianga University in Kenya committed suicide after losing a bet, and that many other students had dropped out of school after losing their college fee through betting. Koross further notes that university students had been involved in spree drinking and drug abuse after winning a lot of money through betting. The study by Koross pointed out at ramifications of betting outcomes.

2.4 Research Gaps

As seen in the literature review, gaps in the literature indicate the need for the study on the relationship between gambling addiction and violent behaviour among university students in Lang'ata constituency, Nairobi. There are various research gaps that this study filled.

The first knowledge gap is that gambling has existed in the human society for a long period of time and yet gambling providers and governments continue to explicitly or implicitly support it (Abbott, 2018) in spite of its adverse effects like carrying of weapons, physical fights, suicides, poor grades, skipping of classes, sleep deprivation among university students (Koross, 2016; Slavin et al., 2013). The reviewed literature revealed that gambling is an acceptable recreational activity in many societies in the world (Kam et al., 2017; Schwartz, 2007). This study found out the aforementioned aspects of gambling among university students in Kenya that might be similar or different from the ones established by scholars and researchers in the past.

The second research gap, which is closely related to the first one, is that parents involve themselves in gambling and also initiate their children into betting. This is clearly demonstrated when the parents purchase charity sweepstake cards, lottery tickets and sports betting cards for themselves and their children, with or without the knowledge that they were

initiating innocent children into the trap of betting. This study explored the influence of gambling by the significant other that could lead to gambling addiction among university students. This study highlighted the under-emphasized role played by the parents, guardians and significant others, either explicitly or implicitly, in initiating young ones into gambling.

The third research gap is derived from Petry (2014), who observed that, the difference in the results of the prevalence of problem or pathological gamblers is highly accounted to methodological or measurement difference and difference in sample size which affects variability of the results. Petry et al. found that the difference of prevalence of pathological gambling across samples picked from different geographical areas was insignificant. In a meta-sampling study of comparing gambling in 15 colleges by Blinn-Pike et al. (2007), it was estimated that the prevalence of problem gambling among university students was between 3% and 24%. Later, a different study on prevalence of gambling among university students in University of Malta by Chiara (2011), 25.4% of university students reported some problems with gambling, while 3.1% indicated probable pathological gambling. In spite of increase in prevalence of gambling among university students in the latter study, the increase was slightly higher and could be associated to other factors pointed out by Petry et al. (2014). Looking at the reviewed studies it is clear that prevalence of gambling among university students in the developing world was increasing while that in the developed world appeared to have reached at a ceiling point. Most of these studies have pointed out differences across gamblers' demographics. It is for this reason that this study attempted to find out whether gambling is being propagated by the same people who publicly appeared to be against it.

The forth knowledge gap focused on university students, who were probably not seasoned or professional gamblers instead of the pathological gamblers. According to Abbott (2017), much research and policies on gambling focus on problem gambling, but most of the harm associated with gambling participation is generated by ordinary gamblers and not

addictive gamblers. According to Browne et al. (2016), only 15% of harm related to gambling was attributable to problem gamblers, most of harm, however, was occasioned by people classified as low or moderate-risk gamblers. Furthermore, Browne et al. argues that while problem gamblers and those associated with them experience high levels of harm, they are greatly outnumbered by sub-clinical gamblers hence focus on low or moderate-risk gamblers could prove efficacious. It is for this reason that focus on university students, who are probably not seasoned gamblers, could point at individual coping strategies relevant in reducing and or eliminating excessive or addictive gambling.

The fifth research gap is informed by Burrhus Frederic Skinner's theory learning or operant conditioning. According to Abbott (2017), introduction of legal and regulatory measures, reduction of the number of gambling outlets, reduction of access hours, imposition of access restrictions and implementation outlet exclusion reduces consumption of gambling and consequently violent behaviour. However, Skinner's operant conditioning theory fails to address the contribution of inherent cognitive factors in human beings that are absent in other animals. Skinner's learning theory developed from experimental study of rats seems to emphasize that 'experience is the best teacher'. However, learning from experience could be synonymous to placing one's finger in fire to test the degree of heat emanating from the fire. This study suggested how Skinner's learning or classical operant conditioning theory could be employed by institutions of higher learning in formulating policies and developing programmes or services regarding gambling among university students in Kenya.

2.5 Conceptual Framework

This study focused on the relationship between gambling addiction and violent behaviour among students in universities in Lang'ata constituency, Nairobi. The independent variable is gambling addiction while the dependent variable is violent behaviour. The study also hoped to assess whether types of gambling, prevalence of gambling, risk factors and

coping strategies play a role on violent behaviour (physical fights, carrying of weapons, homicides and suicides). Figure 2.1 depicts the hypothesized relationship between gambling addiction and violent behaviour among university students.

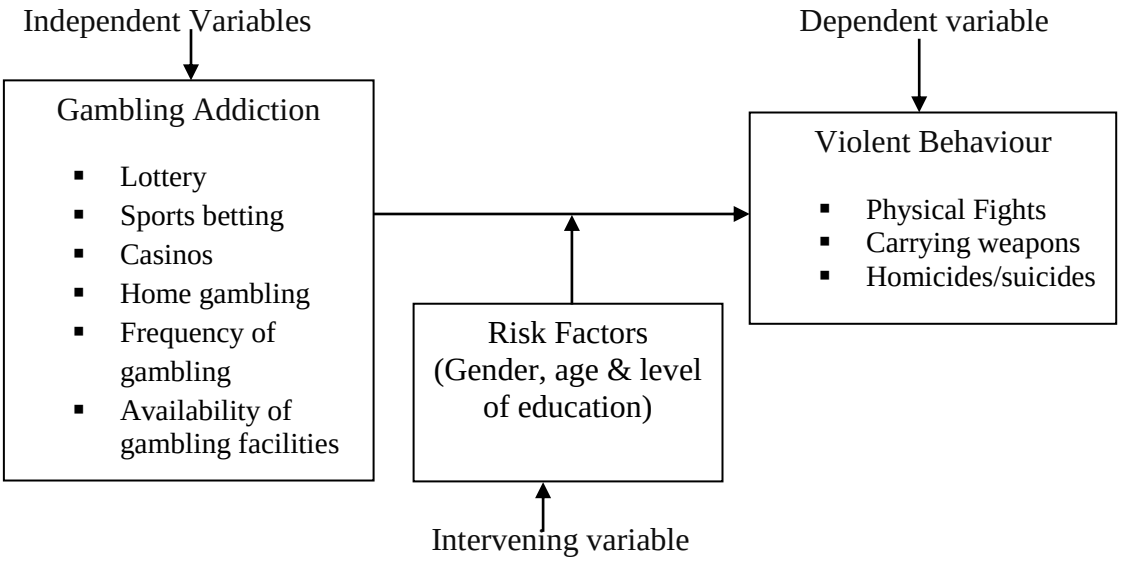

Figure 2.1: Conceptual Framework

Abbott (2017) noted that gambling has been at the core of societal evolution. For instance, Volberg et al. (2010) observed that in the developed world, gambling is a widely available recreational activity with entire generation growing up at times when lottery and casino gambling were all over and heavily advertised in different forms of media. Furthermore, according to the Department of Internal Affairs (2008) of USA, young gamblers engage in a range of gambling activities, from informal modes such as betting amongst friends, through to more formal activities like fruit machines, Electronic Gambling Machines (EGMs) and other forms of lottery-based machines.

Availability of gambling activities was also found to be key factors contributing to increase in prevalence rates among adults ranging from 0.1-6% among the adults (Abbott, 2017). Focusing on gambling among university students, various studies have indicated that approximately 6-8% of the students had a serious gambling problem worldwide (Kam et al., 2017; Koross, 2016). On the betting stakes, a study by the Data Team (2017) estimated that a

total of US$ 400 billion was lost through gambling in the year 2016. The provided empirical literature justified the choice of independent variables of the study.

Studies have found that problem gambling, has association with high risk behaviours like violence, depression, substance abuse, emotional and psychological distress, damaged relationships, poor health, poor grades and deprivation of sleep (Abbott, 2017; Koross, 2016; Potenza et al., 2011; Slavin et al., 2013). Nevertheless, it is hypothesized that introduction of coping strategies like cognitive, attitudinal and behavioural change could reduce if not eliminate violent behaviour among university students in Lang'ata Constituency, Nairobi.

CHAPTER 3

METHODOLOGY

3.1 Introduction

A research method is the plan for collecting, measuring and analysing data in a study or a survey (Mathooko, Mathooko, & Mathooko, 2011). The chapter deals with the research design, location of the study, target population, sampling techniques and sample size, research instruments, pretesting, data collection procedure, data analysis and ethical considerations.

3.2 Research Design

This was a quantitative study. The study used a correlational research design. A correlational research design was the most suitable for the study on the relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency. Moreover, a correlational design showed the strength of relationship between the variables of study and not necessarily the causal relationship between gambling addiction and violent behaviour among university students in Lang'ata constituency, Nairobi.

3.3 Location of the Study

The study was undertaken in four selected universities - Multimedia University (MMU), Jomo Kenyatta University of Agriculture and Technology, Karen Campus (JKUAT), Catholic University of Eastern Africa (CUEA), and Co-operative University of Kenya (CUK) - in Lang'ata Constituency, located in the west of Nairobi. In recent times, there has been proliferation of universities, both private and public, in Lang'ata Constituency. *(See Appendix 15).*

3.4 Target Population

The target population of the study was approximately 20,700 students from Multimedia University (MMU), Jomo Kenyatta University of Agriculture and Technology, Karen Campus (JKUAT), Catholic University of Eastern Africa (CUEA), and Co-operative University of Kenya (CUK). *See Table 3.1.* These four universities were selected for the study because of their proximity to the researcher as well as their ability to minimise the influence of diverse environments on the variables of the study.

3.5 Sampling Techniques and Sample Size

This section explored the sampling frame, the sampling techniques and the sample size.

3.5.1 Sampling Frame

The units of observation for the study were 393 students studying in the four selected universities, namely: Multimedia University (MMU), Jomo Kenyatta University of Agriculture and Technology, Karen Campus (JKUAT), Catholic University of Eastern Africa (CUEA), and Co-operative University of Kenya (CUK). In order to weight the sample size to all the four selected universities, the study used proportional allocation of sample size formula (Kothari & Garg, 2014, p. 60) in determining the number of university students to be included in the study, from each of the four universities. Table 3.1 depicts the sampling frame and the formula used in calculating the samples in each of the four selected universities.

Table 3.1 Sampling frame

Name of the University (Strata)	Distribution of students' population in each university (stratum) *(N1…N4)*	Students' (stratum) sample size (n1…n4) calculated using proportional allocation formula) $n1) \dots (n4 = \frac{n}{N} N1) \dots (N4$
CUK*(N1)*	5,500	105
CUEA*(N2)*	6,500	123
JKUAT*(N3)*	2,200	42
MMU*(N4)*	6,500	123
Total	20,700	393

Note: (N1…N4=Population of students in each University; n=*393;* N = 20,700; *n1…n4=Sample from each University)*

3.5.2 Sampling Techniques

In identifying participants to complete the questionnaire, stratified sampling and simple random sampling technique were employed. Stratified sampling technique was first used to categorize students according the year of study - year one to four. This categorization was important in the understanding correlation between the year of study, as an indicator of gambling demographics, and violent behaviour among university students in Lang'ata Constituency. Stratified sampling technique was also used in categorizing university students according to their gender. According to Kothari and Garg (2014, p. 14), stratified sampling aimed at having a representative sample from various sub-groups in the universe. At this stage, stratified sampling was used in classifying the students in each university, according to their gender: male or female. The stratified sampling technique was important in ensuring that the collected data was gotten from male and female university students. Finally, simple random sampling was used in picking respective number of participants from each of the four

universities. According to Kothari and Garg (2014, p. 14), simple random sampling ensured that each and every item in the population is given equal chance of being included in the sample. Simple random sampling therefore provided each and every student, in the four selected universities, an equal chance of inclusion in the study.

A computer-based Random Number Generator (Stat Trek, 2012) was used in picking university students using simple random sampling technique. The Computer-Based Random-Number Generator (CBRNG) was commanded to randomly pick and provide the expected definite number of students who participated in the study. Once all respective numbers of participants were picked from each stratum, a total of 393 participants were identified to fill the questionnaire. The CBRNG was quite efficient and easy to use and therefore the sampling process was fortified enough by using such a sampling programme.

3.5.3 Sample Size

The sample size of the study was calculated using a Yamane's (as cited in Kothari & Garg, 2014) sample size determination formula at 95 per cent level of significance. With a target population of 20,700, the sample size of the study was calculated using Yamane's (as cited in Kothari & Garg, 2014) mathematical formula at 0.05 confidence level. With a population of 20,700 university students, Yamane's sample determination mathematical formula was used in calculating the sample-size of the study. Yamane's formula for determining the sample-size is presented as follows:

$$n = \frac{N}{1 + N\,(e)^2}$$

Where:

$$n = The\ required\ sample\ size$$

$$N = Population\ (Total\ number\ of\ students\ in\ the\ selected\ four\ universities)$$

$$e = Margin\ of\ error\ (in\ percentage)$$

Substituting numbers in Yamane's formula:

$$n = \frac{20{,}700}{1 + 20{,}700\ (0.05)^2}$$

$$n = 392.4170616$$

(Rounded up)$n \approx 393$

Yamane's mathematical formula for determining the sample size, yielded a sample size of 392.4170616 units of observation in universities in Lang'ata Constituency. But because the number of students is a discrete variable, the sample size was rounded up to 393 students for the study.

3.6 Research Instrument

The study adopted a standardised-revised questionnaire by Bosworth and Espelage in collecting data on the relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency.

3.6.1 Questionnaire

The study used a standardized questionnaire with closed-ended questions. The questionnaire is formatted into four parts: Part one comprised of the participant's background information. Part two explored the types and prevalence of gambling among University students. Part three comprised of Bosworth and Espelage (as cited in Dahlberg et al. 2005) 'Attitude towards Violence Scale'. The tool measured perceived violence among university students. The questions were in 5-Item-Likert scale: 1 = Strongly Agree, 2 = Agree, 3 = Neither Agree nor Disagree, 4 = Disagree; and 5 = Strongly Agree). A score of 30 is the sum

total of all items. After summing up, a person scoring between 8-27 scores was classified as a high-risk gambler. Such a person may be experiencing a substantial level of gambling related to problems of violence. A person scoring the range of 3-7 could be termed as a moderate risk violent gambler and was already experiencing some violence related to their gambling behaviour. A person with the range of 1-2 was a low risk violent gambler and might be experiencing one or two minor violence problems related to gambling. A person with a range of 0 was a non-violent problem gambler. Higher scores indicated a greater positive attitude towards use of violence strategies and limited use of non-violent strategies. *(See Appendix 2).*

In Part four, the American Psychiatric Association (2013) a Diagnostic and Statistical Manual of Mental Disorders' pathological gambling diagnostic scale, was used. The responses were categorized in a Five - Item Likert scale: 1 = Never; 2 = Sometimes; 3 = Most of the Times; 4 = Almost Always; and 5 = I Do Not Know. A composite score equal to zero identifies no problem, 1-2 indicates low problem gambling, 3-7 indicates moderate problem gambling and 8-27 indicating severe problem gambling. *(See Appendix 2).*

The closed-ended questions provided quantitative responses for descriptive correlational analysis. Finally, I recruited and trained four research assistants to help in distribution and collection of the many copies of the questionnaire.

3.7 Pre-testing

The questionnaire was pre-tested in order to know its applicability in the study environment. Before issuing the questionnaire the researcher explained the purpose of the pre-test exercise. The pre-testing sample was purposively identified from students in University of Nairobi. Thus the pre-test sample was excluded from the study sample.

The sample of students from University of Nairobi was used for pretesting it because it had similar characteristics with the sample population of students from the four universities of the study. Forty (40) students, equivalent to 10% of the study sample, were purposively sampled from university of Nairobi, for pretesting. The pre-test sample was supported by Mugenda and Mugenda (2003) who recommended that 1-10% of the pre-test sample was enough for a descriptive study. Moreover, purposive sampling technique was used in identifying 40 students for pre-testing so that characteristics inherent in the study sample were replicated in the pre-test sample from students in University of Nairobi.

Once pre-testing of the questionnaire and its analysis was over, utmost precaution was taken in ensuring that the questions of concern were identified and necessary remedial actions were taken in designing the final questionnaire.

3.7.1 Validity of the Instrument

The statements in the standardised questionnaire were assessed for validity or accuracy to the Kenyan context adapting them. According to Mugenda and Mugenda (2003, p.99), validity refers to 'the accuracy and meaningfulness of inferences, which are based on research results'. Validity of an instrument is therefore a measure of how results from the study sample were the actual representation of the phenomenon under the study. This could be the reason why Kothari and Garg (2014, p. 70) argued that validity showed the extent at which differences found with a measuring instrument reflect true differences among the variables being tested. Again, Mugenda and Mugenda (2003, pp. 99 - 100) recommended that 'if the data representing the variables of the study are a true reflection of the problem under study, then inferences guided by such data were accurate and meaningful'. Mugenda and Mugenda further recommend that a validity coefficient could be computed by correlating measurements from data obtained from the same sample using two techniques. The study

therefore used split-half technique and the Cronbach's Coefficient Alpha in determining internal validity of the data. In a study of 3025 men aged between 18-64 years, Bosworth and Espelage instrument was found to have had a validity coefficient alpha of 0.79 (Roberts et al., 2016). A Coefficient alpha of 0.80 or more implied that there was a high degree of validity in the data set (Kothari & Garg, 2014).

3.7.2 Reliability of the Instrument

The statements in the standardised questionnaire were also assessed for reliability or consistency in the Kenyan context. According to Kothari and Garg (2014, p. 71), reliability is the measure of degree at which a research instrument gives consistent results after repeated measurements of the same person with the same instrument. Inaccurate coding, interviewee's or interviewer's disposition, and so forth, may attract inconsistencies in the measurement and thus render the true value measured by an instrument unreliable. It is for these reasons that the used a standardised questionnaire so as to enhance internal consistency of the data. Reliability of the study instrument was calculated from scores obtained from a single test administered to 40 students from university of Nairobi. The scores obtained in one item were correlated to scores obtained from other items in the instrument after which Cronbach's Coefficient Alpha was computed to determine inter-items correlation. In a study of 3025 men aged between 18-64 years, Bosworth and Espelage instrument was found to have had a reliability coefficient alpha of 0.86 (Roberts et al., 2016). According to Kothari and Garg (2014), a Coefficient of 0.80 or more would imply that there was a high degree of reliability in the data set. Therefore, items that recorded low coefficient alpha were adjusted accordingly.

3.7.3 Pre-testing Results

The test-retest method was used in assessing reliability of the questionnaire by administering the instrument twice to the same group of the identified students from university of Nairobi. In order to minimise effects of extraneous factors on the variables of the study, the researcher returned to university of Nairobi after three weeks and gave the same questionnaire for the retesting session. According to Mugenda and Mugenda (2003), keeping conditions in both tests constant minimises instability of the variables being measured. Moreover, retesting after after a relatively long period of time like a year may necessitate attrition of participants from the second testing session (Mugenda & Mugenda, 2003).

Cronbach's Alpha(α) of both test and retest scores were recorded and a verdict on reliability and validity of the results was made. Kothari and Garg (2014) recommend that a Cronbach's Alpha (α) of 0.8 and above shows that the instrument has acceptable internal consistency and accuracy. Table 3.2 shows the Cronbach Alpha (α) values of the test-retest results of the pre-testing scores. The findings show that all the variables of the study hadCronbach's alpha (α) values of above 0.8, the threshold of this study. Table 3.2 presents reliabilty and validity pretest results.

Table 3.2: Reliability and Validity Test Results

Variable	Test (1^{st}) Alpha(α)	Retest (2^{nd}) Alpha (α)	Remarks
Types of gambling	0.851	0.849	Accepted
Prevalence of gambling	0.812	0.814	Accepted
Risk factors of gambling	0.824	0.827	Accepted
Coping Strategies	0.872	0.871	Accepted
Prevalence of violence	0.829	0.923	Accepted

3.8 Data Collection Procedure

After successful defence of the proposal, the researcher sought permission to carry out the study from Tangaza University College Research Ethics Committee (TUCREC) and certification and authorization from the National Commission for Science, Technology, and Innovation (NACOSTI). As soon as NACOSTI's certificate was processed, the researcher recruited and trained four research assistants, who had newly graduated from universities. After training of the research assistants, the researcher visited the four selected universities of study for approval of the data collection activity. The four research assistants, together, with the researcher, visited the four universities to familiarize themselves with the study environment.

Once these universities had granted the permission to proceed with the study, the Human Resource Managers or the administrators were requested to avail the necessary details of the students. Guidance from the administrator or the HR manager gave the direction on whom to request for assistance in identifying the respondents of the study and the rooms where the study was conducted.

The study participants were briefed before the data collection activity kicked off. The participants were requested to fill-in and sign the 'Participants' Informed Consent Form' before receiving the standardised questionnaire. *(See Appendix 2).* Hereafter, sampling commenced and copies of the questionnaire were only issued to the identified students. Once copies of the questionnaire were completed, the research assistants collected them for analysis. The research assistants offered necessary support to all participants during the data collection process. Eventually, there was debriefing to thank the participants and to clarify any pending matter relevant to the study. The students were expected to take approximately 30 minutes to complete the questionnaire.

3.9 Data Analysis

The study used quantitative data analysis methods. Descriptive and inferential statistics were used in analysing quantitative data. Descriptive statistics was used in examining characteristics related the variables types of gambling, prevalence of gambling, coping strategies and violent behaviour among university students. Findings of descriptive statistics were presented in frequencies, percentages, mean and standard deviations statistic. Karl Pearson's correlation coefficients (r) test was used to compare discrete variables and continuous variables among university students involved in gambling addiction and violent behaviour. Analysis of Variance (ANOVA) was used in examining risk factors associated with gambling addiction and violent behaviour. Eventually, regression analysis was used in establishing the general model on the relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency, Nairobi County. Statistical Package for Social Sciences (SPSS) version 21 was used in analysing data. Data analysis, presentation, interpretation, and thesis writing was carried out consecutively.

3.10 Ethical Considerations

Permission to carry out the study was first sought from Tangaza University College Research Ethics Committee (TUCREC). Once clearance by TUCREC was granted, certification and authorization by National Commission for Science, Technology, and Innovation (NACOSTI) was sought. The researcher then sought approvals from the Catholic University of Eastern Africa (CUEA), Jomo Kenyatta University of Agriculture (JKUAT) and Technology, Karen Campus, Multi-media University (MMU) and Co-operative University of Kenya (CUK) administrations.

The researcher explained to the participants the purpose of the study. The respondents were also asked to voluntarily and honestly provide their responses. The study did not use

any form of deception to get information from respondents. Similarly, the respondents were requested to be honest in their responses. All participants were asked to complete and sign a 'Participant's Informed Consent Form' to ascertain that they had understood the purpose of the study. Signing of the 'Participant's Informed Consent Form' was evidence of informed consent from the participant.

The participants were also informed that they had the right to leave or withdraw from the process at any time, the given consent notwithstanding. To alleviate the fear that the participants confidential information may leak into the public domain, numerical values instead of proper nouns were used in identifying the participants. Again, the participants were asked not to write their names on the questionnaire. Participants were informed that all the collected data was used for academic purposes only. Above all, there was no monetary compensation to participate in the study.

The researcher observed academic prudence by adhering to the proposed data collection procedure, as well as being extra-careful not to intrude into the participants' private life. Participants who felt that the study had emotionally, mentally or otherwise affected them adversely were offered the necessary counselling assistance at the researcher's expense.

CHAPTER 4

RESULTS

4.1 Introduction

This chapter presents the findings of the study on the relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency in Nairobi County, Kenya. Questionnaire return and response rate, demographic characteristics of the respondents, findings as per research objectives, limitations of the study, and summary of the findings were addressed in this chapter.

4.2 Questionnaire Return and Response Rate

This section presents the return rate of the study on the relationship between gambling and violent behaviour among university students in Lang'ata constituency, Nairobi. The below flow chart (Figure 4.1) show the breakdown of the questionnaire return analysis.

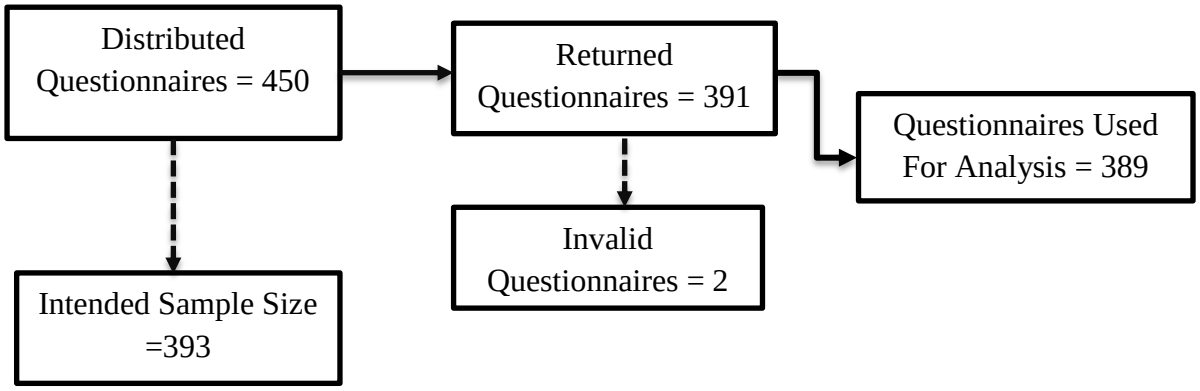

Figure 4.1 Questionnaire Return Analysis

The flow chart in Figure 4.1 shows that from an intended sample size of 393 respondents, 450 questionnaires were distributed to university students in four universities of the study. Distribution of a sum total 450 questionnaires was to address attrition or the number of university students who might decide to drop out of the study. Out of the 450

questionnaires, 391 were completed and returned, translating to a response rate of 99.4%. Two (2) questionnaires, however, had serious missing values. These two (2) invalid questionnaires were removed from the analysis dataset. The original sample size of 393 observations therefore dropped to 389. Mugenda and Mugenda (2003, p. 83) recommend that as a rule of thumb, a response rate of 70% and over is very good. The response rate of this study surpasses the recommended threshold.

4.3 Demographic Characteristic of the Respondents

This section presents demographic characteristics (gender, age, university of study and academic pursuance) of the interviewed university students. Table 4.1 presents demographic characteristics of the respondents.

Table 4.1 Demographic Characteristics of the Respondents

Variable	Construct	Frequency	Percentage
Gender	Male	254	65.3
	Female	135	34.7
Age	18-21 Years	289	74.3
	22-25 Years	80	20.6
	26-29 Years	13	3.3
	30-33	4	1.0
	34 and Above	3	.8
University of Study	JKUAT	55	14.1
	MMU	128	32.9
	CUEA	117	30.1
	CUK	89	22.9
Academic Pursuance	Certificate	161	41.4
	Diploma	119	30.6
	Degree	109	28

Sample Size (n)=389

As shown in Table 4.1, out of 389 respondents, 254 (65.3%) were male while 135 (34.7%) were female. The data show that a majority of those who participated in the studey were male. The repondents aged between 18-21 years constituted 74.3% (289) of the sample size while those between 22-25 years were the second largest with 80 (20.6%). University students between the age 26-29 years were the third largest group with a total of 13 (3.3%) students. University students between age 30-33 years were the forth largest group with a total of 4 (1%) respondents. University students from age 34 years and above constituted the least number 3 (.8%) of those who participated in the study. These results indicate that university students within the age bracket of 18-21 years were the majority, while those aged 34 years and above were the minority.

Focusing on the institution where the respondents were studying, Jomo Kenyatta University of Agriculture and Technology (JKUAT) recorded the lowest percentage of students 55 (14.1%) respondents, followed by Co-operative University of Kenya (CUK) with 89 (22.9%) respondents, while Catholic University of Eastern Africa (CUEA) was next with 117 (30.1%) respondents and Multimedia University (MMU) led with 128 (32.8%) respondents. The findings indicate that MMU had the highest number of students, followed by students in CUEA, CUK was third in the list and JKUAT had the least number of students. Moreover, out of the 389 respondents 161 (41.4%) were taking certificate courses, 119 (30.6%) were taking diploma courses while 109 (28%) were taking courses in bachelor's degrees.

4.4 Findings As Per Research Objectives

This section provides findings of the study as per the research objectives.

4.4.1 Types of Gambling Activities Among University Students

Objectiveone sought to find out the types of gambling which university students were involved in.Data was analyzed onthe gambling activities which university students were involved in. The outcomes are shown in Table 4.2.

Table 4.2 Types of Betting Activities

Type of Betting	Frequency		Total
	Yes (%)	No (%)	Respondents
Online Football	370(95.1%)	19(4.9%)	389
Other Sports	351(90.2%)	38(9.8%)	389
Lottery	277(71.2%)	112(28.8%)	389
Home Gambling	276(71%)	113(29%)	389
Casinos	180(46.3%)	209(53.7%)	389

As shown in Table 4.2, online football betting recorded the highest number of participants with 370 (95.1%) of university students who engaged in various types of online football betting like Sports Pesa, Betway, Betin et cetera. Other sports betting recorded the second highest number with 351 (90.2%) of university students who participated in various other sports' betting activities. Lottery was in third position with 277 (71.2%) of the surveyed university students. Home gambling was in the fourth position with 276 (71%) of the surveyed respondents while Casinos recorded the least number of involvement with 180 (46.3%) of the surveyed university students. These results show that online footbal betting recorded the highest number of university students who participated in the studywhile Casino betting recorded the least number of university students who participated in this study.

In further addressing objective one, data was collected on the amounts of monies spent and frequency of betting among the sampled university students. The outcomes are shown in Table 4.3.

Table 4.3 Monies Spent and Frequency of Betting

	Monies in (KSH.) Spent and Frequency of Betting					
Type of Gambling	250 and below	251-500	501- 750	751-1000	Above 1000	Totals
Online Football	245(63%)	65(16.7%)	32(8.2%)	17(4.4%)	11(2.8%)	370(95.1%)
Other Sports	239(61.4%)	55(14.1%)	28(7.2%)	19(4.9%)	10(2.6%)	351(90.2%)
Lotery	203(52.2%)	39(10%)	21(5.4%)	10(2.6%)	4(1%)	277(71.2%)
Home Betting	215(55.3%)	27(7%)	16(4.1%)	12(3.1%)	6(1.5%)	276(71%)
Casinos	134(34.4%)	22(5.7%)	15(3.9%)	6(1.5%)	3(0.8%)	180(46.3%)

As shown in Table 4.3, amongst the university students who used not more than 250 Kenya Shillings, online football recorded the highest number 245 (63%) of repondents. Other sports had the second largest number 239 (61.4%) of respondents involved in betting in the same category. Home betting was next 215 (55.3%) while lottery was in forth position 203 (52.2%) in the category of those who participated in betting with not more than 250 Kenya Shillings.

As shown in Table 4.3, among those who spent between 251 and 500 Kenya Shillings, football betting recorded the highest number 65 (16.7%) of respondents. Other sports were next 55 (14.1%) followed by lottery 39 (10%). Home betting was next (27 or 7%) while Casinos had the least number 22 (5.7%) of respondents in this category.

Table 4.3 also shows that among those who spent between 501 to 750 Kenya Shillings in betting, online betting had the highest number 32 (8.2%) of the respondents. Next was

other sports 28 (7.2%) while lottery was third 21 (5.4%). Home betting was forth 16 (4.1%) while those who bet in casinos, in this stake category, were the least 15 (3.9%).

As shown in Table 4.3, among those spent between 751 to 1000 Kenya Shilllings, other sports recorded the highest number 19 (4.9%) while online sports betting had the second highest number 17 (4.4%). Home betting was third 12 (3.1%) while lottery was forth 10 (2.6%). Casinos had the least number 6 (1.5%) of respondents who spent monies in this betting category.

Table 4.3 also shows that among those who spent above 1000 Kenya Shillings in betting, online football had the highest number 11 (2.8%) of participants followed by other sports 10 (2.6%). Home betting was third 6 (1.5%) while lotery was forth 4 (1%). Casinos had the least number 3 (0.8%) of respondents who involved themselves in betting with over 1000 Kenya Shillings. These varying results show that different university students spent various amounts of money in different types of betting activities. Moreover, it was evident that as the amounts of money spent on a particular betting activity increased so did the number of respondents decrease.

4.5.2 Prevalence of Gambling Among University Students

Objective two sought to establish the prevalence of gambling among university students in Lang'ata constituency, Nairobi County, Kenya. Data was analysed on the frequency of betting or gambling among the sampled university students. The outcomes are shown in Table 4.4.

Table 4.4 Frequency of Gambling

Type of Betting	Frequency (percentage) of Betting					
	Daily	Four Times a Week	Once a Week	Once a Month	Less Often	Totals
Casinos	7(1.8%)	15(3.9%)	20(5.1%)	58(15%)	80(20.5%)	180(46.3%)
Home Betting	11(2.8%)	22(5.7%)	38(9.8%)	67(17.2%)	138(35.5%)	276(71%)
Lottery	14(3.6%)	26(6.7%)	39(10%)	55(14.1%)	143(36.8%)	277(71.2%)
Other Sports	100(25.7%)	126(32.4%)	83(21.3%)	29(7.5%)	13(3.3%)	351(90.2%)
Online Football	117(30.1%)	143(36.8%)	95(24.4%)	11(2.8%)	4(1%)	370(95.1%)

The results of the study show that the number of students who participated in betting, online football betting recorded the highest numbers 370 (95.1%), followed by other sports 351 (90.2%), next was lotterry 277 (71.2%), followed by home betting 276 (71%) and the least was casinos 180 (46.3%).

As shown in Table 4.4, amongst those who placed bets on daily basis, online football had the highest number 117 (30.1%), other sports betting was second 100 (25.7%), lottery was third 14 (3.6%), home betting was forth 11 (2.8%), and casinos had the least number 7 (3.6%) of university students. Among those who bet ‘four times a week’, online footbal betting recorded the highest number 143 (36.8%) of the respondents, followed by other sports (32.4%), lottery was next 26 (6.7%), home betting was fourth 22 (5.7%) and casinos had the least number 15 (3.9%)university students.

Table 4.4 shows that amongst those who placed bets ‘once a week’, online football betting recorded the highest number 95 (24.4%) of the respondents, followed by other sports 83 (21.3%), next was lottery 39 (10%), followed by home betting 38 (9.8%) and Casinos were the least number 20 (5.1%) of students.

As shown in Table 4.4, amongst those who engaged in betting ‘once a month’, home betting had the highest number 67 (17.2%), followed by casinos 58 (15%), lottery was next 55 (14.1%), other sports followed 29 (7.5%) and online football betting had the least number 11 (2.8%) of university students.

Table 4.4 also shows that amongst those who engaged in betting ‘less often’, lottery recorded the higest number 143 (36.8%), home betting was next 138 (35.5%), followed by casinos 80 (20.5%), Other sports were next 13 (3.3%), while online football had the least number 4 (1%) of students.These findings show that different university students involved themselves in different betting activities. Additionally, different university students had varrying preferences on the number of times theyparticipated inbetting activities.

4.5.3 Coping Strategies of Gambling

Objective three sought to establish the coping strategies of gambling among university students in Lang’ata constituency, Nairobi County, Kenya. Data was analysed on the frequency and percentages of betting among the respondents and the outcomes are shown in Table 4.5.

Table 4.5 Coping Strategies of Gambling

Item	Yes	No
When I face conflict while betting, I stop gambling and go home	117(30.1%)	272(69.9%)
When I face conflict while betting, I go to the bar or club and dance the whole night	272(69.9%)	117(30.1%)
When I face conflict while betting, I defend myself by fighting back	233(59.9%)	156(40.1%)
When I face conflict while betting, I draw out a weapon to defend myself	272(69.9%)	117(30.1%)
When I face conflict while betting, I draw out a weapon to scare the other away	234(60.2%)	155(39.8%)
When I face conflict while betting, I draw out a weapon to feel secure	272(69.9%)	117(30.1%)
When I am losing a bet, I get angry	311(79.9%)	78(20.1%)
When I am losing a bet, I bet or thumb the table	350(90%)	39(10%)
When I am losing a bet, I become destructive or disruptive	272(69.9%)	117(30.1%)
When I am losing a bet, I stop gambling	78(20.1%)	311(79.9%)
When I am losing a bet, I continue losing till I have no money	273(70.2%)	116(29.8%)
When I am losing a bet, I borrow money from my fellow gamblers	273(70.2%)	116(29.8%)
When I am losing a bet, I am ready to sell my belongings or some family assets as my betting securities to fellow gamblers	272(69.9%)	117(30.1%)

The results of the study shows that a majority 272 (69.9%) of respondents indicated that they would not leave betting and go home when a conflict arose during betting. Only a minority 117 (30.1%) of the respondents provided a contrary opinion to the above statement. Further, a majority 272 (69.9%) of respondents indicated that when they faced conflict while betting they went to the bar or club and danced the whole night. Only a minority 117 (30.1%) of the respondents provided a contrary opinion to this statement. On a related statement,a majority 233 (59.9%) of the respondents indicated that they defended themselves

by fighting back when they faced conflict while betting. However, a minority 156 (40.1%) indicated that they did not defend themselves when a conflict arose while betting.

As shown in Table 4.5, a majority 272 (69.9%) of respondents indicated that they drew a weapon to defend themselves when they faced a conflict while betting. A minority 117 (30.1%) of the respondents held a contrary opinion concerning the provided statement. On a related statement, a majority 234 (60.2%) indicated that they drew out a weapon to scare the other away when a conflict arose while betting. A minority 155 (39.8%) held a contary opinion that they did not not draw out a weapon to scare the other away when they faced conflict while betting. On a different but related statement, a majority 272 (69.9%) indicated that they drew out a wepon to feel secure when they faced a conflict while betting. On the same statement, a minority 117 (30.1%) held a contrary opinion that they did not draw a weapon to feel secure when they faced conflict while betting. These related statements show that a majority of the respondents drew a weapon when a conflict arose during betting but for various reasons.

As shown on Table 4.5, a majority 311 (79.9%) of respondents indicated that they got angry when they realized that they were losing a bet. On the contrary, a minority 78 (20.1%) indicated that they did not get angry when they realized that they were losing a bet.

Again, a majority 350 (90%) indicated that they continued betting or even thumbed the table when it was evident that they were losing a bet. Only a minority 39 (10%) of the respondents held a contrary opinion to the provided statement. On a related statement, a majority 272 (69.9%) of the respondents held the opinion that they became destructive or disruptive when they realized that they were losing a bet. On the contrary, a minority 117 (30.1%) of the respondents indicated that they did not become destructive or disruptive when they realized that they were losing a bet.

Table 4.5 shows that a majority 311 (79.9%) of respondents indicated that they did not stop gambling when they realized that they were losing a bet as opposed to a minority 78 (20.1%) who provided a contrary opinion. On a related statement, a majority 273 (70.2%) of the respondents indicated that they continued betting until they had no money even after realizing that they were losing a bet. Only a minority 116 (29.8%) of the respondents provided a contrary opinion. Moreover, a majority 273 (70.2%) of respondents indicated that they borrowed money from fellow gamblers even when they realized that they were losing a bet. A minority 116 (29.8%) provided a contrary opinion to the statement. Again, a majority 272 (69.9%) of the respondents indicated that they were ready to sell their belongings or some family assets as betting securities to fellow gamblers when they realized that they were losing a bet. A minority 117 (30.1%) of the respondents provided a contrary opinion. The provided responses are a clear indication that a majority of respondents did whatever was at their disposal to continue betting; a prerequisite for gambling addiction in most societies with the culture betting problems (Abott, 2017; Roberts et al., 2016).

4.5.4 Risk Factors of Gambling Among University Students

Objective four explored the risk factors of betting associated with violent behaviour among the university students in Lang'ata Constituency, Nairobi County, Kenya.Table 4.6 provides One Way ANOVA for the risk factors of gambling addiction.

Table 4.6 One Way ANOVA of Risk Factors of Gambling

Risk Factors	Pearson Correlation (r)	P-value
Gender	.204**	.000
Age	-.297**	.000
University of study	.481**	.000
Level of Academic Pursuance	-.233**	.000
Existence of Betting Policies	.144**	.004

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
N=389

As shown in Table 4.6, gender was a statistically significant construct of risk factors of gambling (r = .204**; p = .000), at 0.01 level of significance. Similarly, age was a statistically significant construct of risk factors of gambling (r = -.297**; p = .000), at 0.01 level of significance. Moreover, university of study was a statistically significant construct of risk factors of gambling (r = .481**; p = .000), at 0.01 level of significance. Also, the level of academic pursuance was a statistically significant construct of risk factors of gambling (-.233**; p =.000), at 0.01 level of significance. Lastly, betting policies or services was a statistically significant construct of risk factors of gambling (r = .144**; p = .004), at 0.01 level of significance. All the identified five constructs of risk factors of gambling were statistically significant factors related to the relationship between gambling addiction and violent behaviour among university students in Lang'ata constituency, Nairobi County.

4.5.5 Prevalence of Violent Behaviour Among University Students

The objective sought to determine the prevalence of violent behaviour among university students in Lang'ata Constituency, Nairobi County, Kenya. Data was collected on prevalence of violent behaviour among university students and the results are shown in Table 4.7.

Table 4.7 Prevalence of Violent Behaviour

Items	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Totals
I walk away from a fight to avoid violence	72 or 18.5%	___	____	93 or 23.9%	224 or 57.6%	389
I am constantly aware of arousal to violence	19 or 4.9%	19 or 4.9%	57 or 14.7%	144 or 37%	150 or 38.6%	389
I return back violence with violence	257 or 66.1%	38 or 9.8%	37 or 9.5%	57 or 14.7%	____	389
I easily get violent with teasers	244 or 62.7%	54 or 13.9%	38 or 9.8%	34 or 8.7%	19 or 4.9%	389
I easily control myself and others not to indulge in violence	77 or 19.8%	38 or 9.8%	19 or 4.9%	89 or 22.9%	166 or 42.7%	389
I refuse to fight and I am not afraid of my friends thinking that I am a coward	97 or 24.9%	18 or 4.6%	19 or 4.9%	73 or 18.8%	182 or 46.8%	389
I always carry a knife, a whip or a club	259 or 66.6%	19 or 4.9%	38 or 9.8%	16 or 4.1%	57 or 14.7%	389

As shown in Table 4.7, a majority 224 (57.6%)of participants strongly agreed that when betting they walked away from a fight to avoid violent behaviour while a minority 72 (18.5%) strongly disagreed with the proposition. On whether while betting the university students were constantly aware that they could violently respond to provocations, most respondents were indifferent to this proposition. Moreover, a majority 257 (66.1%) of respondents disagreed to the proposition that when betting and they experienced violent behaviour, they returned it back with violence. On whether when betting and someone teased the gamblers, the students did get violent to stop them, a majority 244 (62.7%) of the respondents disagreed with the statement. Moreover, the participants were indifferent to the statement that when betting they could easily control themselves and others not to indulge in

violent behaviour. Again, the participants were indifferent to the assertion that when betting they refused to fight and were not afraid of their friends tagging them as cowards. Finally, a majority 259 (66.6%) of the respondents were in disagreement that they always carried a knife, a whip or a club when betting. Looking at the responses provided by individuals in this section, it is evident that descriptive statistics could not provide sufficient explanation for violent behaviour among university students who engage in betting. It is for this reason that a correlational analysis could provide correlation coefficients which are more informative on the topic of the study.

4.5.6 Correlation Analysis

Data was collected to establish whether there was multicollinearity among the explanatory variables that explained corelations between gambling addiction and violent behaviour among university students in Lang'ata constituency, Nairobi County. Karl Pearson's Coefficient of Correlations *(r)*were computed and the outcomes are illustrated in Table 4.8.

Table 4.8 Correlation Analysis

		VB	ToG	PoG	RFG	CoS
VB	Pearson Correlation	1				
	N	389				
ToG	Pearson Correlation	.589**	1			
	Sig. (2-tailed)	.040				
	N	389	389			
PoG	Pearson Correlation	-.265*	.505	1		
	Sig. (2-tailed)	.046	.867			
	N	389	389	389		
RFG	Pearson Correlation	.214*	.046	-.124	1	
	Sig. (2-tailed)	.025	.363	.142		
	N	389	389	389	389	
CoS	Pearson Correlation	.705**	.005	-.028	.008	1
	Sig. (2-tailed)	.037	.918	.586	.874	
	N	389	389	389	389	389

**. Correlation is significant at the 0.01 level (2-tailed).
*.Correlation is significant at the 0.05 level (2-tailed).

VB= Violent Behaviour; ToG= Types of Gambling; PoG= Prevalence of Gambling; RFG= Risk Factors of Gambling; CoS= Coping Strategies

As shown in Correlation Analysis results in Table 4.8, there was a statistically significant relationship between Types of Gambling (ToG) and Violent Behaviour (VB) among university students (r = 0.589; p = .040) since the p-value of .040 is less than 0.05 level of significance. There was also a statistically significant relationship between Gambling (PoG) and Violent Behaviour (VB) among university students (r = .265; p = .046) since the p-value of .046 is less than 0.05 level of significance. Moreover, there was a statistically significant relationship between Risk Factors of Gambling (RFG) and Violent Behaviour (VB) among university students (r = .214; p = .025) since the p-value of .025 is less than 0.05 level of significance. Lastly, there was a statistically significant relationship between Coping Strategies (CoS) and Violent Behaviour (VB) among university students (r = .705; p = .037)

since the p-value of .037 is less than 0.05 level of significance. All independent variables (Types of Gambling; Prevalence of gambling; Risk factors of gambling; and Coping Strategies) have statistically significant relationship with the dependent variable (Violent Behaviour) of the study.

4.5.7 Analysis of Variance (ANOVA)

The Coefficient of determination *(R^2)* was used in determining the proportion of violent behaviour among university students that was explained by independent variables of the study. The outcomes are presented in Table 4.9.

Table 4.9 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.858[a]	.737	.715	.48098

a. *Predictors: (Constant), Types of Gambling, Prevalence of Gambling, Risk Factors of Gambling, Coping Strategies*

The results, as illustrated in Table 4.9, show that there was a positive general correlation (R= .858) between all the independent variables and the dependent variable of the study. The coefficient of determination (R-Square = .737), as shown in Table 4.9, indicates that the explanatory variables of the study managed to explain 73.7% variation in violent behaviour, as a result of gambling, among the sampled university students in Kenya. The results implied that the explanatory variables of the study considerably contributed to violent behaviour among the university students and the remaining 26.3% could be attributed to other factors that were outside the scope of this study.

The study further examined the significance of the following regression model. Analysis of variance (ANOVA) was used to test the significance of the regression model and

the results to this effect were as shown in Table 4.10. $Y = \beta 0 + \beta 2X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \mu i$

Table 4.10 Analysis of Variance (ANOVA[a])

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	84.262	4	21.0655	480.847	.000[b]
	Residual	16.837	384	.0438		
	Total	101.099	388			

a. Dependent Variable: Violent Behaviour (VB)

b. Predictors: (Constant) Types of Gambling (ToG), Prevalence of Gambling (PoG), Coping Strategies (CoS), Risk Factors of Gambling (RFG)

As shown in Table 4.10, the model linking the studied explanatory variables (types of gambling, prevalence of gambling, coping strategies and risk factors of gambling) to the dependent variable (violent behaviour) was significant (F= 480.847; p = 0.000). The F-statistic was large and the p-value was less than 0.05 level of significance, hence the regression model was appropriate for further analysis and interpretation.

4.5.8 Regression Analysis

The results in Table 4.11 outlines the regression coefficients (βn) that illustrate the extent to which the analysed explanatory variables translated to variation in violent behaviour among university students in Lang'ata constituency, Kenya.

Table 4.11: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	T	
1	(Constant)	2.754	.205		13.434	.000
	Types of Gambling	-.266	.124	-.127	-2.151	.039
	Prevalence of Gambling	.124	.117	.063	1.063	.028
	Risk Factors of Gambling	.174	.070	.128	2.491	.013
	Coping Strategies	-.153	.294	-.009	-.180	.027

a. Dependent Variable: Prevalence of Violent Behaviour

The regression model is interpreted using the results indicated in Table 4.11.

$$Y = \beta 0 + \beta 1X1m + \beta 2X2m + \beta 3X3m + \beta 4X4m + \mu i$$

The (βn) substituted with numerical values:

$$Y = 2.754 + 0.266X1m + 0.124X2m + 0.174X3m + 0.153X4m$$

The substituted model therefore becomes:

VB = 2.754+0.266ToG+0.124PoG+0.174RFG+0.153CoS

The resulting regression model indicates that for every unit change in violent behaviour among university students as a result of betting to be effected, there ought to be 0.266 unit change in types of gambling (ToG), 0.124unit change in prevalence of gambling (PoG), 0.174 unit change in risk factors of gambling (RFG) and 0.153 unit change in coping strategies (CoS), while holding other factors, not addressed by this study, constant as represented by ($\beta 0 = 2.754$).

In the resulting model, all the four aforementioned factors constituting gambling addiction (ToG; PoG; RFG; & CoS) are significant predicators of violent behaviour (VB) among university students because their p-values (.039; .028; .013; .027) respectively, were less than 0.05 level of significance. The optimal model of the study therefore remains as:

VB = 2.754+0.266ToG+0.124PoG+0.174RFG+0.153CoS

4.5.9 Hypothesis Testing

The criteria used in hypothesis testing was that the null hypothesis was to be accepted if the p-value is 0.05 or less. The null hypothesis was to be rejected if the p-value is greater than 0.05 level of significance. In other words, if the p-value is less than 0.05 then it was concluded that the model was significant and had good predictors of the dependent variable and that the results were not based on pure chance. If the p-value was greater than 0.05 then the model would not be significant hence could not be used in explaining variation in the dependent variable.

The initial hypothesis that 'there is no relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency', was contradicted in this study. The hypothesis yielded a t-statistic score of 0.546 and a p-value of 0.585. The null hypothesis was therefore failed to be rejected and it was concluded that there is no relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency, at 95% level of significance.

Table 4.12 Hypothesis Testing Summary

Hypothesis	Results	Interpretation	Verdict
There is no relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency	t-statistics = .546; p-value = 0.585	There is statistically significant effect at 0.05 level of significance	Failed to reject the null hypothesis

4.6 Limitations of the Study

There was scarcity of literature related to the topic of the study. The researcher had to subscribe for membership with the Kenya National Library Services (KNLS) so as to access wider, newer and relevant literature and research materials from all over the globe.

The administration from one of the studied universities was reluctant in granting permission to collect data from their institution. However, this limitation was addressed by booking appointment with the Dean of Students, who after getting satisfactory responses permitted the researcher to collect data provided that a copy of the final report was donated to the institution.

The study applied correlational survey design which is commonly used in social studies owing to its very nature of establishing strengths of relationships. Nevertheless, this design may not provide causality of gambling addiction and violent behaviour among university students hence experimental design may be more approapriate in future studies.

4.7 Summary of the Key Findings

As regards demographics, 254 (65.3%) of the repondents were male while 135 (34.7%) were female. The data shows that a majority of those who participated in the study were male. Among the university students who participated in the study, those within the age bracket of 18-21 years were the majority 289 (74.3%) while those aged 34 years and above were the minority 3 (.8%). MMU had the highest number 128 (32.8%) of students who gambled, followed by students in CUEA 117 (30.1%), CUK was third 89 (22.9%) and JKUAT had the least number 55 (14.1%) of students. From those who particiapted in the study, 161 (41.4%) were taking certificate courses, 119 (30.6%) were taking diploma courses while 109 (28%) were taking bachelor’s degree courses.

Concerning the types of gambling that university students were engaged in, online football betting recorded the highest number of participants with 370 (95.1%) of respondents, followed by other sports betting with 351 (90.2%) of the respondents. Lottery was the next with 277 (71.2%) of the respondents, followed by home gambling with 276 (71%) of the respondents and Casinos were the last with 180 (46.3%) of the surveyed university students.

Among those who spent not more than 250 Kenya Shillings in betting, online football recorded the highest number 245 (63%), followed by other sports 239 (61.4%), next was home betting 215 (55.3%) and lottery was last 203 (52.2%). Among those who spent between 251 and 500 Kenya Shillings in betting, again football recorded the highest number 65 (16.7%) of respondents, followed by other sports 55 (14.1%). Lottery was next 39 (10%), followed by home betting 27 (7%) and Casinos were the last 22 (5.7%). Among those who spent between 501 to 750 Kenya Shillings in betting, online betting had the highest number 32 (8.2%), followed by other sports 28 (7.2%). Lottery was next 21 (5.4%), followed by home betting 16 (4.1%) and Casinos were the last 15 (3.9%). Among those who spent between 751 to 1000 Kenya Shilllings, other sports recorded the highest number 19 (4.9%) followed by online sports betting 17 (4.4%). Next was home betting 12 (3.1%), followed by lottery 10 (2.6%) and Casinos were the last 6 (1.5%). Among those who spent above 1000 Kenya Shillings in betting, online football had the highest number 11 (2.8%), followed by other sports 10 (2.6%). Next was home betting 6 (1.5%), followed by lottery 4 (1%) and Casinos were the last 3 (0.8%).

On prevalence of gambling among university students, amongst those who participated , online football recorded the highest numbers 370 (95.1%), followed by other sports 351 (90.2%), next was lotterry 277 (71.2%), followed by home betting 276 (71%) and the least was casinos 180 (46.3%). Amongst those placed bets on daily basis, online football had the highest number 117 (30.1%) while casinos had the least number 15 (3.9%) of

participants. Again, amongst those who placed bets ‘once a week’, online football betting recorded the highest number 95 (24.4%) while Casinos had the least number 20 (5.1%) of participants. Amongst those who engaged in betting ‘once a month’, home betting had the highest number 67 (17.2%) while online football had the least number 11 (2.8%) of participants. Lastly, amongst those who engaged in betting ‘less often’, lottery recorded the highest number 143 (36.8%) while online football had the least number 4 (1%) participants.

On the variable coping strategies of gambling among university students in Lang’ata constituency, Nairobi County, a minority 117 (30.1%) of respondents would leave betting and go home when a conflict arose during betting. Again, a majority 272 (69.9%) of respondents, when they faced conflict while betting they left for bar or club and danced the whole night. A majority 233 (59.9%) indicated that they would defend themselves by fighting back when when a conflict arose while betting. When a conflict arose while betting a majority of the respondents drew weapons for various reasons like defending themselves 272 (69.9%), scaring away others 234 (60.2%) and for feeling secure 272 (69.9%) among other. A majority 311 (79.9%) of respondents got angry when they realized they were losing a bet. Despite continuing to bet or thumbing the table 350 (90%) when realized they were losing a bet, some 311 (79.9%) got angry and others even became destructive 272 (69.9%). A majority 273 (70.2%) continued betting until they had no money. A similar majority 273 (70.2%) borrowed money from fellow gamblers even when they realized that they were losing, while others 272 (69.9%) were even ready to sell their belongings or family assets as betting securities to fellow gamblers when they realized that they were losing a bet.

The constructs (gender; age; university of study; level of academic pursuance and existence of betting policies) of the risk factors of gambling were statistically significant, at 0.01 level of significance. Correlation analysis also established that all the independent variables (types of gambling; prevalence of gambling; coping strategies; and risk factors of

gambling) had statistically significant relationship with the dependent variable (violent behaviour) of the study.

There was a positive general correlation (R= .858) between all the independent variables and the dependent variable of the study. The coefficient of determination (R-Square = .737) shows that the explanatory variables of the study managed to explain 73.7% variation in violent behaviour, as a result of gambling, among the university students. The remaining (26.3%) variation in violent behaviour could be attributed to other factors outside the scope of this study.

The model linking the studied explanatory variables to the dependent variable was statistiscally significant (F= 480.847; p = 0.000), at 0.05 level of significance. The resulting regression model indicated that for every unit change in violent behaviour among university students as a result of betting to be effected, there ought to be 0.266 unit change in types of gambling, 0.124 unit change in prevalence of gambling, 0.174 unit change in risk factors of gambling and 0.153 unit change in coping strategies, while holding other factors, not addressed by this study, constant ($\beta 0 = 2.754$). The optimal model of the study therefore remained as: VB = 2.754+0.266ToG+0.124PoG+0.174RFG+0.153CoS.

Hypothesis testing yielded a t-statistic score of 0.546 and a p-value of 0.585, at 0.05 level of signficance. Since a p-value of 0.585 > 0.05 level of significance, the null hypothesis, ‘there is no relationship between gambling addiction and violent behaviour among university students in Lang’ata Constituency’ failed to be rejected. The study concluded that there is relationship between gambling addiction and violent behaviour among university students in Lang’ata Constituency, at 95% level of significance.

CHAPTER 5

DISCUSSION

5.1 Introduction

This chapter restates the research questions or hypotheses, revisits the conceptual framework, discusses the findings of the study, and suggests improvement to BF Skinner's theory of learning.

5.2 Restated Research Question/Hypothesis

After the study hypothesis was analysed and interpretated, a verdict was drawn on the computed t-statistic (0.546) and p-value(0.585), at 0.05 level of significance. A verdict to 'not to reject' the null hypothesis was drawn because the computed p-value (0.585) is greater than the level of significance of 0.05. Therefore, the initial null hypothesis, 'there is no relationship between gambling addiction and violent behaviour among university students', failed to be rejected hence nullfying the need for an alternative hypothesis (H_I).

5.3 Revisiting Conceptual Framework

The general independent variable is gambling addiction while violent behaviour is the dependent variable. The study found that types of gambling, prevalence of gambling, coping strategies and risk factors of gambling were statistically significant in explaining variation in violent behaviour(physical fights, carrying of weapons, homicides and suicides) among university students who gambled. Figure 5.1 is the model depicting the established relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency, Nairobi County, Kenya.

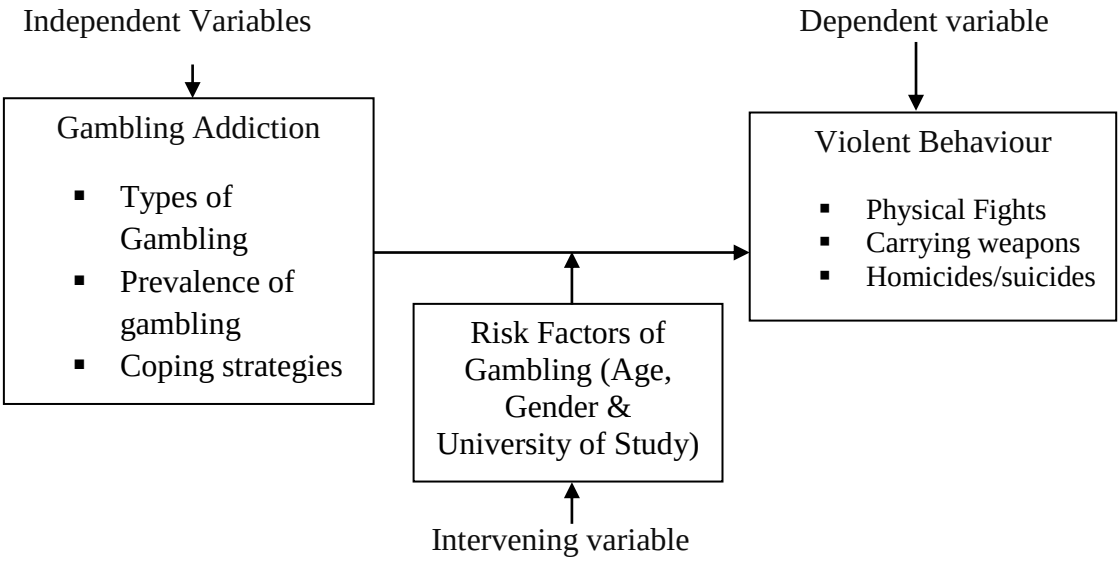

Figure 5.1: Optimal Model of the Study

There is a statistically significant relationship between the independent variable 'types of gambling' and violent behaviour among university students (r = 0.589; p = .040), at 0.05 level of significance. Online football betting recorded the highest number of participants 370 (95.1%) while Casinos had the least number 180 (46.3%) of respondents. These findings, however, contradict a study by Petry et al. (2014) which found that traditional gambling activities like lotteries, casinos, cards, and sporting were the mosty common types of betting. On the converse, this study has shown that online betting has overtaken the traditional gambling activities.

There was a statistically significant relationship between the independent variable 'prevalence of gambling' and violent behaviour among university students (r = .265; p = .046), at 0.05 level of significance. This current study found that online football betting had the highest number 117 or 30.1%) while casinos had the least number 15 (3.9%) of participants on daily basis. Despite different respondents having varying number of times in which they got involved in betting, it was evident that they involved themselves in a number of betting activities. The finding is confirmed by earlier studies by Koross (2016) and

Ssewanyana and Bitanihirwe (2018) which established that there was high prevalence of betting among young people in Kenya.

There was a statistically significant relationship between coping strategies and violent behaviour among university students ($r = .705$; $p = .037$), at 0.05 level of significance. This study found that a majority (350 or 90%) of respondents continued betting even when they realized they were losing a bet, while others (272 or 69.9%) were even ready to sell their belongings or family assets, as betting securities, to fellow gamblers when they realized that they were losing a bet. These results are supported by a study by Abbott (2017) which found that cognitive strategies aimed at counteracting the underlying irrational beliefs and attitudes about gambling that initiate and nurture undesirable behaviour may be used by problem gamblers.

There was also a statistically significant relationship between risk factors of gambling and violent behaviour among university students ($r = .214$; $p = .025$), at 0.05 level of significance. This study found that all the five constructs (gender, age, university of study, level of academic pursuance and betting policies) of risk factors of gambling were statistically significant indicators related to the relationship between gambling addiction and violent behaviour among university students. The results of this current study were confirmed by earlier studies (Blinn-Pike et al., 2007; Koross, 2016; Rossen et al., 2015) which found that gender, age and level of education were significant factors affecting gambling behaviour.

5.4 Discussion of Key Findings

The key findings of the study and the literature related to all the variables of the study are discussed under this section.

5.4.1 Types of Betting

As concerns the types of gambling that university students were involved in, online football betting recorded the highest number of participants with 370 (95.1%) of respondents, followed by other sports betting with 351 (90.2%) of the respondents. Lottery was the next with 277 (71.2%) of the respondents, followed by home gambling with 276 (71%) of the respondents and Casinos were the last with 180 (46.3%) of the surveyed university students. These results show that most university students participated in online football gambling while the least number of students involved themselves in casino betting. These findings could also imply that the high number of university students who participated in online football gambling could be attributed to perception that it was fairer than all other types of gambling. The assertion is supported in a study by Ssewanyana and Bitanihirwe (2018) which established that young people in townships in South Africa participated in gambling activities perceived to be fairer as opposed to lotteries and casinos which were perceived to be rigged and unfair.

In all betting activities, the highest number of university students spent not more than 250 Kenya Shillings and the lowest number spent more than 1,000 Kenya Shillings per a bet. For instance, those who spent not more than 250 Kenya Shillings in online betting were 245 or 63% whilst those who spent over 1,000 Kenya Shillings were 11 (2.8%). Evidently, in all the other betting activities there emerged a similar trend whereby, as the betting stakes increased there was, at least, a marginal decrease in number of participants involved in the betting activity. The finding could be attributed to the fact that most university students may not place high stakes per bet because the money used for betting may have been accrued from their meagre savings or allowances. Nevertheless, students placing higher stakes per bet may be spending monies intended for other purposes like college fees, boarding and meals (Koross, 2016). This assertion is consistent with a study by Kam et al. (2017) who found that

university students were amongst the most susceptible group to problems associated with excessive gambling. There was a statistically significant relationship between types of gambling and violent behaviour among university students($r = 0.589$; $p = .040$), at 0.05 level of significance.

5.4.2 Prevalence of Gambling

The findings of this studyshowed that different students had varying preferences on the number of times they participated in betting activities. For instance, online football recorded the highest numbers 370 (95.1%), followed by other sports 351 (90.2%), next was lotterry 277 (71.2%), followed by home betting 276 (71%) and the least was casinos 180 (46.3%). Moreover, different gamblers had varying frequiencies upon which they engaged in betting. For example, amongst those placed bets on daily basis, online football had the highest number 117 (30.1%) while casinos had the least number 15 (3.9%). Again, amongst those who placed bets ‘once a week’, online football betting recorded the highest number 95 (24.4%) while Casinos had the least number 20 (5.1%) of participants.

On the converse, among those who engaged in betting ‘once a month’, home betting had the highest number 67 (17.2%) while online football had the least number 11 (2.8%). Also, amongst those who engaged in betting ‘less often’, lottery recorded the highest number 143 (36.8%) while online football had the least number 4 (1%) participants. These findings are consistent with results of a study in Macau College University in China, which found that 42.7% gambled once a month, 20.8% gambled 2-3 times a month, 18.8% gambled between 1-2 times a week, 12.5% gambled once a day, 4.2% gambled 3-4 times a week, and 1% gambled 5-6 times a week (Kam et al., 2017).

This study established that there was a statistically significant relationship between the independent variable ‘prevalence of gambling’ and violent behaviour among university students (r = .265; p = .046), at 0.05 level of significance. The finding is consistent with earlier studies by Koross (2016) and Ssewanyana and Bitanihirwe (2018) which established that there was high prevalence of betting among young people in Kenya. In any way, despite different respondents having varying number of times in which they got involved in betting, it was evident that they involved themselves in a number of betting activities. This observation resonates with the finding by Petry et al. (2014) which established thatprevalence of gambling among university students in the developing world was increasing at a higher rate while that in the developed world appeared to have reached at the ceiling point.

5.4.3 Coping Strategies of Gambling

The findings of the study shows that a majority 311 (79.9%) of respondents did not stop gambling even when they realized that they were losing a bet. Again, another majority 273 (70.2%) of the respondents continued betting until they had no money even after realizing that they were losing a bet. A similar number 273 (70.2%) borrowed money from fellow gamblers even when they realized that they were losing a bet while 272 (69.9%) of the respondents were ready to sell their belongings or some family assets as betting securities to fellow gamblers when they realized that they were losing a bet. These responses are a clear indication that a majority of the studied university students did whatever was at their disposal to continue betting; a prerequisite for gambling addiction in most societies with the culture betting problems (Abott, 2017; Roberts et al., 2016).

This study established that there was a statistically significant relationship between coping strategies and violent behaviour among university students (r = .705; p = .037), at 0.05 level of significance. These results are supported by a study by Abbott (2017) which found

that cognitive strategies aimed at counteracting the underlying irrational beliefs and attitudes about gambling that initiate and nurture undesirable behaviour may be used by problem gamblers. The failure to choose to exit betting even when one anticipates unfavourable outcomes is what Kenny Rogers, in his track, The Gambler, advises as the central characteristic of a professional gambler, 'son I have made a life out of reading people faces…you should know when to walk and when to runaway' (Schlitz, 1976). The findings of this study are also consistent with a study by Ssewanyana and Bitanihirwe (2018) which underscored that only a few gamblers would admit that gambling is an addictive behaviour. How else would one explain why someone would continue betting even when they certainly knew that they were going to lose the bet?

5.4.4Risk Factors of Gambling

As concerns the variable risk factors of gambling, gender was found to be a statistically significant construct (r = .204**; p = .000), at 0.01 level of significance. Also age was a statistically significant construct of risk factors of gambling (r = -.297**; p = .000), at 0.01 level of significance. Likewise, university of study was a statistically significant construct of risk factors of gambling (r = .481**; p = .000), at 0.01 level of significance. Similarly, the level of academic pursuance was a statistically significant construct of risk factors of gambling (-.233**; p = .000), at 0.01 level of significance. Betting policies or services was also a statistically significant construct of risk factors of gambling (r = .144**; p = .004), at 0.01 level of significance.

The findings of this study were consisted with various studies which found that students of the male gender were more likely to gamble than their female counterparts (Atkinson et al., 2012; Blinn-Pike et al., 2007; Wong et al., 2013). Again, the findings were consistent with a study by Shead et al., (2012) which established that male students (62.9%)

in University of California were found to gamble more than the female students (36.8%). The findings resonated with a study by Williams et al. (2012) which established that young males between (18-30 years) were the highest problem gamblers. Moreover, the study by Kam et al. (2017) showed that there was a significant correlation between the initiation age to gambling and other risk-factors associated with gambling disorder. Koross (2016), however, noted that the assumption that some parents could unknowingly initiate their children to gambling by buying some scratch cards for them as well as allowing them to use their mobile phones for betting could explain increase in children betting. The observation is consistent with a study by Kam et al. (2017) which established that most young men were getting into gambling very early in life before the acceptable legal age (18 years) of gambling in most jurisdictions.

The findings of the study are also consistent with the observation by Kam et al. (2015) who noted that lack of infrustructure was abetting betting hence the need for preventive programmes focusing on the young people in learning institutions because they were at higher risks of engaging in gambling and violent behaviour than any other group in the society. These findings hints at the necessity for institutions of learning to have in place infrastructure that abets betting while promoting healthy betting practices among university students. The antidote could be a solution of addressing the problem of gambling because the country was increasingly becoming a betting nation (Koross, 2016).

There was also a statistically significant relationship between risk factors of gambling and violent behaviour among university students ($r = .214$; $p = .025$), at 0.05 level of significance. These results therefore show that the independent variable 'risk factors of gambling' was a significant predictor of violent behaviour among university students.

5.4.5 Prevalence of Violent Behaviour

This study found that a majority 224 (57.6%) of participants strongly agreed that when betting they walked away from a fight to avoid violent behaviour. A majority 257 (66.1%) disagreed that when betting and they experienced violent behaviour, they returned it back with violence. Again, a majority 244 (62.7%) disagreed that when betting and someone teased them they got violent to stop them. A majority 259 (66.6%) were in disagreement that they always carried a knife, a whip or a club when betting. These findings are consistent with observation by Robert Custer (as cited Koross, 2016) that those who are able to control their betting behaviour and are motivated by the urge to gain money but their recreational needs are just 'serious social gamblers'. Nevertheless, a study by Koross (2016) established that 26% of the respondents had, at one point or another, contemplated suicide as a result of indulgence in the game or activity of gambling. For example, when one student from Kabianga University committed suicide after losing a bet (Koross, 2016), such an incident of violence may be incomparable to other forms of violence like carrying knives, whips or guns because they do not necessarily culminate to loss of life.

According to Abbott (2017), carrying of weapons like knives, whips or even a gun could be precursory indications of violent behaviour. Thus the surveyed university students were less likely to engage in any form of violent behaviour because they refrained from carrying objects which may be used as weapons after unfavourable betting outcomes. The results of this current study do not provide sufficient evidence to infer that unhealthy gambling was found to be associated with more accepting attitudes towards gambling, gambling via machines or casinos, being worried about or trying to reduce or cease gambling, and having suicidal tendencies (Rossen et al., 2015).

5.4.6 Gambling Addiction and Violent Behaviour Literature

The findings of this study showed that there is a statistically significant relationship between the independent variable 'types of gambling' and violent behaviour among university students (r = 0.589; p = .040), at 0.05 level of significance. In particular, online football betting recorded the highest number 370 (95.1%) of participants while Casinos had the least number 180 (46.3%) of respondents. The finding is inconsistent with a study by Petry et al. (2014) which found that traditional gambling activities like lotteries, casinos, cards, and sporting were the mosty common types of betting; results of this study has shown that online betting has overtaken the traditional betting activities. Moreover, the results are partially with the study by Rossen et al. (2015) which found that unhealthy gambling was found to be associated with accepting attitudes towards gambling, gambling via machines or casinos, being worried about or trying to reduce or cease gambling, and having attempted suicide.

The results of the study showed that there is a statistically significant relationship between prevalence of gambling and violent behaviour among university students (r = .265; p = .046), at 0.05 level of significance. Further, the study found amongst those who bet on 'daily basis', online football betting had the highest number 117 (30.1%) while casinos had the least number 15 (3.9%) of participants. These results point out that the university students involved themselves in various betting activities in varying number of times. This observation is consistent with earlier studies (Koross, 2016; Ssewanyana & Bitanihirwe, 2018) which found that there was high prevalence of betting among young people in Kenya. Again, the results resonate with a study on the frequency among adolescents in New Zealand by Rosanen et al. (2015) which found that severe general violence, severe dating violence and carrying a weapon were significant correlates of gambling frequency among adolescents.

This study found that there is a statistically significant relationship between coping strategies and violent behaviour among university students (r = .705; p = .037), at 0.05 level of significance. For example, this study found that a majority 350 (90%) of respondents continued betting even when they realized they were losing. Moreover, 272 (69.9%) of the respondents were even ready to sell their belongings or family assets, as betting securities, to fellow gamblers when they realized that they were losing a bet. These findings resonate with a study by Abbott (2017) which found that cognitive strategies aimed at counteracting the underlying irrational beliefs and attitudes about gambling that initiate and nurture undesirable behaviour may be used by problem gamblers. Moreover, Slavin et al. (2013) observed that problem gambling was associated with physical fights and carrying of weapons amongst school students.

The results of the study show that there was a statistically significant relationship between risk factors of gambling and violent behaviour among university students (r = .214; p = .025), at 0.05 level of significance. All the five constructs (gender, age, university of study, level of academic pursuance and betting policies) of risk factors of gambling were statistically significant indicators related to the relationship between gambling addiction and violent behaviour among university students. The results of this current study were confirmed by earlier studies (Blinn-Pike et al., 2007; Koross, 2016; Rossen et al., 2015) which established that gender, age and level of education were significant factors affecting gambling behaviour.

The results of the study show that there is a positive general correlation (R= .858) between all the independent variables and the dependent variable of the study. The coefficient of determination (R-Square = .737) indicates that the explanatory variables of the study managed to explain 73.7% variation in violent behaviour, as a result of gambling, while the remaining 26.3% could be attributed to other factors outside the scope of this study. The

regression model indicates that for every unit change in violent behaviour among university students as a result of betting to be effected, there ought to be 0.266 unit change in types of gambling, 0.124 unit change in prevalence of gambling, 0.174 unit change in risk factors of gambling, and 0.153 unit change in coping strategies, while holding other factors, not addressed by this study, constant ($\beta 0 = 2.754$). The four explanatory variables are significant predicators of violent behaviour among university students because their p-values, were less than 0.05 level of significance. Hypothesis testing led to acceptance of the null hypothesis because the computed p-value (0.585) was greater than the level of significance of 0.05. This study therefore concluded that 'there is no relationship between gambling addiction and violent behaviour among university students.' This hypothesis contradicts earlier studies (Abbott, 2017; Ssewanyana & Bitanihirwe, 2018) which found that gambling behaviour significantly affected the level of engagement in violent behaviour.

5.5 Suggestions on Application of Theory

This study has yielded high empirical validity for its theoretical model that investigated the relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency. The findings supported Burrhus Frederic Skinner's theory of learning or operant conditioning which emphasizes how individuals learn behaviours which yield positive outcomes through reward while avoiding those which produce negative outcomes after punishment. Skinner's model of learning implied that reinforcement, positive or negative, of betting increases the probability of any response being elicited thus explaining any subsequent persistence in betting. The results of the study supported this theoretical evidence because the respondents were not aware of policies or services guiding betting activities in their respective universities. Skinner's learning theory offers a strong theoretical model upon which universities' administration could be utilized by

formulating and implementing betting policies which reduce or put to an end betting among university students. Betting policies which promote responsible gambling among university students would provide a theoretical framework upon which betting evolves to a healthy gaming activity.

CHAPTER 6

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter provides the summary of the findings, conclusions and recommendations.

6.2 Summary

The study focused on the relationship between gambling addiction and violent behaviour among university students in Lang'ata constituency, Nairobi County. The study was carried out in four universities namely: Multimedia University (MMU), Catholic University of Eastern Africa (CUEA), Co-operative University of Kenya (CUK) and Jomo Kenyatta University of Agriculture and Technology (JKUAT). The study only included university students who gambled. The study recorded a response rate of 99.4%.

Out of 389 respondents, 254 (65.3%) were male while 135 (34.7%) were female. The respondents between age brackets 18-21 years were highest 289 (74.3%) while those aged 34 years and above were the least 3 (0.8%). MMU had the highest number 128 (32.8%) of students who gambled, followed by students in CUEA 117 (30.1%), CUK was third 89 (22.9%) and JKUAT had the least number 55 (14.1%) of students who involved themselves in betting activities. Certificate courses recorded the highest number of respondents 161 (41.4%) who gambled, followed by diploma courses 119 (30.6%), and bachelor's degrees recorded the least number of respondents 109 (28%) who gambled.

Online football betting recorded the highest number of participants 370 (95.1%), followed by other sports betting 351 (90.2%), lottery was the next 277 (71.2%), followed by home gambling 276 (71%) and Casinos were the last 180 (46.3%). In all betting activities, the

highest number of university students spent not more than 250 Kenya Shillings and the lowest number spent more than 1,000 Kenya Shillings per a bet. There was a statistically significant relationship between types of gambling and violent behaviour among university students($r = 0.589$; $p = .040$), at 0.05 level of significance.

Different students had varrying preferences on the number of times they participated in betting activities. Online football recorded the highest numbers 370 (95.1%), followed by other sports 351 (90.2%), next was lotterry 277 (71.2%), followed by home betting 276 (71%) and the least was casinos 180 (46.3%). There was also significant differentials on the number of times gamblers engaged in different betting activities. There was a statistically significant relationship between prevalence of gambling and violent behaviour among university students ($r = .265$; $p = .046$), at 0.05 level of significance.

As regards the coping strategies, the results show that a majority 311 (79.9%) of respondents did not stop gambling even when they realized that they were losing a bet. A majority 273 (70.2%) too borrowed money from fellow gamblers and even when they realized that they were losing, a majority 272 (69.9%) they were ready to sell their belongings or some family assets as betting securities to fellow gamblers when they realized that they were losing a bet. There was a statistically significant relationship between coping strategies and violent behaviour among university students ($r = .705$; $p = .037$), at 0.05 level of significance.

Gender was found to be a statistically significant construct of risk factors of gambling ($r = .204^{**}$; $p = .000$), at 0.01 level of significance. Age was also a statistically significant construct of risk factors of gambling ($r = -.297^{**}$; $p = .000$), at 0.01 level of significance. University of study was too a statistically significant construct of risk factors of gambling ($r = .481^{**}$; $p = .000$), at 0.01 level of significance. Similarly, the level of academic pursuance was a statistically significant construct of risk factors of gambling ($-.233^{**}$; $p = .000$), at 0.01

level of significance. Lastly, betting policies or services was also a statistically significant construct of risk factors of gambling (r = .144**; p = .004), at 0.01 level of significance. There was a statistically significant relationship between risk factors of gambling and violent behaviour among university students (r = .214; p = .025), at 0.05 level of significance. These findings are consistent with earlier studies (Abbott, 2017; Ssewanyana & Bitanihirwe, 2018) which highlighted the risk factors of gambling and precursory indicators of violent behaviour.

The coefficient of determination (R-Square = .737) shows that explanatory variables of the study managed to explain 73.7% variation in violent behaviour, as a result of gambling, while the remaining 26.3% could be attributed to other factors outside the scope of this study. All the four explanatory variables of the study were found to be significant predicators of violent behaviour among university students because their p-values, were less than 0.05 level of significance. Hypothesis testing led to aaceptance of the null hypothesis because the computed p-value (0.585) was greater than the level of significance of 0.05. The null hypothesis that ‘there is no relationship between gambling addiction and violent behaviour among university students’, failed to be rejected. The null hypothesis contradicts studies by Abbott (2017) and Ssewanyana and Bitanihirwe (2018) which observed that gambling behaviour significantly affected the level of engagement in violent behaviour.

6.3 Conclusions

Online footbal betting recorded the highest number of university students who participated in the study while Casino betting recorded the least number of university students who participated in this study. Earlier studies had shown that traditional gambling activities like lotteries, casinos, cards, and sporting were the most dominan types of betting. However, this study has demonstrated that online betting has overtaken the traditional betting activities. The popularity of online football betting among the university students could be attributed to its perception as fairer than other types of gambling. There was also widespread

variation in the amounts of money spent on different types of betting activities. In general, as the amonut of monies spent on a particular betting activity increased so did the number of those who engaged in betting decreased.

Despite different respondents having varrying number of times in which they got involved in betting, it was evident that they involved themselves in a number of betting activities.Most university students involved themselves in various betting activities. Different university students also had varrying preferences on the number of times they participated in betting activities.

The results of the study indicates that a majority of university students could be classified as ‘professional gamblers’ because they chose to exit betting when they anticipated unfavourable outcomes of their bets. This assertion is supported by Kenny Rogers, in his track, The Gambler, where a passenger meets a gambler in a train and after a while conversation ensued, ‘son I have made a life out of reading people faces…you should know when to walk and when to runaway’ (Schlitz, 1976). A central characteristic of a ‘professional gambler’ is the ability to learn to predict, with high precision, the outcome of a bet. Most university students who participated in this study could be classified as ‘serious social gamblers’ because they could control their betting habits and were more motivated by their recreational needs than the urge to gain money.

The surveyed university students were also less likely to engage in any form of violent behaviour because they refrained from carrying objects which may be used as weapons after unfavourable betting outcomes. This was a conflicting view because most students also shared a contrary view that they drew a weapon when a conflict arose during betting but for various reasons. Nevertheless, these responses are a clear indication that a majority of respondents did whatever was at their disposal to continue betting; a prerequisite for gambling addiction in most societies with the culture betting problems.

Gender, age, university of study, level of academic pursuance and betting policies were statistically significant constructs of risk factors of gambling. Being a student, male or female, and of young age predisposes one to higher risks of engaging in various betting activities and consequently violent behaviour.

It was also found that the explanatory variables (types of gambling, prevalence of gambling, coping strategies and risk factors of gambling) considerably explained variation in violent behaviour among the university students. The resulting regression model established that there was a statistically significant relationship between gambling addiction and violent behaviour among university students. The null hypothesis was rejected andan alternative hypothesis, 'there is relationship between gambling addiction and violent behaviour among university students', was adopted.

6.4 Recommendations

It is evident that most university students engaged in different types of betting, however, online football betting was the most preferred betting activity. Moreover, most university students placed the low-value stakes in bets, a behaviour associated with low income status of university students. Despite that replacement of low-stake betting activities with very-high stake gambling activities may affect taxes for the government, such measures would largely limit most low-income individuals like students from accessing most betting activities.

High involvement in betting among most university students is a clear indication that betting was increasing at an alarming rate among university student.There is no doubt that when people are made to believe that income from chancing activities can economically sustain them, then there is a major problem facing such a population. It is imperative that in as much as the government and other stakeholders devises feasible programmes for assisting young people to earn some income to economically sustain themselves, the young people

should take responsibility of their lives by perhaps engaging in some part-time low income jobs instead of letting their lives drift to the whim of gambling chances.

Although earlier studies mostly focused on gambling addiction in a single institution of learning, this study focused on university students in four universities within a similar locality in Nairobi. As such, the results may be skewed because of the common source biasness and the need to cover a wider ground of students in other universities and Technical and Vocational Education and Training (TVET) institutions. This study can in future be replicated in other institutions to test any peculiarity.

This study relied on self-rating of the respondents within institutions of higher education in Kenya which sometimes is reported to be biased. Future studies may consider an experimental study to investigate causality of gambling addiction and violent behaviour with higher precision and accuracy. Such research design will help in broadening the available literature on the relationship between gambling addiction and violent behaviour among university students.

The study applied correlational survey design which is commonly used in social studies owing to its very nature of establishing strengths of relationships. Nevertheless, this design may not provide causality of gambling addiction and violent behaviour among university students hence experimental design may be more appropriate in future studies.

The use of a revised standardized questionnaire with only quantitative questions may have biasedly tilted the outcome of the study. Quantitative questions cannot sufficiently offer all the probable alternative responses. Future studies mayconsider triangulating qualitative and quantitative approaches in investigating the relationship between gambling addiction and violent behaviour among university students.

A meta-analysis study of secondary data on betting-related dating violence may explain the relationship between betting and the pervasive trend of dating violence among

university students in Kenya. The findings of such a study could provide critical information in developing betting programmes and services that promote healthy dating among university students in Kenya.

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APPENDIX 1: PARTICIPANTS' INFORMED CONSENT FORM

I, _____, a student in _____, with full knowledge of the purpose of the study by KIMAU FIDELIS, a student pursuing a Degree in Master of Art in Counselling Psychology, Tangaza University College-CUEA, I voluntarily agree to participate in this study.

Participant's Signature_____

I, KIMAU FIDELIS, agree to adhere to professional academic regulations on research as well as uphold the agreement expressed in this document.

Signature_____

APPENDIX 2: QUESTIONNAIRE

(For Gambling Students in Universities in Lang'ata Constituency)

The questionnaire instrument is designed by Kimau Fidelis, a student pursuing a Master of Art Degree in Counselling Psychology, Tangaza University College- CUEA. The questionnaire is meant to collect data on the relationship between gambling addiction and violent behaviour among university students in university students in Lang'ata Constituency. The respondents are invited to honestly answer all the questions. Participation in this study is voluntary and there is no monetary compensation. The study is only for those who are 18 years and above. The respondents are free to skip any question (s) that they do not feel comfortable. The respondents may opt out of the process at any given time. The respondents are required to have a biro-pen for completing the questionnaire. All collected data are exclusively to be used for academic purposes and therefore will be treated with utmost anonymity and confidentiality.

PART 1: BACKGROUND INFORMATION

Please mark (indicate) ☑ appropriate responses in the boxes (spaces) provided.

1. Gender of the respondent

Male [ ] Female [ ]

2. Age (in years): 18 - 21 [ ] 22 - 25 [ ] 26-29 [ ] 30 - 33 [ ] 34 & above [ ]

3. Which University are you currently studying in? Catholic University of Eastern Africa [ ] JKUAT-Karen Campus [ ] Co-operative University [ ] Multimedia University [ ]

4. Current Academic Pursuance: Certificate [ ] Diploma [ ] Bachelor's Degree [ ]

5. Does your university have student policies or services regarding gambling? Yes [ ] No [ ]

PART 2: TYPES AND PREVALENCE OF GAMBLING AMONG UNIVERSTIY STUDENTS

Instructions: Circle the appropriate response in 5a and 5b but write the exact amount in 5c.

	Lottery	5a. In the past 12 months, have you ever participated in:		5b. If yes in 5a, how often do you participate in the gambling activities (Choose one response across per row where applicable)					5c. If yes in 5a, approximately how much do you place per gamble? (KSH)
		Yes	No	Daily	4 times a week	Once a week	Once a month	Less often	
6	Charity Sweepstake	0	1	1	2	3	4	5	
7	Shabiki	0	1	1	2	3	4	5	
8	Lotto	0	1	1	2	3	4	5	
9	Pambazuka	0	1	1	2	3	4	5	

Instructions: Circle the appropriate response in 5a and 5b but write the exact amount in 5c.

	Casinos	5a. In the past 12 months, have you ever participated in:		5b. If yes in 5a, how often do you participate in the gambling activities (Choose one response across per row where applicable)					5c. If yes in 5a, approximately how much do you place per gamble? (KSH)
		Yes	No	Daily	4 times a week	Once a week	Once a month	Less often	
10	Cards	0	1	1	2	3	4	5	
11	Pool-Table	0	1	1	2	3	4	5	
12	Dices	0	1	1	2	3	4	5	
13	Poker/slot machines	0	1	1	2	3	4	5	

Instructions: Circle the appropriate response in 5a and 5b but write the exact amount in 5c.

	Gambling at Home	5a. In the past 12 months, have you ever participated in:		5b. If yes in 5a, how often do you participate in the gambling activities (Choose one response across per row where applicable)					5c. If yes in 5a, approximately how much do you place per gamble? (KSH)
		Yes	No	Daily	4 times a week	Once a week	Once a month	Less often	
14	Draught	0	1	1	2	3	4	5	
15	Chess	0	1	1	2	3	4	5	
16	Marbles	0	1	1	2	3	4	5	
17	Karata	0	1	1	2	3	4	5	

Instructions: Circle the appropriate response in 5a and 5b but write the exact amount in 5c.

	Sports Gambling	5a. In the past 12 months, have you ever participated in:		5b. If yes in 5a, how often do you participate in the gambling activities (Choose one response across per row where applicable)					5c. If yes in 5a, approximately how much do you place per gamble? (KSH)
		Yes	No	Daily	4 times a week	Once a week	Once a month	Less often	
18	Football	0	1	1	2	3	4	5	
19	Horse-riding	0	1	1	2	3	4	5	
20	Bull-fighting	0	1	1	2	3	4	5	
21	Cock-fighting	0	1	1	2	3	4	5	

Instructions: Circle the appropriate response in 5a and 5b but write the exact amount in 5c.

	Online football gambling	5a. In the past 12 months, have you ever participated in:		5b. If yes in 5a, how often do you participate in the online gambling activities (Choose one response across per row where applicable)					5c. If yes in 5a, approximately how much do you place per gamble? (KSH)
		Yes	No	Daily	4 times a week	Once a week	Once a month	Less often	
22	Sports Pesa	0	1	1	2	3	4	5	
23	Bet yetu	0	1	1	2	3	4	5	
24	Betway	0	1	1	2	3	4	5	
25	Betin	0	1	1	2	3	4	5	
26	Elitebet	0	1	1	2	3	4	5	
27	Justbet	0	1	1	2	3	4	5	
28	Eazibet	0	1	1	2	3	4	5	

PART 4: COPING STRATEGIES

Instructions: The items provided below measure the coping strategies of gambling. Tick the appropriate response in the box at right-hand side,i.e. 0 = Yes; 1 = No

		Yes	No
29	When I face conflict while betting, I stop gambling and go home	0	1
30	When I face conflict while betting, I go to the bar or club and dance the whole night	0	1
31	When I face conflict while betting, I defend myself by fighting back	0	1
32	When I face conflict while betting, I draw out a weapon to defend myself	0	1
33	When I face conflict while betting, I draw out a weapon to scare the other away	0	1
34	When I face conflict while betting, I draw out a weapon to feel secure	0	1
35	When I am losing a bet, I get angry	0	1
36	When I am losing a bet, I bet or thumb the table	0	1
37	When I am losing a bet, I become destructive or disruptive	0	1
38	When I am losing a bet, I stop gambling	0	1
39	When I am losing a bet, I continue losing till I have no money	0	1
40	When I am losing a bet, I borrow money from my fellow gamblers	0	1
41	When I am losing a bet, I am ready to sell my belongings to fellow gamblers or have some family assets as my betting securities	0	1

PART 5: REVISED ATTITUDE TOWARDS VIOLENCE SCALE

This section investigates general opinion concerning the attitudes towards violence. Indicate the extent to which you agree or disagree with the given statements. Tick the box with the number that represents your opinion according to the level of your agreement, i.e., 1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree nor Disagree; 4 = Agree; 5 = Strongly Agree.

Question: How much do you agree or disagree with the following statements if you were involved in gambling?

		Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
42	When I am gambling I walk away from a fight to avoid violent behaviour	1	2	3	4	5
43	When I am gambling I am constantly aware that there could be arousal of violent behaviour	1	2	3	4	5
44	When I am gambling and I experience violent behaviour, I return it back with violent behaviour	1	2	3	4	5
45	When I am gambling and someone teases me, I get violent with them to stop them	1	2	3	4	5
46	When I am gambling, I can easily control myself and control others not to indulge in violence	1	2	3	4	5

47	When I am gambling, I refuse to fight and I am not afraid of my friends thinking that I am a coward	1	2	3	4	5
48	When I am gambling, I always carry a knife, a whip or a club					

PART 6: DSM V PATHOLOGICAL GAMBLING DIAGNOSTIC SCALE

These questions measure persistent and recurrent maladaptive gambling behaviour. Tick the box with the number that represents your opinion according to the level of your agreement, i.e. 1 = Never; 2 = Sometimes; 3 = Most of the Times; 4 = Almost Always; and 5 = I Do Not Know.

Question: When you think of the past 12 months, how often?

		Never	Sometimes	Most of the time	Almost always	I do not know
49	Do you gamble even though you are losing your money?					
50	Do you insist on gambling your finances away even though you are getting into debt?					
51	Have you gone back another day to try to win back the money you lost?					
52	Have you borrowed money or sold anything to get money to gamble?					

53	Have you felt that you might have a problem with gambling?					
54	Have people criticized you or become your enemy because they believe you are losing yourself to gambling?					
55	After you have lost in betting, do you feel guilty or uneasy being with others who do not gamble?					
56	Has betting caused you any health problems like stress or anxiety?					

57. Have you ever been treated by a professional for a betting problems?

Yes [ ]

No [ ]

I do not know [ ]

58. If 'YES' to Q57 above, provide a list of gambling treatment services or assistance resources that you received.....

If 'NO' or 'I do not know' to Q57, please tick here [ ]

Thank you

APPENDIX 3: WORK PLAN

As shown in the Table below, the study on the relationship between gambling addiction and violent behaviour among university students in Lang'ata constituency, Nairobi County, Kenya.

Activity	Tasks	Duration
Proposal Preparation	Review of literature, proposal write-up, submission of the proposal to the university assigned supervisors and defence.	June 10th 2018 – October 29th 2018
Implementation of corrections	Implementation of examiners corrections and submission of corrected copy to the department	November 1st - 11th March 2019
Data Collection	Pretesting, administration of the questionnaire, completing of the questionnaire, collection of the questionnaire & data analysis	March 15th - April 7th 2019
Thesis preparation	Thesis write-up, submission of the thesis to the supervisors, implementation of the corrections, preparation of the thesis for defence, implementation of corrections from the defence & submission of the final thesis	April8th – January 15th 2020

APPENDIX 4: BUDGET

As shown in the Table below, the estimated total budget for the study was Kenya Shillings 59, 916. I funded the study from my personal savings.

Estimated Budget Table

Item	Quantity	Amount in (KSH)	Amount	
Printing of proposal	7 copies	@ 900	6,300	00
Binding	6 copies	@80	480	00
Printing pre-testing questionnaire	25 copies	@30	750	00
Printing of the questionnaire	120 copies	@30	3,600	00
Research assistants fee	2 days	@ 1,200 per day	4,800	00
Printing of thesis	6 copies	@2,000	12,000	00
Binding of thesis	6 copies	@500	3,000	
Stationery			15,000	00
Transport			3,000	00
Study permit			1,000	00
Sub-total			49,930	
Contingencies @20% of thesis budget			9,986	00
Grand total			59,916	00

APPENDIX 5: RESEARCH PERMIT REQUEST LETTER

TANGAZA UNIVERSITY COLLEGE

The Catholic University of Eastern Africa

DIRECTORATE OF POSTGRADUATE STUDIES & RESEARCH

E-mail: dir.pgsr@tangaza.ac.ke **Website:** www.tangaza.ac.ke

OUR Ref: DPGSR/ERC/03/2019 **Date:** 28th March 2019

To The Commission Secretary,
National Council for Science, Technology and Innovation
P.O. Box 30623,
Nairobi – Kenya.

Dear Sir/Madam,

Re: Research Permit for Kimau Fidelis Muthenya

This is to confirm to you that the person named above is a student at Tangaza University College (TUC). He is registered in the Institute of Youth Studies (Reg. No 15060Y) and he is pursuing a degree in Master of Art in Counseling Psychology.

Kimau has met all our provisional academic requirements leading to data collection. However, he cannot proceed to the field before he gets a Research Permit from the National Council of Science, Technology and Innovation (NACOSTI). Kindly assist him to process the permit for the same purpose.

Thanking you in advance for your cooperation

Yours sincerely,

Director - Research & Postgraduate Studies
Tel: 0714 610 777 / 0733 685 059
28 MAR 2019
Sign:.....
TANGAZA UNIVERSITY COLLEGE

Dr. Daniel M. Kitonga (Ph.D.)
Director, Postgraduate Studies & Research

CC:
Dr. Lucy N. Njiru –Programme Leader, MA Counseling Psychology (IYS)

P.O. Box, 15055 - 00509 Langata, Nairobi Kenya
Tel: 254 20 8067667/ 0732 897000/ 0733 685059/ 0722 204724/ 0714 610777
Email: inquiries@tangaza.org
Website: www.tangaza.org

APPENDIX 6: TUC RESEARCH AUTHORIZATION PERMIT

TANGAZA UNIVERSITY COLLEGE

The Catholic University of Eastern Africa

DIRECTORATE OF RESEARCH & POSTGRADUATE STUDIES

E-mail: dir.pgsr@tangaza.ac.ke **Website:** www.tangaza.ac.ke

OUR Ref: DPGSR/ERC/03/2019 **Date:** 28th March 2019

Kimau Fidelis Muthenya
Institute of Youth Studies
School of Arts and Social Sciences
Tangaza University College

Dear Kimau,

RE: RESEARCH AUTHORISATION FOR KIMAU FIDELIS MUTHENYA, REG. NO. 15060Y

Reference is made to your letter dated 15th March 2019 requesting for ethical review of your research tool to carry out a research on "*Relationship between Gambling Addiction and Violent Behavior among University Students within Lang'ata Constituency*".

I am pleased to inform you that, the ethics review committee has authorized your request subject to implementing the suggested corrections by the review committee. The committee also advises that before you proceed to collect data, you get authorisation/ research permit from NACOSTI for the same.

This approval is valid for one year from 28th March 2019.

Please, ensure that after the data analysis and final write up, you submit a hard bound copy of the thesis to the Director of Research – Tangaza University College for records.

Yours sincerely,

Director - Research & Postgraduate Studies
Tel: 0714 610 777 / 0733 685 059
28 MAR 2019
Sign:.....
TANGAZA UNIVERSITY COLLEGE

DR. DANIEL M. KITONGA (PhD)
Director, Research & Postgraduate Studies
Tangaza University College

CC: Dr. Lucy N. Njiru – Programme Leader, MA Counseling Psychology, IYS

P.O. Box, 15055 - 00509 Langata, Nairobi Kenya
Tel: 254 20 8067667/ 0732 897000/ 0733 685059/ 0722 204724/ 0714 610777
Email: inquiries@tangaza.org
Website: www.tangaza.org

APPENDIX 7: NACOSTI RESEARCH AUTHORIZATION LETTER

(TO THE NAIROBI COUNTY COMMISSIONER)

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/57985/29305**

Date: **12th April, 2019**

Kimau Fidelis Muthenya
Tangaza University College
P.O. Box 15055-0509
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Relationship between gambling addiction and violent behavior among university students within Langata Constituency"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **12th April, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

COUNTY COMMISSIONER
NAIROBI COUNTY
15/4/2019

The County Director of Education
Nairobi County.

APPENDIX 8: NACOSTIC RESEARCH LICENSE

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights thereunder are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The License does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
7. The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.

National Commission for Science, Technology and Innovation
P.O. Box 30623 - 00100, Nairobi, Kenya
TEL: 020 400 7000, 0713 788787, 0735 404245
Email: dg@nacosti.go.ke, registry@nacosti.go.ke
Website: www.nacosti.go.ke

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEARCH LICENSE

Serial No.A 24038

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:
MR. KIMAU FIDELIS MUTHENYA
of TANGAZA UNIVERSITY COLLEGE , 15055-509 Langata,has been permitted to conduct research in *Nairobi County*

on the topic: *RELATIONSHIP BETWEEN GAMBLING ADDICTION AND VIOLENT BEHAVIOR AMONG UNIVERSITY STUDENTS WITHIN LANGATA CONSTITUENCY*

for the period ending:
12th April,2020

Permit No : NACOSTI/P/19/57985/29305
Date Of Issue : 12th April,2019
Fee Recieved :Ksh 1000

Applicant's Signature

Director General
National Commission for Science, Technology & Innovation

APPENDIX 9: RESEARCH AUTHORIZATION LETTER A

(TO REGIONAL DIRECTOR AND SUB-COUNTY DIRECTOR OF EDUCATION)

Republic of Kenya
MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING & BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
Telephone; Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

When replying please quote

REGIONAL DIRECTOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

Ref: RCE/NRB/GEN/1/VOL. 1

DATE: 15th April, 2019

Kimau Fidelis Muthenya
Tangaza University College
P O Box 15055-0509
NAIROBI

Authorized
For: SUB-COUNTY DIRECTOR OF EDUCATION LANGATA SUB-COUNTY P. O. Box 74629-00200, NAIROBI.
16/4/19

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on "**Relationship between gambling addiction and violent behavior among university students within Langata Constituency**".

This office has no objection and authority is hereby granted for a period ending **12th April, 2020** as indicated in the request letter.

Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

REGIONAL DIRECTOR OF EDUCATION NAIROBI
15 APR 2019
MINISTRY OF EDUCATION P.O. Box 74629, NAIROBI

SHINU SINTAYO
FOR: REGIONAL DIRECTOR OF EDUCATION
NAIROBI

C.C

Director General/CEO
National Commission for Science, Technology and Innovation
NAIROBI

ISO 9001 BUREAU VERITAS Certification

APPENDIX 10: RESEARCH AUTHORIZATION LETTER B
(TO DEPUTY COUNTY COMMISIONER AND ASSISTANT CHIEF LANG'ATA SUB-LOCATION)

THE PRESIDENCY
MINISTRY OF THE INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT

Physical Address: Wilson Airport, along Langata Rd.
Email Address: dclangata@gmail.com
Telephone: 020-2629946

When replying please quote:

DEPUTY COUNTY COMMISSIONER
LANGATA SUB-COUNTY
P.O. Box 30124-00100
NAIROBI

Ref: LGT/ED/10/9(46)

16th April, 2019

Kimani Fidelis Muthenya
Tangaza University College
Po Box 15055-0509
NAIROBI

RE: RESEARCH AUTHORIZATION

Reference is made to the letter Ref: **NACOSTI/P/19/57985/29305** dated **12th April, 2019** from the Director General of the National Commission for Science, Technology and Innovation, addressed to Kamau Fidelis Muthenya the above subject.

Authority is hereby granted to you to undertake research on "***Relationship between gambling addiction and violent among university students within Langata Sub County*** "for the period ending 12th April 2020.

DEPUTY COUNTY COMMISSIONER LANGATA COUNTY

J .M. NGENDYI
For: DEPUTY COUNTY COMMISSIONER

Cc: chief Langata
: Assistant chief Langata

Received on 26/04/2019

ASSISTANT CHIEF
NAIROBI SUB-LOCATION
LANGATA LOCATION
DATE 26/04/2019

APPENDIX 11: JKUAT RESEARCH APPROVAL LETTER

Writon
Date : 17 / 04 / 2019
Page No.: 1

TO WHOM IT MAY CONCERN

SUBJECT : KIMAU FIDELIS MUTHENYA

The above person is permitted to access students at his and their convenience, for the purpose of collecting research.

ASSISTANT DEAN –
Marseline Robich

DEAN OF STUDENTS
17 APR 2019
P.O. Box 62000-00200, NBI
www.jkuat.ac.ke
JKUAT KAREN CAMPUS

APPENDIX 12: MMU RESEARCH APPROVAL LETTER

MULTIMEDIA UNIVERSITY OF KENYA
P .O. BOX 15653 - 00503, NAIROBI, KENYA.
(MMU is ISO 9001:2008 Certified)

OFFICE OF THE DEPUTY VICE CHANCELLOR (AA, R&I)

REF: MMU/DVC AA R&I/RESEARCH/VOL.2 18th April, 2019

Mr. Kimau Fidelis Muthenya
Tangaza University College
P O Box 15055 - 00509
NAIROBI

Dear Mr. Kimau

RE: REQUEST FOR COLLECTION OF DATA IN THE UNIVERSITY

Reference is made to the above subject matter pursuant to your letter dated 16th April, 2019 and in which you sought permission for data collection from the University.

We note that you are a registered Master of Arts student at Tangaza University College and we are pleased to inform you that your request has been granted and permission approved for collection of data within Multimedia University of Kenya, Main Campus.

You are required to report to the Registrar Administration before you commence your data collection. You will be required to observe the University Rules and Regulations. Upon completion of your study, ensure that you submit a copy of your Project Report/Dissertation/Thesis to Multimedia University of Kenya.

We hope that our support will contribute to the success of your career development.

Yours faithfully,

MULTIMEDIA UNIVERSITY OF KENYA
P. O. Box 15653 - 00503, NAIROBI
23 MAR 2019
DEPUTY VICE CHANCELLOR, ACADEMIC AFFAIRS RESEARCH & INNOVATION

PROF. PAUL N. MBATIA PhD.
Deputy Vice-Chancellor (AA, R&I)

C.c. Vice Chancellor
Deputy Vice Chancellor – AF&P
Reg. Administration
Ag. Registrar, (R&I)
Ag. Librarian
Chief Security Officer

Magadi Road, off Bomas of Kenya
P.O. Box 15653-00503, Nairobi, Kenya
Tel: +254 20 207 1391
Riding on Technology, Inspiring Innovation
Email: vc@mmu.ac.ke
website: www.mmu.ac.ke
Fax: +254 20 2071247

APPENDIX 13: CUEA RESEARCH APPROVAL LETTER

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

The Office of Deputy Vice Chancellor
Research, Innovation and Partnership

TO WHOM IT MAY CONCERN

April 24, 2019

Dear Sir/Madam,

RE: MR. KIMAU FIDELIS MUTHENYA'S DATA COLLECTION AT CUEA

Mr. Kimau F. Muthenya is a registered Master of Arts in Counseling Psychology student at Tangaza University College (Reg. No. 15060Y). He has sampled CUEA as one of the Universities to be included in the data collection for his Masters research entitled: "*The Relationship between gambling addiction and violent behavior among university students within Lang'ata constituency*. In his letter dated April 16, 2019, he requested to be allowed to collect data from CUEA students consistent with the sampling procedure in his Masters proposal and the approved data capture tool (attached). The Tangaza University College Ethics Review Committee (TUCREC) approved his research proposal. He also has the research authorization from the National Commission for Science and Technology (NACOSTI) through the Research Permit No. NACOSTI/P/19/57985/29305.

Mr. Kimau is therefore authorized to collect data from the aforesaid study population in CUEA between April 27th To June 27th 2019. Mr. Kimau will undertake to adhere to all the ethical considerations in conducting the research and respect the values upheld by the Catholic University of Eastern Africa. In addition to these conditions for data collection, Mr. Kimau shall share with the CUEA Library his final report of the findings and publications associated with this study. The Catholic University of Eastern Africa reserves the right to cancel this authorization if the researcher flouts the parameters of research ethics and integrity.

Your assistance to facilitate his data collection will be highly appreciated.

Yours sincerely,

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA
DVC/RESEARCH, INNOVATION & PARTNERSHIP
P.O. BOX 62157 - 00200, NAIROBI.

Prof. dr. Benson A. Mulemi
Ag. DVC/Research, Innovation and Partnerships
Research Coordinator/Directorate of Research & Innovation

c.c DVC/Academic Affairs
Dean of Students
University Librarian
Chief Security Officer

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA (CUEA) P.O. BOX 62157 00200 Nairobi – KENYA
Tel: 020-2525811-5, 8890023-4, +254-20-2525811-5, Email: dvcresearch@cuea.edu Website: www.cuea.edu

APPENDIX 14: CUK RESEARCH APPROVAL LETTER

THE CO-OPERATIVE UNIVERSITY OF KENYA

P.O BOX 24814-00502, Karen-Nairobi Tel:020-2430127/2679456 0724311606
Email:dvc-fpa@cuk.ac.ke Website:www.cuk.ac.ke

OFFICE OF THE DEPUTY VICE CHANCELLOR
FINANCE, PLANNING & ADMINISTRATION

CUK /A11 VOL.V **6TH MAY, 2019**

Mr. Kimau Fidelis Muthenya,
C/o Tangaza Universiry
P.O Box 15055-00500,
LANGATA - NAIROBI.

Dear Mr. Muthenya,

RE: REQUEST FOR PERMISSION TO COLLECT DATA

Reference is made to your letter dated 10th April, 2019 received at The Co-operative University of Kenya (CUK) on 26th April, 2019, which you sought permission to collect data for your Masters research entitled **"Relationship between gambling addiction and violent behavior among university students within Langata Constituency".**

Approval has been granted on the understanding that all the raw data collected will be kept confidential throughout the research and even after completion of the research. You are required to submit a copy of your final research report to the University.

Yours sincerely,

PROF. ESTHER N. GICHERU (MRS), OGW
DEPUTY VICE CHANCELLOR, FPA

THE CO-OPERATIVE UNIVERSITY OF KENYA
P.O. BOX 24814 - 00502,
KAREN, NAIROBI

Copy to - Deputy Vice Chancellor, AA
- Deputy Vice Chancellor, CDRI

AJM/SW

QUALITY CO-OPERATIVE TRAINING
CUK is ISO 9001:2015 CERTIFIED

APPENDIX 15: MAP OF UNIVERSITIES OF THE STUDY