SOCIO-ECONOMIC EFFECTS OF DOPING ON THE WELLBEING OF YOUTHFUL LONG-DISTANCE RUNNERS IN KENYA

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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This thesis has been submitted for examination with our approval as the university supervisorS:

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ABBREVIATIONS AND ACRONYMS

AK	:	Athletics Kenya
BBC	:	British Broadcasting Corporation
GDP	:	Gross Domestic Product
IAAF	:	International Amateur Athletics Federation
IOC	:	International Olympic Committee
KNLS	:	Kenya National Library Services
PES	:	Performance Enhancing Substances
SPSS	:	Statistical Package for Social Scientists
UNDP	:	United Nations Development Programme
WADA	:	World Anti-Doping Agency

ABSTRACT

Sport has continued to play an important role in the lives of many people and the various cultures within the global arena. Involvement in sport does not just improve their self-esteem but also enables them handle stress, express talents and know their bodies better. The desire to always perform better in sport however confers undue pressure to an individual and may make performance enhancing substances attractive which may later lead to involvement in doping. These substances and techniques are prohibited as they are considered unfair means of winning against those who exhibit their natural potential. Doping in sports has negative inferences on athletes/runners owing to the severe health and social consequences borne of it. The general objective of this study was to explore the socio-economic effects of doping on the wellbeing of youthful long-distance runners whereas the specific objectives of this study included determining the accessibility costs of doping on the wellbeing; evaluation of the health costs of doping; assessment of the social status effects of doping; determining the economic status effects of doping; exploration of the professional costs of doping; and evaluation of the effects of the anti-doping cost on the wellbeing of youthful long-distance runners in Kenya. This study employed cross-sectional correlation study design to collect and analyze data. The study was restricted to the youthful long-distance runners at the Eldoret, Iten, and Kapsabet training camps. The respondents' scope of events ranges from 800 to 10,000 meters of track races, cross-country and marathon. Stratified and snowball sampling techniques were used for the study in determining athletes to be sampled. The data was collected using questionnaires. Descriptive statistics was used to analyze data and the interpretation of findings was done by use of frequency tabulations. Data collected from the questionnaires was analyzed along the research objectives. Multiple regression analysis was used to depict the connection between the various variables given by the equation. The study concludes that that sustainability costs, economic status, social status and anti-doping measures contributes to the wellbeing of youthful long-distance runners in Kenya. The study findings also conclude that age, gender and education status moderates the relationship between socio-economic-effects of doping and wellbeing of athletes. The study recommends that wellbeing of long distance runners can be improved through consideration of socio-economic factors

CHAPTER ONE

INTRODUCTION

1.1 Introduction

The use of performance-enhancing substance(s) in competitive sports is an ancient practice that dates as far back as the third century. Today, doping is banned in many competitions because it poses health risks for users while also giving them an unfair advantage over their competitors. Despite such restrictions, the association of high performance with greater rewards and the pressure of a growing cult of performance continue to motivate athletes to dope. Fueled by a flourishing market of new substances and the importance of sports as a business, doping is a current public health concern for adult athletes as well as younger athletes (Mazzeo, Altavilla, D'elia & Raiola, 2018).

1.2 Background of Study

Athletes have been on the spot on several occasions especially with regard to their performances and the fact that many have been investigated and found to be doping. Doping ideally entails the use of performance enhancement substances (PES). PES may comprise of substances and drugs that have been medically tested and found to encompass characteristics and components that enhance overall body performance (Mazzeo, Altavilla, D'elia & Raiola, 2018). In essence, the use of PES renders the human body to be less fatigued and therefore capable of managing and accommodating the fatigue that would otherwise have slowed down the performance of the athlete. The PES may be in different forms such as steroids that can be imbibed or dissolved in drinks while others may be sniffed or injected into the bloodstream (Waddington, 2000). Hence, the consequent effects of the PES on the body would include increasing the adrenaline levels in the body as well as boosting the tolerance of the body to the levels of the fatigue experience and increase the endurance of the athlete.

Doping is considered as the use of banned substances in competitive sports. Primarily, the action associated with the use of substances that boost the metabolism of an individual to make them more energetic and perseverant to the fatigue of extreme sports. Naturally, the human body can only engage to a limited scope of extreme activities and sports. Therefore, the natural state of the human body functions is that it gets tired after a given amount of work. However, with doping, the athletes do not get tired and consequently, they are able to participate for longer periods. Doping gives athletes an unfair advantage that enables them to win their competitions. Performance enhancement substances (PES) are the items that are used for doping which in turn affect the metabolism of the body. For purposes of this study, doping and PES will be used alternatively and simultaneously to describe the enhancement of the body's performance. In essence, the use of doping and PES will be directed towards the same meaning in relation to the unfair advantage the they give the athletes.

In essence, the use of the substances was initially associated with the most daring and ideally the most prominent athletes who had more sponsorships and media coverage. However, majority of the elite athletes would not be found out following the secrecy associated with doping. Literature on doping point to a combination of proximal and distal predictors (Waddington, 2000). Proximal predictors include personal attitudes such as being win-oriented or overly competitive, personal preferences and values, social factors, economic factors, outcome expectancy beliefs and social norms (descriptive norms, subjective norms) (Lazuras et al., 2008). Distal factors refer to socio-demographic predictors (gender, age, school-related and truancy behaviors, frequency of sport and the use of other psychoactive substances), which is strongly associated with mental health. According to Shah et al (2019), doping among the youth is unlikely to conform to the theoretical models applied to high-level athletes owing to the fact that the two populations are motivated by different goals and athletic environments in engaging in sports.

Acts of doping were initially associated with the elite athletes following the high costs that were associated and attributed to the high performance substances. In essence, the use of the substances was initially associated with the most daring and ideally the most

prominent athletes who had more sponsorships and media coverage (Mazzeo et al 2016). However, majority of the elite athletes would not be found out following the secrecy associated with doping. Today however, acts of doping are prevalent among the youth who perceive sports more from and economic perspective especially for its financial benefits (Mazzeo et al., 2016).

The decision to engage in doping often is not an individual process. On the contrary, the decision is highly influenced by an extensive network of people ranging from the coaches, teammates to even the support teams that are in close interaction with the athletes (Waddington, 2000). In their work, Lazuras et al (2008) opine that past evidence as identified touching on the socio-contextual factors and predictors of doping focused on the prevailing social norms that condone or sanction doping behavior. Humphreys and Ruseski (2011) in their study focus on the use of performance enhancing substances (PES) by both athletes and non-athletes in Canada. Subject to the study, the authors asserted that the relationship between the use of PES and participation in sports is motivated by the financial factors leading to steroid use. The study reveals that the youth are most likely to engage in steroid use in which, the black male athletes are prone to the use of PES than the white male athletes. Furthermore, the youth with the highest expected future payoff from improved athletic performance are more likely to use PES. The use of steroid among the youth is also associated with individual characteristics that do not suggest a performance enhancing motivation.

A number of scholars inclusive of Mazzeo et al (2016), have examined the factors associated to doping susceptibility in sport, but most of these investigations observed athletes involved in different sports as a sample of subjects. Although findings of these studies are undoubtedly important, such investigations lack some important information. Namely, it is well known that some types of sports reflect specific sociodemographic profiles of participants (Waddington, 2000). Athletes involved in different sports also differ in their motivational factors or socio-economic factors as evident in of the myriad of factors influencing doping.

In sports, numerous factors have been investigated as being potentially predictive of (i.e., factors of increased risk) or protective against doping behaviour among the athletes. Among these factors, the associations studied range from different sociodemographic, sports-related, sociopsychological, economic, motivational and coaching and training-related factors. The highly competitive nature of sports has led to the rise of performance enhancers, legally or illegally, with most athletes viewing the PES as a way of guaranteeing their wellbeing in both short term and long-term. Doping has thus attracted significant interest from athletes due to its potential on their wellbeing, with doping in youths ranging from 3% to even high of 78% depending on country and sports discipline (Lundqvist and Raglin, 2015). The context of high-level competitive sports is characterized by striving for high-standards and highly valued goals in competition against others given the differing socio-economic contexts.

The use of PES has been associated with the needs of the athletes to fulfill their expectations on successful sports careers. According to the World Anti-Doping Agency, it is estimates that 1-3% of all tested samples obtained from the non-Olympic sports athletes stood out as positive for doping. While the percentages may appear to be low, the reality is that many of the athletes and non-Olympic athletes based on other tests and studies have been found to be doping. The reasons behind doping in many cases have been diverse.

However, what stands out are the socio-economic reasons highlighted by many of the athletes at the expense of their well-being (Petróczi & Aidman, 2008; Petróczi & Naughton, 2011). Key among the reasons given by both the athletes for using PES have included, first, their support systems pushing them to use the PES (Barkoukis, Brooke, Ntoumanis, Smith & Gucciardi, 2019). Practically, athletes are sponsored to participate in various events inclusive of international events. Their sponsors for instance put in significant amounts as investments and in the course of business operations, the expected outcomes include returns on investment which is shouldered by the athletes. Ultimately, the athletes are often pressured to perform and thus the use of PES becomes a viable option.

Second, economic factors (Kelly, 2016), primarily, athletes use their abilities to grow their talents. Ideally, as a source of income, athletes have to ensure that they work hard to achieve the wins and make their desired incomes. However, with the use of the PES, it becomes possible for the athletes to put up with the fatigue and therefore participate with ease in the competitions. The consequences have included the athletes thus making more income and maintaining their lifestyles with the high incomes generated. Third, sustainability access (Muwonge, Zavuga & Kabenge, 2015). PES when used, they provide the athletes with the ability to sustain their efforts and maintain their peak performance. In essence, the PES enables the body to suppress any form of fatigue that may emerge from the activities that the athletes engage.

Fourth, sustainability of information (Chebet, 2014), the availability of information concerning the use of PES also renders it possible for the athletes to make use of the substances. In this understanding, the use of PES and the available information makes it possible for the athletes to maintain the use of the substances for their personal benefits. Finally, societal image (Shakib, Veliz, Dunbar & Sabo, 2011). In a bid to sustain and maintain the status quo of their social lifestyles, athletes may engage with the use of PES for purposes of sustaining the lifestyle they have always had within their social circles. Therefore, the pressure to maintain a reputation pushes many to maintain a falsified image.

1.3 Problem Statement

The rise in doping cases among athletes in the beginning of the 20th century thus drew up more attention not only to the performance enhancement substances but also to the economic benefits associated with the use of the substances. The prevalence of doping thus was further encouraged by the athlete's support personnel who perceived the financial benefits accruing from won championships as an influential factor to encourage doping in different sporting activities (Mazzeo et al., 2015). Significantly, majority of the athletes thus opt to seek performance enhancing remedies to maintain their reputations within the media and assure of success in the major sports competitions such as the Olympics and even global marathons and competitions. The pressure to perform exceptionally coming

from the media and the sponsors has thus been found to be among the factors that have encouraged the athletes to partake in doping thus developing an imminent threat to global sports. In essence, doping undermines the principle of open and fair competition (Mottram, 2005). Overall, as opined by Mazzeo et al (2016), doping undermines the integrity and the reputation of the sports industry while endangering the welfare of the athletes both directly and indirectly.

While it is evidenced that socio-economic factors have a higher influence on the likelihood of the athletes to take up on doping and using PES, the extent to which existing studies contribute to an understanding of how PES contributes to the wellbeing of athletes is still unclear as the existing studies fail to link these factors to the overall wellbeing of athletes. Therefore, subject to this perspective, the focus of this study is thus vested in investigating and linking the correlation between the role played by the socio-economic factors and their impact on the effects of using PES on the youthful long-distance runner's wellbeing in Kenya.

The motivational aspect of athletes is linked to the ability of athletes to have a positive wellbeing in their lives. This include material wellbeing, relational wellbeing and subjective wellbeing. However, examination of these has been limited in the recent times hence the importance of the current study. It was important to understand how socio-economic factors of doping affect wellbeing of long-distance runners in Kenya. Consequently, the study was sport-specific to long-distance runners in Kenya since this is the dominant athletics in the country.

1.4 Overall Objective

The study explored the socio-economic effects of doping on the wellbeing of youthful long-distance runners in Kenya.

1.4.1 Specific Objectives

The specific objectives of the study included:

i). To determine the sustainability costs of doping on the wellbeing of youthful long-distance runners in Kenya.

ii). To determine the economic status effects of doping on the wellbeing of youthful long-distance runners in Kenya.

iii). To assess the social status effects of doping on the wellbeing of youthful long-distance runners' in Kenya.

iv). To evaluate the professional status effects of doping on the wellbeing of youthful long-distance runners in Kenya.

v). To determine the moderating effect of age and education on the relationship between socio-economic effects of doping and wellbeing of youthful long-distance runners in Kenya.

1.5 Aims of Study

The aims of this study include:

i. To establish the impact of using performance enhancing substances among the youthful long-distance runners in Kenya

ii. To determine the sustainability costs of doping on the wellbeing of youthful long-distance runners in Kenya

iii. To determine the economic status effect of doping on the well-being of youthful long-distance runners in Kenya

iv. To determine the social status effects of doping on the wellbeing of youthful long-distance runners in Kenya

v. To evaluate the effects of anti-doping measures on the wellbeing of youthful long-distance runners in Kenya

1.6 Hypothesis of the Study

The study was postulated on the premise that:

i). H_1 There is no significant influence of sustainability costs on the wellbeing of youthful long-distance runners.

ii). H_2 There is no significant influence of economic status on the wellbeing of youthful long-distance runners

iii). H_3 There is no significant influence of social status on the wellbeing of youthful long-distance runners

iv). H_4 There is no significant influence of professional status effects on the wellbeing of the youthful long-distance runners

v). H_5There is no significant moderating effect of age and education on the relationship between socio-economic effects of doping on the wellbeing of youthful long-distance runners in Kenya.

1.7 Justification of the Study

Sporting events are highly revered among global populations. Different sports have brought people of all nationalities and backgrounds together with the aim of competing or watching the competitions unfold. The sporting events challenge the prowess of the athletes in various capacities challenging them to go beyond their limits to achieve the ultimate goal of global championship recognition. Therefore, it is undisputed that the sporting competitions demand fairness and integrity on the part of the competitors and their sponsors to ascertain the integrity of the competitions as well. However, the valence of doping and the use of PES by athletes has significantly resulted in the violation of the laws that conduct sports events as a result of the mischief of the participants and even corruption at the high levels of authority (Handelsman, 2015). According to the study conducted by Handelsman (2015), the doping activities have emerged and developed to become more of a profound business and economic activity and subsequently, it has influenced the social behavior of the users both in their workplaces and in their homes.

The valence of doping and the use of PES among sports athletes and other professionals has prompted for anti-doping activism and the establishment of institutions such as WADA and other anti-doping international agencies. At the core of the roles of the anti-doping agencies is the determination of the impact and how the performance enhancing substances (PEDs) affect a person's body (US Anti-Doping Agency, 2014). Essentially, it is from the understanding of the impact of the substances on the body that it is possible to grasp why the athletes opt to use the PEDs and PES prior to competitions. As result, it is critical and necessary for sensitization about how the bodies of human beings especially athletes are affected by PEDS.

1.8 Significance of the Study

Through the study, the beneficiaries are able to derive various lessons that are helpful to youthful long-distance runners to stop using PEDs and avoid them altogether. The study will be useful in providing relevant information for use to athletes, federation heads, the anti-doping agency in Kenya, policy formulators, sports administrators, economists and sociologists and regions beyond the scope of the study. More so, the recommendations found therein are of absolute significance to the athletes, sport administrators, federation heads and governments in that they can adopt them as benchmarks towards promoting clean sports in Kenya and regions beyond.

1.9 The Scope of the Study

The scope of the study covers the socio-economic factors leading to doping and the consequent effects on the wellbeing of the youthful long-distance runners. While this is the primary coverage of the study, considerations will be granted to some of the similar areas that include: health, sports, social, economics, ethics, competition, legal, development and many more to mention but a few. In addition, the study highlights on the effects of doping in the sports industry and the fact that it is imperative that measures should be implemented to address the scourge despite the income and benefits that are enjoyed by the youthful athletes running long distance races. In particular, the scope of

the study focuses on the youthful long distance athletes who participate in events ranging between 800 and 10,000-meter track races, cross-country and marathons.

1.10 Limitations to the Study

The study was limited to the use of correlational study design that involved the use of structured questionnaire. This has major limitation to the nature of information that was collected from the study participants, resulting to the collection of quantitative information only. As such the study could not gain in-depth insights on how socio-economic factors contribute to wellbeing of athletes. Therefore, there is need for more mixed method studies (qualitative and quantitative studies) that incorporate the views of ADAK management, Athletics association of Kenya and Athlete support personnel on wellbeing of athletes

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, the researcher made a review of the related literature comprising theoretical and empirical literature existing on the socio-economic effects of doping on the youthful long-distance runners' wellbeing. While reviewing the related literature on the socio-economic effects of doping on the wellbeing of youthful long-distance runners, the researcher also presented her views whether agreeing with the sentiments presented by the things said about the socio-economic effects of doping on the wellbeing of youthful long-distance runners or not. Through the trend, the researcher has been able to bring in assertions that have helped in making recommendations in the chapter five of the study. Furthermore, the researcher also gives an illustration of a conceptual framework that shows the independent and dependent variables under study.

2.2 Theoretical Literature Review

Athletes are motivated to dope as a result of a need, which can be as a result of a "physiological or psychological imbalance" (Luthans, 2015). The intensity of the drive to use PEDs is determined by the incentive to be achieved, which will ultimately alleviate the need. Once that need has been satisfied, another physiological or psychological deficiency will emerge (Maslow 1943). In this exploration, the study applied basic need theory, entitlement theory, capabilities theory, Human development, Economic Theory and Livelihoods Theories with focal point being socio-economic effects of doping on the wellbeing of youthful long-distance runners. No single motivation theory explains all aspects of people's motives or lack of motives. Each theoretical explanation can serve as the basis for the development of techniques for motivating. Available literature distinguishes between content and process motivation theories. Content theories focus on WHAT, while process theories focus on HOW human behaviour is motivated. Content

theories are the earliest theories of motivation. Within the work environment they have had the greatest impact on management practice and policy, whilst within academic circles they are the least accepted. Content theories are also called needs theories: they try to identify what our needs are and relate motivation to the fulfilling of these needs. The content theories cannot entirely explain what motivate or demotivate us. Process theories are concerned with "how" motivation occurs, and what kind of process can influence our motivation. The main content theories are: Maslow's needs hierarchy, Alderfer's ERG theory, McClelland's achievement motivation and Herzberg's two-factor theory. The main process theories are: Skinner's reinforcement theory, Victor Vroom's expectancy theory, Adam's equity theory and Locke's goal setting theory (Figure 2.1).

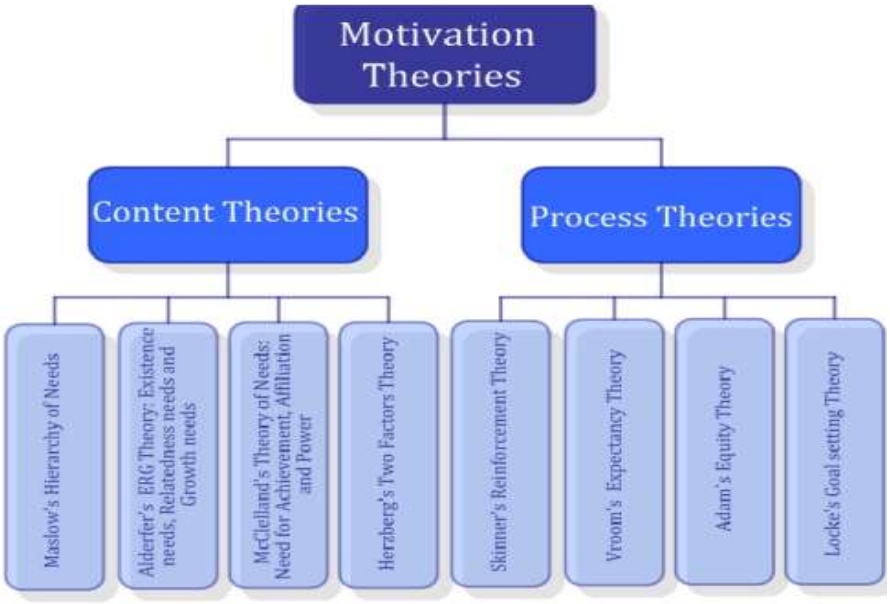
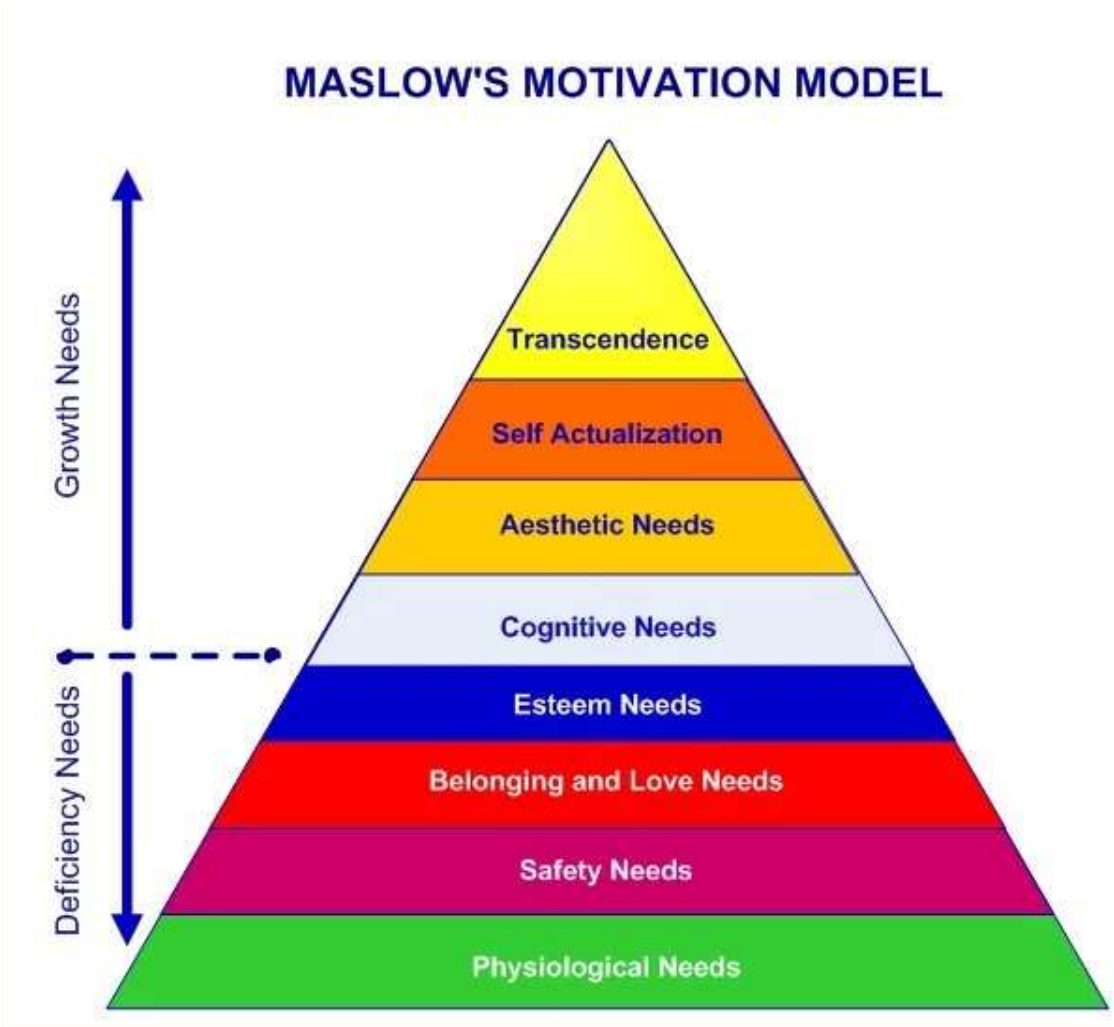


Figure 2.1: Motivation theories (Source: Researcher 2018)

2.2.1 Maslow Theory

Abraham Maslow (1954) developed the *hierarchy of needs* model which can help us understand the basis of human motivation. The hierarchy of needs is divided into the basic needs comprising of physiological, safety, love, and end growth needs which consist of

cognitive, aesthetics and self-actualization. According to Maslow's theory, human needs are categorized in five major groups in hierarchical order.



The first level contains physiological needs (water, sleep, food). After these needs are satisfied, the individual is able to focus on satisfying the safety needs (shelter, security, and protection) and belonging needs on the third level such as: love, friendship, and acceptance. Satisfaction of these needs allows the individual to advance to the ego needs. Inwardly-directed ego needs include: self-esteem, achievement, uniqueness, and independence. Whereas status, prestige, reputation and social recognition come under the category of outwardly-directed ego needs. At the top is the need for self-actualization:

striving to realize your full potential through education, travel, hobbies, engagement with environmental/social causes, etc.

In order to progress to the higher growth needs the lower level basic needs must first be satisfied. Maslow said that everyone is capable of moving up the hierarchy and everyone strives to do so. Unfortunately, progress is often disrupted by failure to meet lower level needs; life changing events such as divorce and loss of job may cause an individual to fluctuate between levels of the hierarchy. Maslow noted only one in a hundred people become fully self-actualized because our society rewards motivation primarily based on esteem, love and other social needs.

Maslow's hierarchy is one way of defining human needs but it has strengths and flaws as a theory.

2.2.2 Human Development Theory

Human development is a notion within the field of international development. It engrosses studies of the human circumstance with its core being the aptitude approach. The dissimilarity attuned Human Development Index is used as a way of evaluating actual progress in human development by the United Nations. It is an alternative approach to a single focus on economic growth, and focused more on social justice, as a way of understanding progress (UNDP, 2016). It is in the presumption that no development can be achieved without social justice. In other words, before one talks of development, the thought of social justice must come to the fore.

The term *human development* may be distinct as an expansion of human capabilities, a widening of choices, ‘an enhancement of freedom, and a fulfillment of human rights. Indeed, it is a process of enlarging people’s freedoms and opportunities and improving their wellbeing. Human development is about the real freedom ordinary people have to decide who to be, what to do, and how to live (Measure of America of Social Council of Research, 2017). The enhancement of development and human rights are intertwined in

the sense that you cannot separate them. It is through the freedom that one is able to exercise his or her capability to the maximum. However, without that freedom, he cannot explore his potential as in the sport. Nevertheless, the freedom must be exercised with responsibility such as athletes should not involve themselves in activities like doping in the extreme of exercising their freedom.

Development concerns expanding the choices people have, to lead lives that they value, and improving the human condition so that people have the chance to live full lives. Thus, human development is about much more than economic growth, which is only a means of enlarging people's choices (Barder, 2016). Without having the concept of freedom to choose, then development will not have the impact on the lives of individuals. Fundamental to enlarging these choices is building human capabilities; the range of things that people can do or be in life. Capabilities are "the substantive freedoms (a person) enjoys to lead the kind of life (they have) reason to value"(Cooker, 1995). In other words, an individual needs to have freedom to aspire how his being should be, what direction his life should take and what achievement in life he or she is anticipating to attain. Nevertheless, in doing all these, it should be done with a high sense of responsibility. This is due to the fact that freedom done without critical responsibility might endanger the life of an individual (Barder, 2016). The three major categories of human development theory that underpinned the study are discussed in the succeeding section.

2.2.2.1 Nozick Entitlement Theory

It is a theory of distributive justice and private property created by Robert Nozick. The theory is Nozick's stab to illustrate "justice in holdings" (Nozick, 1974) or what can be assumed about and done with the possessions people own when viewed from a standard of justice. In this case, the researcher is looking at the talents of youthful or young long-distance runners versus doping and how the element of doping can impact them negatively against their talent. On the other hand, distributive justice is hoped to reward or punish an individual based on his or her actions where consequences are reaped accordingly. The

entitlement approach is based on three conceptual categories, namely,(i). The Endowment set; (ii) The Entitlement Set; and (iii) The Entitlement Mapping

The *endowment set* is defined as the combination of all those resources that are legally owned by a person conforming to established norms and practices. The said resources include both tangible assets, such as land, equipment, animals and intangibles such as knowledge and skill, labour power, or membership of a particular community. The *entitlement set* on the other is defined as the set of all possible combinations of goods and services (not just the one actually being enjoyed) that a person can legally obtain by using the resources of his endowment set. The use of the resources to get final goods and services may be either in the form of production, exchange or transfer. The *entitlement mapping*, called E-mapping, is simply the relationship between endowment set and entitlement set. It is the rate at which the resources of the endowment set can be converted into goods and services included in the entitlement set.

Nozick's theory of entitlements is postulated in three main beliefs that states: (i) *A principle of justice in acquisition*: it deals with the preliminary acquisition of holdings. It is an explanation of how people first move towards owning familiar property, the types of articles to be apprehended, and so forth. In other words, Nozick was attempting to postulate that before someone acquires property, he/she must understand the process of acquiring property (Nozick, 1974). In acquiring the property especially that is common, one has to follow all the due process by knowing the thing he or she is seeking to own. In dealing with race competition an athlete must be conversant with the race he or she is running, rules and regulation of the race, the prize tag and penalty should he/she break the rule. Therefore, on the race race and possessing medals, they must be won and possessed according to the procedures and conditions laid down by WADA and other sports bodies. The implication is that whatever that is rewarded must be justified through the process laid down procedure of receiving such reward (ii) *A principle of justice in transfer*: explains how one person can obtain assets from another, including intentional swap over and gifts, (iii) *A principle of rectification of injustice*: deals with holdings that are unfairly obtained or transmitted, whether and how much victims can be remunerated,

how to deal with the historical injustices or discriminations done by a regime, an individual or a group of people to certain individual or community. Nozick implied that no one was supposed to hold property apart from either inheriting the common asset or rightly following the process of transfer through laid down known procedures (Nozick, 1974).

However, Nozick had lamentation that not everyone followed due procedures in acquiring possession. He agonized that some stole or used dubious means to hold properties; or used fraudulent approaches through lies or forcing people to surrender property in order for them to acquire (Nozick 1974). Just as in athletics, some can use dubious means such as PEDs to have competitive advantage over others who fairly labour and do not apply cosmetic influence to win a race. In regards to the above statement, the researcher advocates for fairness in which rectification of the process must be done and thus each and every person is rewarded or punished accordingly to his or her effort or actions.

2.2.2.2 Amartya Sen Entitlement Theory

Entitlements have been defined by Sen (1984) as "the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces". It should be noted that this is a descriptive rather than a normative concept; entitlements derive from legal rights rather than morality or human rights.

In Sen's framework, people destituted by famine are not entitled to food; instead they are "entitled to starve" (Edkins, 1996). Despite its normative connotation, entitlements "does not reflect in any sense a concept of the right to food" (Edkins, 1996). A person's "entitlement set" is the full range of goods and services that he or she can acquire by converting his or her "endowments" (assets and resources, including labour power) through "exchange entitlement mappings" (Fine ,1997).

In the context of poverty and famine, the entitlement approach aims comprehensively to describe all legal sources of food, which Sen (1981) reduces to four categories: "production-based entitlement" (growing food), "trade-based entitlement" (buying food), "own-labour entitlement" (working for food) and "inheritance and transfer entitlement" (being given food by others) (Mitra, 1982; Rangasami, 1985).

Individuals face starvation if their full entitlement set does not provide them with adequate food for subsistence. Famine scales this up. Occupationally or geographically related groups of people face famine if they simultaneously experience catastrophic declines in their entitlements. Perhaps the most valuable contribution of the entitlement approach to famine theorizing is that it shifts the analytical focus away from a fixation on food supplies—the Malthusian logic of "too many people, too little food"—and on to the inability of groups of people to acquire food. Food insecurity affects people who cannot access adequate food (e.g. because of poverty) irrespective of food availability—a famine can occur even if food supplies are adequate and markets are functioning well (Mitra, 1982; Rangasami, 1985).

This is a crucial insight. As Sen (ibid) emphasized, there is no technical reason for markets to meet subsistence needs—and no moral or legal reason why they should. An equally important insight—and one that has generated much confusion and controversy in the literature—is that famine can be caused by "exchange entitlement decline" (adverse shifts in the exchange value of endowments for food, e.g. falling wages or livestock prices, rising food prices) as well as by "direct entitlement decline" (loss of food crops to drought, for instance). The entitlement approach does not exclude the latter possibility (Fine, 1997).

2.2.2.3 Capability Theory

The capability advance was originally expressed by the Indian economist and philosopher, Amartya Sen, in the 1980s, and remains most closely connected with him. It has been in use at length in the background of human development, for example, by the United Nations Development Programme, as a wider, profounder option to scarcely economic

metrics such as growth in GDP per capita. Here ‘poverty’ is implicit as deficiency in the competence to live a good life, and ‘development’ is understood as potential spreading out (Wells, n.y). In essence, through development, poverty is being dealt with.

In an evaluation of the capability approach, Alkire (2005) connected the capability approach with a ‘proposition’, according to which ‘social arrangements should be evaluated according to the extent of freedom people have to promote or achieve functioning’s they value’.

Robeyns (2005) talked about the capability as the approach of being ‘primarily and mainly a framework for thought’ a ‘broad normative framework for the evaluation and assessment of individual wellbeing and social arrangements’. She argues that poverty, inequality and social exclusion are not social phenomena that the capability approach seeks to explain. In another way, she advocates that each and every person has the capability to improve his or her conditions through an effort made by him/her.

Sen (2009) argues that the capability approach can make a significant contribution to theories of justice by offering a comparative framework for evaluating states of affairs. On that account, justice is furthered when people enjoy more freedoms to live a life they have reason to value. However, justice is not worth living if one uses dubious means to acquire what does not belong to him or her. In this case, one is supposed to be rewarded on the merit of what he or she has made an effort to achieve. Even in athletics (long-distance race), every one participating in competition should get attributes to him/herself according to practice he/she strives to make not in accordance to the use of prohibited substances or substances.

The vitality of human freedom is the defining feature of the capability approach. It is viewed as a form of liberal egalitarianism (Robeyns, 2009), for it is concerned with equality, and inequality is to be assessed in the space of freedoms. The liberal spirit of the capability approach is expressed in three ways: non-commitment to a conception of the good, conception of the person as rational, and priority of the individual as postulated by

Mulhall and Swift (1996). In essence, the balancing acts on the individual are given much consideration to core that justice is merited accordingly. In connection to athletics, young long-distance runners deserve to either be rewarded as per their effort or otherwise be punished in exploration dubious approaches in winning races.

These free and rational individuals have ethical priority for thinking about wellbeing and justice. The capability approach is said to be ‘ethically individualist’ because it affirms that states of affairs should be evaluated only according to their goodness or badness for individuals (Robeyns, 2008). In essence, every individual athlete should consider ethical and moral codes before attempting to use PEDs and the question that should always hang on his or her conscience is whether that is right or bad.

Human capability is like a racing bike. A bicycle itself is a source and a mode of transportation. If the person who owns the bicycle is unable to ride it, the bicycle is useless to that person as a transportation mechanism and loses its operation. If, conversely, a person owns both a bicycle and has the ability to ride a bicycle, they now have the capability of riding to a friend's house, a local store, or a great number of other places. This capability would increase their value of life and expand their choices. A person, therefore, needs both resources and the ability to use them to pursue their capabilities. Philosophers, economists and political leaders have long emphasized human wellbeing as the purpose, or the end, of development (UNDP, 2016).

2.2.2.4 Nussbaum's Formulation

Martha Nussbaum offers an analysis of gender issues in development that flow from the “capabilities” approach to the analysis of quality of life (Nussbaum, 1995). Advocated and developed by Amartya Sen in a variety of writings, this approach attempts to define wellbeing in an objective way, by identifying a set of core human capabilities that are critical to full human functioning and assessing wellbeing (and the success of development policies) by the degree to which the individual is in circumstances which lead to the

realization of these capabilities. The approach is critical of standard utility and preference-satisfaction approaches to the measurement of wellbeing.

Along with its predecessor volume, The Quality of Life, the book provides a superb basis for discussions of justice and morality within the context of economic development policy. (It should be noted that the Human Development Report, published annually by the United Nations Development Programme, offers development statistics for about 150 countries that are designed to provide empirical information about quality of life in developing countries. The methodology of these reports is very much influenced by the capabilities theory advanced by Sen, Nussbaum, and others (Nussbaum and Sen, 1993),

The core of the theory is a principled account of a set of fundamental human capabilities which are held to be essential to a good human life. The Aristotelian origins of the approach are manifest. Martha Nussbaum's essay, “Human Capabilities, Female Human Beings,” provides an effective exposition of the theory (as does David Crocker's piece) (Nussbaum and Glover, 1993).

It is Nussbaum's contention that we can say a great deal about what is needed for a good human life; and this account is substantially independent of cultural variations (that is, human beings have the same capabilities for functioning in a wide variety of social and cultural settings). The capabilities involved in a good human life may be listed and justified, and the resulting list can serve as both a guide and a critical standard for development policy (Nussbaum, 1995).

Nussbaum (ibid) devotes much care to the composition of this list. In brief, it includes: being able to live to the end of a human life of normal length; being able to have good health, adequate nutrition, adequate shelter, opportunities for sexual satisfaction and choice in reproduction, and mobility; being able to avoid unnecessary and non-beneficial pain and to have pleasurable experiences; being able to use the senses, imagination, thinking and reasoning; and to have the educational opportunities necessary to realize these capacities; being able to have attachments to things and persons outside ourselves;

being able to form a conception of the good and to engage in critical reflection about the planning of one's own life; being able to live for and to others, to recognize and show concern for other human beings; being able to live with concern for and in relation to animals and the world of nature; being able to laugh, to play, to enjoy recreational activities; and being able to live one's own life and no one else's by enjoying freedom of association and freedom from unwarranted search and seizure (Nussbaum and Sen, 1993).

Nussbaum characterizes the significance of this list in these terms: “My claim is that a life that lacks any one of these capabilities, no matter what else it has, will fall short of being a good human life”. Further, she maintains that the list, and its associated argumentation, ought to be taken seriously by development theorists in the design of development strategies. Public policy must be guided by a conception of the human good that gives the policy maker strong guidance in selecting goals and priorities for the development process. “The basic claim I wish to make . . . is that the central goal of public planning should be the capabilities of citizens to perform various important functions” (Nussbaum and Glover, 1993).

2.2.3 Livelihood Theory

Livelihood is defined as a set of activities, involving securing water, food, fodder, medicine, shelter, clothing and the capacity to acquire above necessities working either individually or as a group by using endowments for meeting the requirements of the self and his/her household on a sustainable basis with dignity. The activities are usually carried out repeatedly. In other words, livelihood is an attempt by an individual to meet all his/her basic needs and also meeting the others who may be referred to as dependents (Blaikie et al., 2004). The concept of Sustainable Livelihood (SL) is an endeavor to go yonder the conservative characterizations and methods to poverty extermination. These had been established to be too constricted because they concentrated only on certain features or appearances of poverty, such as low income, or did not reflect on other vital phases of poverty such as susceptibility and social segregation. However, the scope needed to be expanded touching all the concerned areas (Blaikie et al., 2004). Knutsson (2016) asserts

that, “The sustainable livelihoods idea was first introduced by the Brundtland Commission on Environment and Development, and the 1992 United Nations Conference on Environment and Development expanded the concept, advocating for the achievement of sustainable livelihoods as a broad goal for poverty eradication.” A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living. A livelihood is sustainable if it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long-term (Knutsson, 2006).

In reflection to the above, livelihood does not restrain itself to income but it is an all-round approach that includes resources of all kinds that humanity is entitled to live on. In social sciences, the concept of livelihood extends to include social and cultural means, i.e. “the command an individual, family, or other social group has over an income and/or bundles of resources that can be used or exchanged to satisfy its needs.” This may involve information, cultural knowledge, social networks and legal rights as well as tools, land and other physical resources (Blaikie et al., 2004). In thinking of the sentimental facts pertaining to cultural knowledge, social networks and legal rights that are considered to be tools, it would be of immense significance if social amenities were included in the list postulated by Blaikie et al (2004) for through social amenities, the society will have a wide area of interactions that will include religion, sports and social halls.

2.3 Conceptual Framework

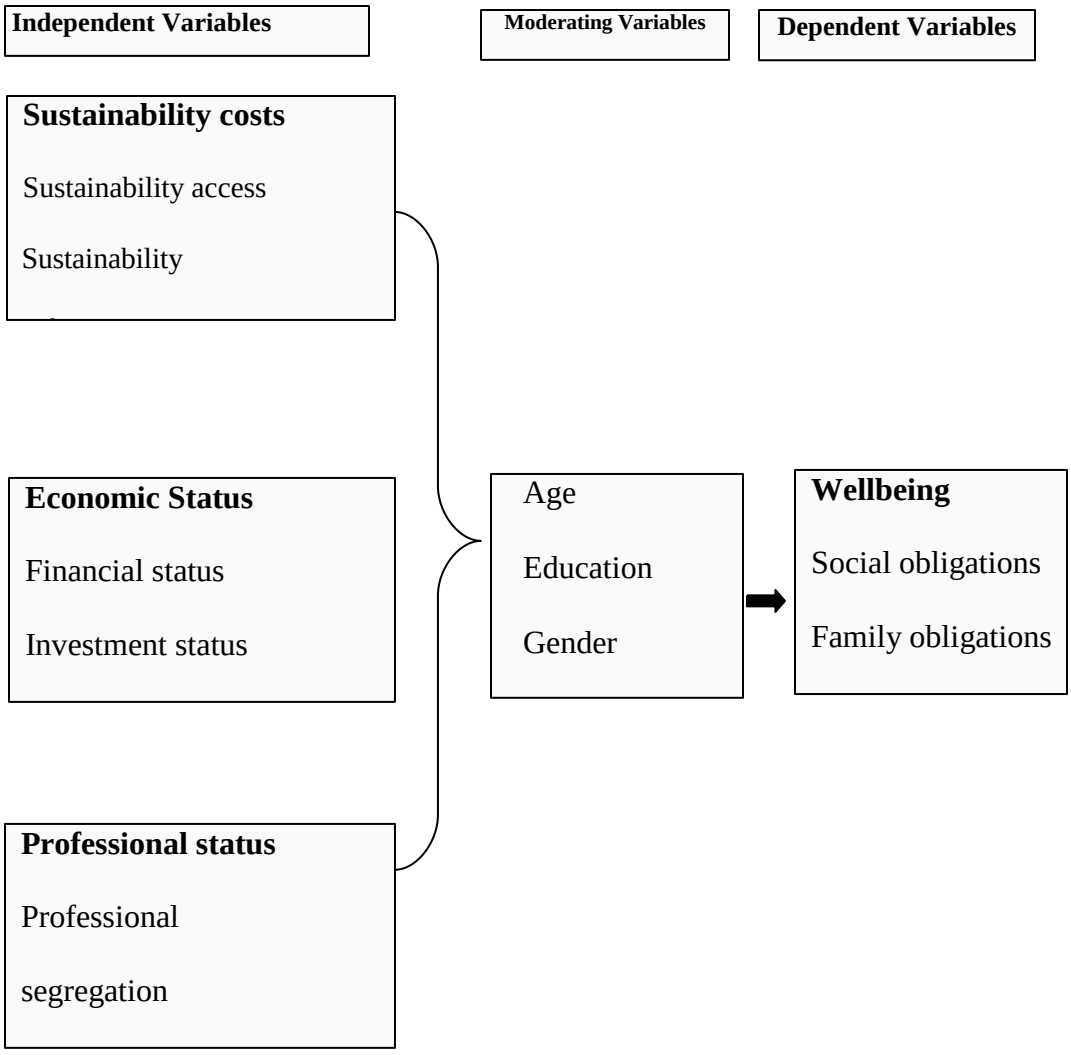


Figure 2.2: Conceptual Framework

The figure 2.2 above is the conceptual framework of socio-economic effects of doping on the long-distance runners. The independent variables being the accessibility, health, economic and professional costs that are supplemented by anti-doping measures which in return have significant effects on the wellbeing of the youthful long-distance runner or athlete. The dependent variable is wellbeing of the long-distance is being influenced by socio-economic and doping in sports.

2.4 Review on Literature Variables

2.4.1 Sustainability Costs

Sustainability costs of doping on the wellbeing of young long-distance runners considered are cost of sustaining doping specifically access to substances and the cost of concealment by an athlete. Health costs of doping on the wellbeing of the athlete or the youthful long-distance runners include concealment being sustained by being evasive and using masking agents to conceal the use of PES. Athletes access PES through different sources such as Athletes' entourage and coaches, doping, peers, friends, relatives, doctors, pharmacists and family members. These sources also influence athletes' decisions to dope or not. (Erickson, McKenna, & Backhouse, 2015).

As Pappa and Kennedy (2013) indicated, athletes caught doping reported that all coaches are always aware of whether their athletes are doping and what substances they are using. Similarly, Engelberg and Moston (2015) suggested that coaches may indirectly and inadvertently support doping through the lack of formal activities or education against doping or by endorsing pro-doping attitudes. Yet, the mechanism through which these support personnels are a source of doping for different sports setting is still unexplored (Ntoumanis, Taylor, & Thøgersen-Ntoumani, 2012).

Athletes' decision to dope or not is influenced by access that athletes have on doping information. In the age of technology and globalization, the spread of information has been made fast and easier through internet. Internet offers opportunities for most athletes to access doping information although such information may not be reliable. Local network also acts as a key platform for athletes to access doping information. In this network include peer athletes, coaches, support personnel, family members and doctors. Besides, local network, athletes can also access information from athletes federation bodies existing across countries (Lentillon-Kaestner and Carstairs, 2010).

2.4.2 Economic Status

Athletes participate in sports not only because of the pride that comes with winning competitions but also due to the financial rewards that they can profit from elite and national competitions. The drive to win in the competitions has pushed athletes to use PES as a way to enhancing their chances of winning these competitions, and the ultimate competition prize. Financial pressures among athletes is thus a push factors for most athletes to engage in doping with the hope of not only providing for themselves but also for their "significant others".The modern athletics competitions has increasingly become commercialized, and with this the temptation amongst most athletes to win lucrative contract has increased. Such contracts are given by multinational companies that consider the "athlete brand" as a good brand to market their products. To be selected as a brand ambassador for the leading multinationals, athletes are expected to be winners of elite competitions of which many, see the use of PES as contributing to the realization of this goals.

Athletes in a number of countries such as Kenya contribute immensely to the economic growth of different regions. Athletics offers participants the opportunities to win elite competitions, lucrative contracts and financial deals that are used for their empowerment (family and community members) in short term and long-term. Through income earned by athletes, investments in the form of land, buildings and others have been made by athletes. The potential to enhance their investment capability only pushes more athletes to consider doping as a viable option (Corrigan, 2015).

2.4.3 Social Status

Social status is a potential determinant of doping through family pressure and societal pressure. This is relevant because parental pressure to be perfect is more salient in younger athletes (Dunn, Gotwals, Causgrove Dunn, & Syrotuik, 2006) and thus may have an effect on doping attitudes in junior athletes, but not adult athletes. Moreover, according to Petróczi (2013), athletes at different stages of their sporting career have different mindsets.

Whereas older athletes' mindsets are geared towards achievement goals that are more performance-oriented, making them more vulnerable to doping, younger athletes' mindsets are geared towards achievement goals that are more mastery-oriented, making them less vulnerable (Allen et al., 2015).

In support of the role of family pressure, Bahrami et al. (2014) argue that family pressure is more enhanced in cases where athletes have a family standing to maintain. For instance, they argue that athletes coming from families with history in particular sports are likely to feel the pressure to dope to maintain the family honour in such sports. Similar to family pressure, societal pressure that emanating from communities and media also increases the likelihood of athletes to dope in order to fit within the societal expectations.

2.4.4 Professional status

Performance enhancement through 'performance pressure' is one of the important aspects of anti-doping measures. This mean any factor or combination of factors that increase the importance of performing a task as well as possible in a particular situation (Baumeister, 1984). In this definition, the various factors of performance pressure may be external or internal or as in some cases a combination of both. It is indeed well established (Wanjek et al., 2007) that doping prevalence is high among athletes having higher levels of competition.

Professional segregation is a situational cost that athletes consider when paying attention to anti-doping measures**.** The costs can be seen as a legal deterrent via legal sanctions that can take the form of suspension, banning or prize withdrawal. Examples of social sanctions are condemnations by the surrounding world that athletes experience if tested positive, such as being ignored by fellow athletes or negative reports in the media. Self-imposed sanctions relate to individual feeling guilty trip after testing positive. In addition, sanctions that involves the termination of sponsorship contracts are also part of te social costs (Huybers and Mazanov 2012).

2.4.5 Socio-Demographic Variables (Age, Gender and Education Status)

Athletes who participate in sports have different background in terms of gender, age and education status, and this either directly or indirectly determine their performance levels and susceptibility to doping. Studies that have examined gender differences, have revealed that men are more likely to dope than females. One possible explanation relates to the perceptions of PEDs, as Giraldi et al. (2015) asserts that males see doping as more beneficial than females. Hence the gender differences in relation to PEDs. There could also be other factors, too, such as those that contribute towards gender differences.

It has also been suggested that the use of PEDs increased as young people matured to adulthood though this may not be true for all categories of PEDs.. The pressure to dope as an athlete ages up is associated with more pressure to benefit financial among older athletes who may have more social and economic obligation as compared to relatively younger athletes. Level of education also affects the exposure level of an athlete and by extension their likelihood of doping (Elkins et al., 2017).

2.4.6 Wellbeing of Athletes

Wellbeing of athletes has been conceptualized along objective wellbeing and subjective wellbeing. Objective wellbeing refers to the ability of athletes to gain from sports thus be able to fend for themselves. Wellbeing primarily evaluated based on objective terms relates to how one's quality of life improves due to his/her trade (Goldstein & Ford, 2012). However, normative standards used have led to the development of subjective wellbeing that athletes and their significant others experience or have. Athletes are expected to support their family networks, social networks and any significant other in their career, and hence athletes have also acquired wellbeing linked to family status and societal status (Chen et al., 2009). Hence, family obligation and social obligation is an important aspect of an athlete's wellbeing.

2.5 Empirical Literature Review

2.5.1 Sustainability Costs Doping on Wellbeing

Goldstein & Ford (2012) contend that most doping outcomes decay over time. Decay or the dissipation of doping effects is more likely when athletes have not had the opportunity to apply the skills they learned during training or in one on one contact. In fact (Arthur, Bennett, Stanush, & McNelly, 2013) suggest that application of doping skills may be stymied due to a number of situational obstacles (e.g., opportunity to use, time availability). Therefore, the doping obstacles directed at the athletes may not mean that they will decrease their doping skills after evading the obstacles. Wyman, Inman, Brown, Cross, Schmeek-Cone, and Pena (2008) have examined whether intervention strategies help athletes or their coaches to sustain the effect of their knowledge of doping. Regrettably, this intervention produced null effects on the following outcomes: (a) knowledge of suicide prevention, (b) appraisals, (c) behaviors, and (d) communication at follow-up. These null findings coupled with a lack of research in distal prevention outcomes led Chen and colleagues (2009) to question what strategies might help athletes bodies sustain the effects of doping.

Goldstein and Ford (2012) describe the systematic acquisition of skills, rules, concepts, or attitudes that result in improved performance and suggest that individuals generalize and maintain materials learned from training into a new environment therefore lack of change only looking for new ways to continue with the habit. Marx (2013) proposed that individuals who believe they can successfully perform a task are more likely to be resilient when they encounter obstacles at work. Supporting this claim, researchers (Bandura & Wood, 2009; Brown, 2011; Lock & Latham, 2014) have found that self-efficacy can facilitate continual doping by influencing trainees' effort, persistence, and strategies. For example, in a study examining ways to improve evasion of doping skills, it was opined that the acquisition and maintenance of such skills remains with the individual (Gist et al., 2013).

Various studies of addiction have shown that value-orientations have an effect on substance use (Brook & Whitehead 2013; Castro et al. 2014). This, however, neglects the fact that attitudes or intentions for a certain behaviour can exist but do not necessarily immediately manifest themselves in actual behaviour (Sheeran, 2012). The simultaneous existence of individual dispositions (Sniehotta, Scholz&Schwarzer 2015) and situational opportunities (Ajzen 2015) increases the probability that the behaviour occurs and that consumers end up being addicted to this behaviour. But it is a fact that individual predispositions for such a behaviour already exist. Therefore, it is partial to define doping solely as an exhibited behavior. The underlying values and processes leading to this behaviour must be taken into consideration as well.

A study by WADA (2012) on doping education status revealed that the access to doping substances amongst Kenyan athletes happens through coaches, general practitioners, team doctors and researchers. Furthermore, the study established that source of information for the athletes includes peers, coaches, doctors, internet and family members. The study concluded that sustainability of access and information comes from different sources. Some scholars also highlight reference groups' opinions (e.g. coaches, peers) as important factors in athletes' decisions to dope or not to dope (O'Donnell et al., 2006). Smith et al. (2010) found, for example, that athletes were strongly influenced in their attitudes on doping by mentors within their support system. Similarly, Lentillon Kaestner and Carstairs (2010) have demonstrated the importance of coaches and peers in the sports environment of young cyclists. The social context and the opinions of reference groups within the sport were found to play significant roles. Thus, the above aforementioned studies underscore the importance of social networks as facilitators or inhibitors for athletes who might consider doping.

2.5.2 Economic Status Effects of Doping on Wellbeing

The current sporting climate that gives room to doping is motivated by the growing economic rewards of winning and an environment of ineffective enforcement, leading to a growing number of athletes with a doping mindset. An athlete with this mindset is not

held back by the morality of his/her doping action and thus it is not an ethically defendable decision to dope. Hon, Kuipers and Bottenburg (2015) suggest that the number of doping athletes is greater than that of the number who have shown positive in the substance tests. The only athletes who could assist in such respects would be ones whose doping tendencies have been established or have acknowledged such attempts. Of course this is a small number compared to those whose tendencies have not been established and most of them are either barred or serving a ban in their respective sports, thus they are usually not openly coming out to state the reasons that persuaded into doping. Furthermore, some of their responses ought to be cautiously considered as they emanate from interviews with journalists rather rather than impartial and unbiased interviewers.

An athlete that banishes doping, however risky (in multiple ways) can provide victory and from this, massive monetary gains and publicity. It might be common in sports associated with doping like baseball for athletes to sign contracts in excess of $100 million, whilst the best performers can sign contracts in excess of $200 million (Polvinale, 2014). Breivrik (2014) suggests that the type of person who bases their decision-making on such reasoning is lombardian, for to a lombardian winning is all that matters in any given situation. A lombardian will thus disregard all the previously discussed anti-doping arguments in favour of victory. In recent years, it is likely that the number of elite athletes with lombardian tendencies has risen sharply due to the potential gains linked with victory. Schneider and Butcher (2014) argue that this egoism linked to the lombardian views and doping in sport is ultimately self-encouraging for an athlete that considers the benefits of victory that it brings along rather than safety and cleanliness of the sport.

Janssen (2013) conducted a descriptive study on the impact of athletics on youth empowerment in Iten Town, Elgeiyo Marakwet County, Kenya. The study findings showed that athletics has contributed to the empowerment of youths themselves, their families and the community where they live. The study establishment that the most common form of empowerment experienced by athletes includes financial gain, infrastructure development and investment in assets. The study revealed that some athletes in the hope of being empowered more use some banned substances to achieve this goal.

Gitau, Sitati, Wishitemi & Njoroge (2008) in their cross-sectional descriptive study sought to investigate how athletics Rifthas helped in wealth creation in the North Rift region of Kenya. From the findings, it was established that from the financial gains and proceeds earned through participation in national and international competitions, many athletes have bought various assets and investments significantly in the North RiftRift region. This study concludes that the drive to perform better amongst athletes in North RiftRift is motivated by the wealth that can be created from athletics.

2.5.3 Social Status Effects of Doping on Wellbeing

The family status appears to be related, in some way, to the problems of doping. In a study carried out by the United Nations University on Mexico shows that doping or substance abuse correlates more strongly with the disintegration of the family than with poverty (Toro, 2015). Similarly, in areas where social controls exercised by the family and the community had broken down, doping or substance abuse became prevalent among young men, women and children, and affected as much as 10 per cent of the population (Henning, 2013). Doping and substance abuse strains family relationships and ultimately makies them dysfunctional. Although families have a powerful influence on shaping the attitudes, values and behavioural patterns of children and thus preventing substance abuse, peer groups often prove to have an even stronger influence (Kandel, 2015).

The negative influence appears to increase when parents abdicate their traditional supervisory roles. Family factors thought to lead to, or intensify doping and substance abuse include prolonged or traumatic parental absence, harsh discipline, failure to communicate on an emotional level and parental use of substances. Lack of household stability triggered by low and irregular income and unemployment may increase the stress on the family and its vulnerability to substance abuse. This opens a wide field for possible government action to reduce such vulnerability. While the family itself can be the source of substance problems, it can also be a potent force for prevention and treatment. There has been increased acceptance of family therapy, where more than one member of the family is involved simultaneously in therapy sessions. As most families are supported and

cared for by women, women frequently play a key role in teaching the young, ensuring that health-care is provided, and maintaining links with and mobilizing community support where necessary. The recognition and effective utilization of women as resources for substance prevention and treatment can therefore improve efforts to reduce both the supply of and demand for substances. Indeed, the family unit as a whole has a clear interest in preventing individual family members from falling prey to substance abuse, and thus could become a powerful ally of government and community prevention programmes (Farrell, Mansur, and Tullis, 2016)

Mwanga, Gaudin and Felix (2017) in their cross-sectional study sought to investigate the family and its influence on Kenyan Athletes' Performance. The study revealed that family is one of the most important support system that an athlete has from the beginning. Family in most occasions acts as a driver for athletes to perform betters and most athletes the study revealed are obligated to bring honor to their families.

Kegelaers, Wylleman, De Brandt, Van Rossem & Rosier (2018) in their study entitled "*Incentives and deterrents for substance-taking behaviour in elite sports: a holistic and developmental approach",* established that athletes engage in doping due to personal image, physical image and societal image. The study also revealed that media pressure is one of the most important influencers of societal image.

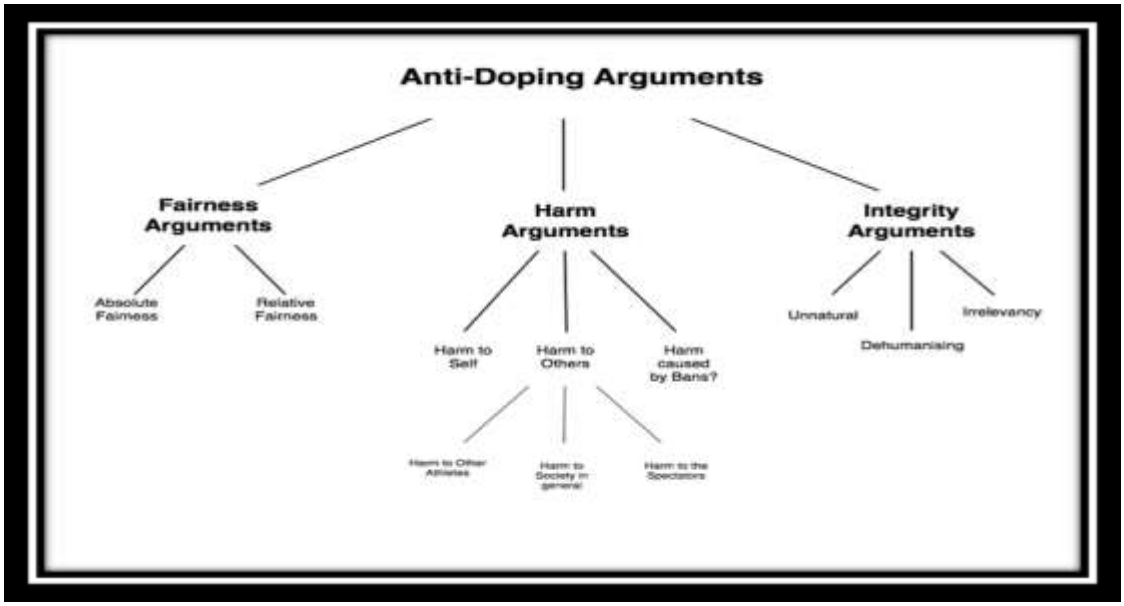
2.5.4 The Professional Status Effect on Wellbeing

Figure 2.3 below is about the argument of anti-doping in the sports based on Donaher (2015). For fairness arguments, it is presumed to either absolute fairness or relative fairness. In regards to harm arguments anti-doping is harm to self, others such as colleague athletes, society in general and to the spectators. However, questions linger over the harm caused by bans when anti-doping measures are enforced on the athletes found to be culpable of using banned substances. On the integrity arguments, anti-doping is unnatural, dehumanizing as well as it is irrelevant. According to Cisyk (2015), sporting competitions

require fair level playing field. Simply put, he suggests that there should be no room for cheating in sports.

Figure 2.3: The Anti-Doping Measures Argument

At the same time, Cisyk (2015) admitted that some argue that, "…doping is just another



technology to improve performance and there are rules to deal with what contestants can and cannot do to win." In the opinion of the researcher in this current study, doping is cheating and should not be coated as a technology because in so doing it will be leveraging on the athletes or runners to apply all kind of mischief in order to get advantage over fellow competitors in the name of sporting. In assuming that doping is just another form of technology, it also makes anti-doping measures as null and void and thus it will appear as though there was no need to formulate them at the initial stage. In essence, allowing doping as a form of technology makes the initial effort void.

Gounder (2016) argued that, "…But lifting the ban on PEDs could wind up penalizing anyone who didn't dope, essentially coercing athletes into using substances. While there are certainly changes we can make to better handle the problem of PEDs, to legalize

doping entirely would be antithetical to the idea of sport." In other words, Gounder (ibid) suggests that WADA and other National anti-doping agencies should continue to penalize those found culpable of doping as well as seeking other avenues in dealing with dopers but strictly enhancing fairness in playing field in which competitor is rewarded in accordance to his or her efforts.

According to Donaher (2015) doping is an intricate matter that many are struggling to comprehend on how and why it occurs in the noble sports, and measures need to be put in place to prevent doping in sports and to this research especially among the youthful long-distance runners. Donaher (2015) on the other hand lamented that despite all efforts that have been put in place to address doping, there are still various disagreements on the best approaches to address doping among the athletes in the contemporary sports arena. In addition to Donaher (2015), Handelsman (2015) asserts that the use of banned substances to affect the outcome in sports such as long-distance race amounts to fraud, against competitors, spectators, sports, sponsors and the civic and it can't be any different from other personal, professional or business frauds. In another way, the practice does not bring integrity in sports and stiff measure that had been put into place by WADA should be implemented to the spirit and the letter of the anti-doping measures. It will be of significance if education and sensitization on health effects of doping is done to the youthful long-distance runners as punitive measures alone will be inconsequential owing to the fact that the runners will devise means to hide doping practices as they race to gain the monetary gains that come with the competitions thereof. Wilson (2012) added his voice by saying that the war against doping has concentrated on banning of the sportsmen for a moment. In essence, banning athletes or youthful long-distance runners may not prevent doping in the game but education and sensitization will play a major part in preventing the vice or to the extent of minimizing the practice that impact sports negatively.

It has been argued by various stakeholders including coaches, sports officials, and medical practitioners that current and previous anti-doping measures are unproductive and inept. The arguments postulated by stakeholders indicate that the statistics presented in some

sports as in regards to doping, underportrays the true facts of the extent of doping in sports (Cycling News, 2011). As result, there is need for critical evaluation of anti-doping measures to find their effectiveness and efficiency and the factors that can enhance more effectiveness in sports. Kohler et al. (2009) affirmed that there have been arguments presenting various factors that influences individual runners to practice doping, causes behind doping and effects of doping on athletes or runners. Nevertheless, little work or none has been fashioned to essentially evaluate the factors within the sporting and anti-doping systems. The indication portends that much should be done to see the accuracy of doping testing and appropriate measures that can be considered in the fight against doping – a practice that threatens sports especially long-distance running. Handelsman (2015) added his voice that though testing was one of the primary effort in detecting the doping issues, it would be appropriate to apply education in which it would address the consequences of health which will enhance effort for athletes to have self restraints on doping.

Verroken (2000) affirms that anti-doping approaches are complex in nature. Due to the convolution of the doping trend, concurrent contemplation of physiological, medical, pharmacological, psychological, ethical and systemic factors is necessary in order to be successful in this venture. Having such considerations, it would be easy to devise means by which direction to take in effecting anti-doping measures in long-distance running in addition to consideration of the wellbeing of the youthful athletes who have a future prospect to excel in athletics and entrepreneurship even after retiring from the long-distance running.

Many nations have joined WADA in enforcing measures to fight doping in sports. Njuguna (2017) affirmed that Athletics Kenya (AK) recently launched anti-doping campaigns in Kapsabet and Nyahururu in which it was proposed that runners who will be found using performance enhancing substances will be banned for life in sports. With the magnitude of PEDs being prevalent in the sport especially in the long-distance races, the effort may yield fruit if the federation also sensitized the runners. Njuguna (2017) further asserted that during the launch of anti-doping campaign in Kapsabet that was graced by

various dignitaries including 800 meters Olympic champion David Rudisha, Nandi County's Governor Stephen Sang, the upcoming youthful athletes were encouraged to run clean races and avoid people pretending to help them win races through performance enhancing substances. In other words, medical counseling therapies to athletes would enhance the fight against doping in sports and thus the minimization of the vice that is almost bringing the noble sport in disrepute. In essence, the fight against doping will not be won by federations alone but through combined efforts of runners, society, governments and all the stakeholders involved for the posterity in the lives of upcoming youthful athletes. It is therefore important for the war against doping to incorporate all that matters in the society.

Sport has continued to play an important role in the lives of many and various cultures within the global arena (Connolly, 2006). Sporting activities have more value in terms of money and non-monetary incentives in sense that it serves numerous purposes including but not limited to: personal fulfilments, enjoyment and entertainments of which all has generated to multi-million dollars' business (Yesalis, E., Kopstein, N., & Bahrke, S, 2001). However, doping can interfere with the purposes that it is supposed to serve. Doping is as ancient as sport and proliferates in almost every sport today. It is every sport's association's concern today to curb this vice among their sports persons. Dissimilar to the ancient times where doping was considered moral and lawful, precise results in modern days have led to an opinion alteration concerning the expediency of doping due to its downbeat effect on both sport and individuals' especially long-distance runners' wellbeing (Baron, Martin and Magd, 2007).

Furthermore, it is well recognized that groupings other than the competing sportsmen are at high risk of using doping agents, especially steroids (Baron, Martin and Magd, 2007). It was noted that therapeutic augmentations of non-game performance (eminence of being, appearance) emerges to be extensively acknowledged among the non-athlete populace (Rose, 2007). In other words, the above has the implication on the health of the athlete as well as non-athletes. In spite of this reality, that doping is an old occurrence in sport, enhancing feat through simulated means was only proscribed in 1960s. Byson, (1990)

asserts that, doping having been posturing danger to the modern Olympic progress was only acknowledged in the 1950s and officially recognized after ten years through conception of a list of banned substances. Subsequent to an excruciating over athletes' proletarian condition, performance enhancements have moved a notch higher creating tensions with the parameter of Olympic fraternity since 1972. The occurrence is threatening the initial objectives of sport as well as integrity of clean sport and more so the wellbeing of an athlete.

According to Moller (2010), "Doping substances are primarily forms of medicine taken for their potential performance enhancing effect." In essence, whatever substance used for the purpose of enhancing performance of individual runner in the course of competition may later prompt side effect to the health of the same considering the wellbeing of the athlete. There a serious education would be of help, but without means to find the root of vice in the sport the it will be hard to fight and prevent doping in the sport. In connection to above, Moller (2010) asserted that though WADA (2013) have never desired to complicate definition of doping works to be straneous through strict description of the idea of doping, it does not but the agency doping listings has been determined without following specific measures at all. Moreover, the conditions administering whether substance should be considered for accumulation to doping list are that it fulfills the following considerations: It must be performance enhancing; it must be injurious to the health of the runner; it must run against the spirit of the sport (Moller, 2010).

In addition to Moller (ibid), Hermann, and Henneberg (2014) acknowledged that in dealing with and addressing the issue of doping or anti-doping matters, the concrete matters must be considered as pertains to the wellbeing of the athlete or runner which incorporate; athlete's health, fairness and equality; and sports should be representation of personal natural abilities. However, if doping failed to apply the above approaches, then it will fail to fulfill the truth that is embedded in the sports. The gravity of doping can be paralleled by the recent increase in structured attempt to combat doping in sport. The first level towards a globalized effort through creation of WADA in 1999 in which it established Anti-doping Code being the response to scandals that were witnessed in

various disciplines of the sports such as cycling, athletics and many more to mention but a few (Dauncey and Hare, 2013).

Anti-doping movement is premised on the detection and prevention with the initial emphasis being on detection yet organizational systems and standards that operate process had been put in place with sole purpose to guarantee observance with the anti-doping regulations (Houlihan, 2002). In this case, detection depends on the testing in which since time immemorial when anti-doping code was introducing has been the case. In addition to Houlihan, Haugen (2004) argued that making testing helpful as deterrence approach, either the multiple of tests performed or the sanctions forced have to be augmented drastically, potentially to the intensity that is virtually not realistic. In other words, as Houlihan and Haugen (ibid) put forth the sentiments, it would be of significance if the WADA and stakeholder devices other means of deterrence rather than the monotony of testing that is not yielding more fruit in combatting the vice of doping in sports. It would be wise if they dealt with the behaviour and attitude of athletes or runners with sole purpose to educate them on the side effects on health as a result of performance enhancing substance.

Ring, Kavussanu, Simms, & Mazanov (2018) in their study compared the influence of a range of situational 3 factors (costs and benefits) on projected doping likelihood within the framework of anti-doping measures. Using a cross-sectional design, the study finding showed that projected doping likelihood varied considerably among the athletes depending on the cost and benefits decision-making that they carried within the existing anti-doping measures. Furthermore, the findings revealed that doping within the existing anti-doping measures is least likely when athletes perceive that they have high chances of being caught. In contrast, doping is most likely when athletes perceive that the benefits of career advancement and financial gain far outweigh the cost of doping.

A similar study by Ring, Kavussanu, Lucidi and Hurst (2018) examined the role of moral self-regulatory efficacy and moral disengagement on athletes' doping likelihood in situations representing potential benefits and costs for themselves using a cross-sectional

design. Results indicated that doping more likely in benefit situations than in cost situations. Doping was also found to be negatively correlated with self-regulatory efficacy of anti-doping measures. The findings concluded that effectiveness of anti-doping measures does not depend on how they are effect only but on situational costs and benefits that athletes conduct in light of their wellbeing.

2.6 Research Gaps in Existence of Socio-Economic Effects of Doping in Sports

Henne, Koh and McDermott (2013) asserted that anti-doping regulation in sports has turned out to be a vital component of the modern-day sport, handing over what substances and techniques athletes may perhaps utilize. Even though this structure of rule is often identical with proscription of performance enhancing substances and systems, the World Anti-Doping Agency (WADA), the global power charged with creating policies on substance use in sports also controls unlawful substances, as well as those regarded as non-performance enhancing. However, one gap existing in the opinion of the current researcher is that overemphasis on doping detection and punitive measures through banning those found culpable over education, health, social/economic and related implication of doping on the wellbeing of the youthful athletes or long-distance runners is futile.

Based on the comprehensive literature review and based on the previous studies the study identified the following research gaps. Ring, Kavussanu and Hurst (2018) stated that majority of studies on doping have been conducted with a bias towards knowledge, attributed and practices of athletes in regards to doping. This aspect is emphasized by Berbecaru, Stănescu Vâjială and Epuran (2014) who argued that besides focusing on athletes, most of studies in recent times have focused on the athlete's coaches, personnel and other support personnel attitudes, knowledge towards doping? To this extent, Kegelaers, Wylleman, De Brandt, Van Rossem & Rosier (2018) not only recommends the need for more studies in doping to focus on doping from a development approach as doping occurs within a myriad of factors and situations that only looking at doping from

the psychology, medical, sport science and sociology may not necessarily contribute to understand of doping holistically.

Further, reviewed studies show that both local and globally, most of the studies on doping have not included moderating factors in the study model. In this regard, Westmattelmann, Dreiskämper, Strauß, Schewe & Plass (2018), suggest that age of athletes and education status are some of the most important factors that moderates athletes on matters anti-doping practices This study therefore intended to fill these pertinent gaps in literature by delving on socio-economic effects of doping on wellbeing of youthfull long-distance runners via age and education status as moderating variables. This study adds value to existing literature by providing empirical evidence on the role of moderating factor on the relationship between doping and wellbeing of long-distance runners.

2.7 Critique of Existing Literature

Prakash (2013) acknowledged that there was a little data as in concerns of PEDs use in sports. However, personal and incidental information revealed that the the use of PEDs was prevalent among the young population of athletes. In reference to Prakash (2016), the researcher in the current study would assert that despite the efforts put in place by WADA and other related National anti-doping agencies to promote clean sports, much more is still needed to impart morality and values among the young people that will enable them understand the danger of using the proscribed substances. Through such concerted efforts by the stakeholders such as governments, coaches, federations' heads and bodies mandated to fight doping, it is herein hoped that young people will understand the health effects of doping. Prakash (2013) lamented by acknowledging that many medical practitioners have always dealt with young athletes even the children. Th question that was emanating from Prakash's lamentation was "where was the ethical framework in which the professional medical practitioners should deal with young people?" In essence, there is need for the moral framework to be in place to give a guideline for medical practitioners because among them might be rogue who may initiate the young people into

using PEDs and before realization, the serious damage would have occurred beyond repair.

Kegelaers, Wylleman, De Brandt, Van Rossem & Rosier (2018) conducted a cross-sectional descriptive study on the incentives and deterrent for doping within the development studies perspective. The results indicated that doping is facilitated by different push and pull factors within the socio-economic context. Anti-doping measures were were suggested with socio-economic background. Although the study enhances the knowledge of doping within socio-economic effects, it falls short of including important individual factors (moderating factors) that moderates the effects of social and economic factors of doping.

Ring, Kavussanu, Simms & Mazanov (2018) carried out a study whose aim was to investigate the role of situational costs and situational benefits on doping likelihood within existing anti-doping measures and framework. By use of quantitative approaches, the study revealed that doping among athletes occurs within the context of situational cost-benefit analysis. This study demonstrates the importance of economic and social factors in ensuring the effective establishment of anti-doping measures. However, it was limited to athletes in general, and may not necessarily be limited to doping amongst long-distance runners where doping may happen in different socio-economic cost- benefits. This gap is addressed in the current study.

Janssen (2013) did a study whose aim was to establish the impact of Athletics on Youth Empowerment by focusing on Iten Town, Elgeiyo Marakwet County, Kenya. The results show that firms that have athletic has contributed to the empowerment of youths and their families. However, the study did not include athletes who use banned substance thus the findings cannot be used to analyzed the role of banned substance on the economic wellbeing of long-distance runners, and hence the need for the current study.

2.8 Summary of Literature

This chapter evolved around theoretical and empirical literature review. More so, the researcher examined the previous works done by scholars as well as experienced men and women who have been in the field for long time. The researcher explored various theories that entailed human development, entitlement theory, hierarchy of needs theory as well stating the research gaps on socio-effects of doping on the wellbeing. Through the study, the researcher realized that doping has been related to detection, testing and disciplinary measures of which according to her it has been overemphasized over socio-economic effects of doping and how it impacts wellbeing of athletes. In chapter three, the researcher will give a detailed outline on how she will carry out the study in the field.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter identifies the methodology that explains how the research was done. This includes the research, the population of the study, sample size and sampling technique, data collection procedure, reliability and variability, measurement and analytical techniques.

This study was approached from a positivism philosophy point of view. According to Kothari & Garg (2014), the positivism school of thought is grounded on the philosophy that only one reality exist though can only be known imperfectly due to human limitations and researchers can only discover this reality within the realm of probability. Creswell (2014) adds that according to the school of thought, the researcher and the subjects are independent; influence each other or outcome. Thus, the researcher applied objectivity by remaining neutral to prevent values and biasness from influencing the outcome. This study was achieved by applying scientific research approaches from sampling to analysis and interpretation. Positivism approaches vouch for experimental methods of data collection which can be modified as it is challenging to subject human to conditions.

3.2 Research Design

Research design is an arrangement of conditions for collection and analysis of data in a way that combines their relationship with the purpose of the research (Sapsford &Jupp, 2016). It is a means to achieve the research objectives through empirical evidence that is required economically. The choice of design is determined by research purpose as described by the research problems and questions, categories of data needed, sources of data and cost factors (Creswell, 2014).

Research designs are broadly categorized into experimental and non-experimental designs. Non-experimental research designs can be either cross-sectional or longitudinal. In a cross-sectional research design, all the data is collected at one point in time while in longitudinal research designs, data are collected at two or more points in time. The study applied cross-sectional study design for the reason that data was only collected at one point in time from the youthful long-distance runners.

Cross-sectional survey designs can also be categorized into descriptive designs and correlational design. Descriptive study design is concerned with description of the characteristics of the variables or units of analysis of interest. A correlation study design on the other hand is concerned with whether two or more variables or units of analysis have a relationship. This means that correlational study design can help determine if an increase or change in one variable can cause a change in the other variable.

The study applied cross-sectional survey design to guide the study and assist in the collection of data to answer the research questions. Creswell (2014) states that the way research questions are stated determines the most appropriate choice of study design. Due to the relational nature of the objectives / hypotheses, the study adopted cross-sectional survey design. These designs have been adopted and employed by various scholars in many doping studies. Ring, Kavussanu, Simms, and Mazanov (2018) used the design to establish the effects of situational costs and benefits on projected doping likelihood while Ring, Kavussanu, Lucidi, and Hurst (2018) used the design to examine the effects of personal and situational factors on self-referenced doping likelihood.

3.3 Target Population

The Sports Industry is highly volatile and competitive and has a very dynamic economy of its own. Consequently, athletes continually practise and improve on their winning strategies so as to remain relevant and competitive in the market. Against this realization, the present study deemed the young long-distance runners as an appropriate target population. Denscombe (2007) defines a target population as “an objective list of the

population from which the researcher can make his or her selection". The research particularly targeted 10630 elite athletes in Kenya currently registered with Athletics Kenya (2018).

Scope of events ranged from 800 to 10,000 meters track races, cross country and marathon. This was because Kenya athletes predominantly undertake middle and long-distances races as opposed to other athletic events. This target population would be critical as they would provide first-hand information key for this study. According to Athletics Kenya records (AK website, updated August 2018) there are 10,630 athletes who compete both at national and international levels in middle and long-distance races and act as key informants for the study all of whom are part of the target population.

Table 3.1: Target Population of Youthful Long-distance Runners

Training camps	**No of Athletes**
2 Running Training Camp	510
Chera Elite training camp	200
Claudio Berardelli Training Camps	160
Federico Rosa Training Camps	190
Gianni Demadona Training Camps	1120
Global Sports Training	510
HATC – Iten Training Camps	4560
LornahKiplagat Training Camp	380
Non Established Training Camps - Kapsabet	1450
Non Established Training Camps-Eldoret	730
ROSA Associates	820
Total	**9830**

(ADAK, 2018).

3.4 Sampling Frame

The study was restricted to youthful long-distance runners at the Eldoret, Iten, and Kapsabet training camps. Their scope of events range from 800 to 10,000 meters track races, cross country and marathon. The sampling frame consisted of all youthful long-distance runners in the listed training camps as at 31st July 2018. The list obtained sufficiently represented the target population.

3.5 Sample and Sampling Technique

Sampling is the process of selecting a portion, piece, or segment that is representative of a whole as an important step in the research process. This helps to inform the quality of inferences made by the researcher that stems from the underlying findings. Hussey and Hussey (2013) note that the sample should be unbiased and large enough to satisfy the needs of the research. It is always advantageous to select sampling methods that allow for the identification of a group of individuals with diverse experiences (Creswell, 2014).

3.5.1 Sample Size

Slovin (1967) provided a simplified formula to calculate sample sizes when the population under study is less than ten thousand. This formula was used to calculate the sample sizes in the table shown below. The study used a 95% confidence level, this means that if the same population is sampled on numerous occasions and interval estimates are made on each occasion, the resulting intervals would bracket the true population parameter in approximately 95% of the cases and P = 0.5 which means that the probability of the difference having happened by chance is *0.5* in 1.

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

$$n = \frac{10,630}{1 + 10,630\ (0.05)^2}$$

n = 383

To factor in the athletes who join national competition and international competition, and may have not been included in the sampling frame, the study factored for 10% of 383 thereby bringing the total sample size to 421 as shown below:

Table 3.2: Study Sample of Youthful Long-distance Runners and Administrators

Zones	**Athletes**	
	Study population	**Sample size**
2 Running Training Camp	51	20
Chera Elite training camp	20	8
Claudio Berardelli Training Camps	16	7
Federico Rosa Training Camps	19	8
Gianni Demadona Training Camps	112	44
Global Sports Training	51	20
HATC – Iten Training Camps	456	181
Lornah Kiplagat Training Camp	38	16
Non Established Training Camps - Eldoret	73	29
Non Established Training Camps - Kapsabet	145	57
ROSA Associates	82	31
Total	**1063**	**421**

(Researcher, 2018)

3.5.2 Sampling Procedure

This study sampled individuals who are information rich, specifically young athletes in Kenya currently registered with Athletics Kenya (AK) and based in training camps with scope of events ranging from 800 to 10,000 meters track races, cross country and marathon. This target population was considered critical as they would provide first-hand information since owing to their affinity with the phenomenon under investigation, active

involvement in athletics, as well as proven research background and understanding of raw data concerning destinations. The criterion for this study was participant's experience with doping either as a victim, conduit, or witness.

Stratified and snowball sampling techniques were used for the study in determining athletes to be sampled. Stratified sampling was done according to training camps to ensure that all the training camps in table 3.1 are selected for the study. It is a technique that was employed in identifying training camps in the target population and their proportion. This technique was used to ensure that the target population is divided into different strata and each stratum is represented in the sample in a proportion (Creswell, 2014).

The study also made use of the snowball sampling methods in order to enable participants to identify others who were willing to participate in the study. Snowball sampling follows naturally as a research project progresses. Snowball sampling depends on referrals from initial participants to acquire new participants. Snowball sampling is a method used where existing participants in a study can recruit prospective participants amongst their acquaintances (Creswell, 2014). The decision to include this sampling method was to ensure a robust participation from each stratum. Kothari &Garg (2014) confirmed the veracity of this method stating that snowball sampling assists in categorizing people with specific characteristics needed in a research. Some of the participants were requested to recommend others who met the criteria and would be available for the study. The decision to include this sampling method was to ensure a robust participation from each subgroup. Creswell (2014) confirmed the veracity of this method and further inferred that snowball sampling assists in categorizing people with specific characteristics needed in a research. Some of the participants were requested to recommend others who met the criteria and would be available for the study.

In the current study, interviewees were asked for referrals to other individuals who may be able to provide rich information or who could provide good examples for study and who are good interview subjects. Therefore, assistance was needed in recruiting survey

respondents, thus initiating a referral chain using the snowball sampling technique to develop an appropriate sample size (Kothari & Garg, 2014).

3.6 Data Collection Instruments

The data collection the study was only limited to the registered long-distance runners within the camps in western, Rift valley and Nairobi county. This was necessary as these athletes compete in national and international competitions. The study used researcher quantitative methodology, which was biased towards cross-sectional studies. The study applied correlation design embedded in cross-sectional study design (cross-sectional correlation design) to collect data to answer the research questions. The research study used the following research instruments to elicit information for the study.

3.6.1 Questionnaire for Athletes

The data was collected using questionnaires. A questionnaire is a formalized list of questions that are to solicit information from respondents. In this research the researcher used both structured and unstructured questions to gather information. Structured or closed ended questions are meant to save the respondents' time and get a lot of information.

Copper and Schindler (2003), stated that structured questions collect as much information as possible from the limited space form. Open-ended or unstructured questions on the other hand are meant to ensure that feelings are not disregarded and further explanations are made. Therefore, the questions were unstructured to enable the researcher get information, ideas, opinions and thoughts of the various athletes. Besides, unstructured questions gave room to the respondents to give an in-depth response without holding back and revealing as much information as possible. The questionnaire method was used because it would provide greater uniformity situations as respondents respond to the same standardized questions. This technique gave the respondents enough time to respond within a certain period of time. The element of anonymity with the questionnaire survey

technique enhanced the chance of getting honest answers and therefore, ensured that the study was appropriate and very efficient.

3.7 Data Collection Procedure

Before proceeding to conduct the study, an introductory letter was obtained from the JKUAT board of post-graduate studies. A permit was sought from the National Commission for Science, Technology and Innovation (NACOSTI) offices in order to carry out research. The researcher then communicated with the respective training camps administrators for permission to seek for assent and consent from the runners to participate in the study.

3.8 Pilot Study

A pilot study is important as it brings out the design of a proposed experiment or procedure and this can then be addressed and resources expended on large-scale studies. A pilot study is the pre-testing or 'trying out' of a particular research instrument (Baker 1994). A pilot study discards all unnecessary, difficult or ambiguous questions and establishes that replies can be interpreted in terms of the information that is required (Peat 2002). Before collecting data, the researcher carried out a pilot study in Nyahururu training camps; the training camps involved for the piloting would not be part of the camps for the main study. The pilot study was necessary to refine the research. It was a small experiment designed to test logistics and gather information prior to the research study. The intention was to improve quality and efficiency of the data collection tools. A total of 42 athletes from Mombasa county participated in pilot study.

3.8.1 Reliability of the Research Instruments

Reliability refers to the accuracy and precision of a measurement procedure. It measures the degree to which a research instrument gives consistency use, inaccuracy in scoring by the researcher and finally, unexplained errors to be determined (Orodho, 2012). In order to have reliability, this study used triangulation techniques as proposed by Creswell

(2014). Cronbach's alpha was developed by Lee Cronbach in (1951) to provide a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1. Internal consistency describes the extent to which all the items in a test measure the same concept or construct and hence it is connected to the inter-relatedness of the items within the test. Internal consistency should be determined before a test can be employed for research or examination purposes to ensure validity (Tavakol, 2011). Cronbach's alpha basic equation measure which is an extension of the KuderRichardson formula 20 (KR-20), reliability coefficient of internal consistency was determined and given by equation 3.3.

$$\mathrm{KR}-20=(K)$$

Where,

KR-20 = Reliability coefficient of internal consistency

K = Number of questions used tomeasure the reliability

∑S2 = Total variance of overall scores on the entire test

S2 = Variance of scores on each question

Various scholars have proposed different cut-off points for Cronbach's alpha. Reynolds et al. (2011), propose a cut of 0.6 as satisfactory to show that a research instrument is reliable for use. However, according to Andy (2014), reliability score of 0.7 and above is acceptable. In the current study, to ensure commendable reliability, the study adopted the cut-off of 0.7 for all the study independent and dependent variables. The study results indicated that all the independent and dependent variables had a Cronbach's alpha of more than 0.7 indicating that the study instrument was reliable. Therefore, the internal consistency reliability of the measure was excellent. This indicates that questionnaire was reliable since an alpha coefficient higher than 0.70 for all the variables signifies that the

gathered data has a relatively high internal consistency and could be generalized to reflect the respondent's opinions on the study problem.

Table 3.3: Cronbach's Alpha Coefficient Results

Variable	Cronbach's Alpha	No of items	Comments
Sustainability costs	0.9238	9	Valid
Economic costs	0.919	6	Valid
Social status	0.9295	6	Valid
Anti-doping measures	0.793	7	Valid
Wellbeing	0.9523	10	Valid
Average Cronbach Alpha for all variables	0.9035	38	Valid

3.8.2 Validity of the Research Instruments

According to Yin (2003) and Orodho (2012), validity refers to the degree to which a test measures what it purports to measure. Validity is an important characteristic of a scientific instrument. It is correlation of a test with some outside independent criteria which are regarded by experts as the best measure of the trait. Yin (2003) and Orodho (2009) tend to concur that validity is concerned with general ability. When a test is valid, it means that its conclusion can be generalized in relation to the general population. To ensure validity of the instruments, content validity of the research instruments was done to ensure that the instrument gathers the information the study purports to collect (Creswell, 2013). In this case, measures used were reviewed by a panel of academicians, experts, or professionals and members of the School of Communication and Development Studies on the relevancy and adequacy of the constructs. The questions were further formulated in simple language for clarity and ease of understanding.

3.9 Data management

Data analysis requires minimal bias of the data, and the results by extension. To ensure that data has minimal bias, violation of the assumptions were checked. An assumption simply refers to the condition that the model that is used for analysis actual works. The testing of these assumptions is important because if they are violated in any way the results from test statistic and p-value will not be accurate. This section provides a discussion on the assumption tests that were carried out before data analysis.

3.9.1 Linearity

ANOVA is based on the assumption of linearity of models and this assumption simple means that the outcome variable is linearity related to the independent variables. This assumptions further suggests that study predictors when combined together can be realized by addition of individual predictor's effects. Of the important assumptions, linearity is the most important as without meeting this assumptions the model becomes invalid. This mean that without meeting this assumptions results from the ANOVA model cannot be interpreted. This assumption was confirmed through normality of the data as normal data meets the assumption of heteroscedasticity and linearity.

3.9.2 Multi-collinearity

This refers to the relationship among the independent variables. Multi-collinearity exists when the independent variables are highly correlated (r=.9 and above). Multi-collinearity was checked through variance inflation factor (VIF), with VIF greater than 4 showing multi-collinearity. Singularity occurs when one independent variable is actually a combination of other independent variables (e.g. when both subscale scores and the total score of a scale are included). Multiple regression doesn't like multi-collinearity or singularity and these certainly don't contribute to a good regression model, so multi-collinearity was checked before data analysis.

3.9.3 Normality

This refers to various aspects of the distribution of scores and the nature of the underlying relationship between the variables. The importance of normal distribution is because the accuracy of a parameter around confidence interval and significant testes of models is dependent on normal distribution. The study used Skewness and Kurtosis to check normality of distribution.

3.9.4 Heteroscedasticity

These assumption relates to variance in the model, and as such it is also called homogeneity of variance. This refers to the "sameness" of the spread of scores of the mean around each of the study variables. Inequality in spread of score affected the bias associated with stand errors of the variables affecting the accuracy of confidence interval. In designs in which you test several groups of participants this assumption means that each of these samples comes from populations with the same variance. In correlational designs, this assumption means that the variance of the outcome variable should be stable at all levels of the predictor variable. In other words, as you go through levels of the predictor variable, the variance of the outcome variable should not change. This assumption was confirmed through normality of the data as normal data meets the assumption of heteroscedasticity and linearity.

3.9.5 The Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin (KMO)

The Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin (KMO) are the preferred statistical tools to check the suitability of data for factor analysis. The study used KMO to check if the data was appropriate for factor analysis. A rule of thumb is that a low KMO between 0-0.4 shows that the data is not appropriate for analysis while KMO values between 0.5 and 1 show that the data is appropriate.

3.10 Data Analysis and Presentation

Data collected from questionnaires were analyzed along the research objectives. Description was derived from responses of the questionnaires then put in categories and calculated into percentages of responses from each category and statements were made of each result. The findings are identified and concluded according to the objectives of the study (Creswell, 2014). The method would help in summarizing the reports and drawing conclusions from the respondents in the study. Hair et al., (2006) suggests that analysis can be used to test the existence of relationships among the variables, the strength of relationships, and determine the structure of the relationship among the independent variables and the dependent variable. Therefore, the method is well suited to address the objectives of the study.

3.10.1 Multiple Linear Regression Model

It is a form of predictive modeling technique which investigates the relationship between a dependent (target) and independent variables (predictor) (Malhotra, 2007). Regression was used since it indicates the significant relationships between dependent variable and independent variable and shows the strength of impact of multiple independent variables on a dependent variable. In this study, a multiple regression analysis was used to depict the connection between the various variables given by equation. Multiple regression analysis is used when one is interested in predicting a continuous dependent variable from a number of independent variables.

3.10.2 Model Specification

ANOVA model shows the percentage of the total variation of the dependent variable that can be explained by the independent variables and this is assessed using the coefficient of determination (R^2) which is used for judging the explanatory power of the linear regression of dependent variable on independent variables. R^2 is a measure of the goodness of fit of the regression line to the observed sample values of dependent and

independent variables. The R^2 can range from 0.0 to 1.0, with 1.0 showing a perfect fit that indicates that each point is on the line (Carver et al., 2009).

The ANOVA model was appropriate in this study because the assumptions of ANOVA were met and also because the researcher had one single dependent variable that is the wellbeing of youthful long-distance runners in Kenya, and this was presumed to be the function of several independent variables of socio-economic effects of doping: sustainability costs, economic costs, social status, and anti-doping measures.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where,

β0 – co-efficient of the constant variable,

β1, β2, β3, and β4 – are regression coefficients;

X1–Sustainability costs;
X2–Economic costs;

X3–Social status;

X4 –Anti-doping measures;

Y –wellbeing of youthful long-distance runners and

ε- Error term.

3.10.3 Moderating Influence of Age, Gender and Education Level on the Relationship between Socio-Economic Effects of Doping and Wellbeing of Youthful Long-distance Runners.

The study used SPSS to test for the moderating effect of age, gender and education status on the study independent and dependent variables through multiple moderated model.

Moderating effect socio-demographic characteristics was tested via regression co-efficient and the R2 which was used to test the effect size of moderating variable.

Moderating Influence of Age on the Relationship between Socio-Economic Effects of Doping and Wellbeing of Youthful Long-distance Runners.

To establish whether age has a moderating effect on the relationship between socio-economic effects of doping and wellbeing of youthful long-distance runners in Kenya, a moderating model was applied

To achieve this objective, this study was guided by the moderated multiple regression model (MMR) showing the interactions age of the firm with the dependent and independent variables in this study;

$Y = \beta 0 + \beta_1 X_1 + \beta_5 X_5 + \varepsilon$, …….. (ii)

Where $\beta 0 + \beta_1 X_1$ represents socio-economic effects of doping variables.

$\beta_5 X_5$ the representing moderating variable(age) with X_5 representing age and β_5 representing regression coefficient for age of the youthful long-distance runners.

$Y = \beta 0 + \beta_1 X_1 + \beta_5 X_5 + \beta_{15} X_{15} + \varepsilon$, …….(iii)

Where the moderating effect of age has been included in the model with $\beta_{15} X_{15}$ representing interaction effect between age and socio-economic effects of doping.

Moderating Influence of Education Level on the Relationship between Socio-Economic Effects of Doping and Wellbeing of Youthful Long-distance Runners.

To establish whether education level has a moderating effect on the relationship between socio-economic effects of doping and wellbeing of youthful long-distance runners in Kenya, a moderating model was applied.

To achieve this objective, this study was guided by the moderated multiple regression model (MMR) showing the interactions education level of the firm with the dependent and independent variables in this study;

$Y = \beta 0 + \beta_1 X_1 + \beta_6 X_6 + \varepsilon$, …….. (ii)

Where $\beta 0 + \beta_1 X_1$ represents socio-economic effects of doping variables.

$B_6 X_6$the representing moderating variable (education level) with X_6 representing age and $\square_6$ representing regression coefficient for education level of the youthful long-distance runners.

$Y = \beta 0 + \beta_1 X_1 + \beta_6 X_6 + \beta_{16} X_{16} + \varepsilon$, …….(iii)

Where, the moderating effect of education level has been included in the model with $\beta_{16} X_{16}$ representing interaction effect between education level and socio-economic effects of doping.

Moderating Influence of gender on the Relationship between Socio-Economic Effects of Doping and Wellbeing of Youthful Long-distance Runners.

To establish whether gender has a moderating effect on the relationship between socio-economic effects of doping and wellbeing of youthful long-distance runners in Kenya, a moderating model was applied.

To achieve this objective, this study was guided by the moderated multiple regression model (MMR) showing the interactions education level of the firm with the dependent and independent variables in this study;

$Y = \beta 0 + \beta_1 X_1 + \beta_7 X_7 + \varepsilon$, …….. (ii)

Where $\beta 0 + \beta_1 X_1$ represents socio-economic effects of doping variables.

$B_6X_6$the representing moderating variable (gender) with X_6 representing age and $\square_6$ representing regression coefficient for education level of the youthful long-distance runners.

$Y = \beta 0 + \beta_1 X_1 + \beta_7 X_7 + \beta_{17} X_{17} + \varepsilon$, …….(iii)

Where, the moderating effect of gender has been included in the model with $\beta_{17}X_{17}$ representing interaction effect between gender and socio-economic effects of doping.

3.10.4 Variable Definition and Measurement

Operationalization is the process of strictly defining variables to be used in study (Sekaran, 2006). Variables were operationalized to ensure that key variables are identified and together with sub variables (sub concepts) and described according to what they measure. A measuring scale was used. A scale is a tool or a mechanism which individual are distinguished as how they differ from another variable of the study (Weiss et al., 2001). Likert scales are used as the main scale of measurement. The study used a Likert scale for item analysis to determine the socio-economic effects of doping on the youthful long-distance runners' wellbeing. The assessment was done using the 5-point scale on the questionnaire. Patton (2002) showed that Likert scale was easy to use in respondent studies. The assessment were done using the 5-point scale on the questionnaire. Patton (2002) showed that Likert scale was easy to use in respondent studies.

Table 3.4: Operationalization of Variables

Concept	Variable	Variable Definition	Indicator
Sustainability costs	a) Sustainable access b) Sustainable information c) Sustainable use d)	Cost of accessibility Information on doping Ability to conceal PES use	Influence sources Information sources Cover-up practices
Economic status	a) Financial status b) Investment status	Financial security Assets of the athlete	Income Asset index
Social Status	a) Family standing b) Societal status	Status in family circles Status in social circles	Family honour Societal honour
Professional Status	a) Professional segregation b) Professional enhancement	Punitive measures of anti-doping Benefits of doping	Social costs Social benefits of doping
Wellbeing	a) meet social obligations b) meet family obligations c) meet basics of life	Ability to meet social obligations Ability to meet family responsibilities Ability to life necessities	Social wellbeing Family responsibilities Basics needs
Gender	Gender of Respondents	Gender of respondents	Gender
Education Status	Education level of respondents	Education level	Education level
Age	Age of Respondents	Age of respondents	Age categorization

3.11 Ethical Considerations

Permission to carry out the research was obtained from the relevant authorities as required by law and the principles of research. All the ethical issues relating to informed consent and confidentiality were adhered to. The respondents were guaranteed of their

confidentiality and thus no respondent was required to give his or her identity. All data acquired from the respondents was managed privately and confidentiality was maintained. Information on the nature and purpose of the study was expounded to the respondents as a means of providing sufficient information before they decide to participate.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter describes the findings and discussion of results of the study on socio-economic effects of doping on the wellbeing of youthful long-distance runners in Kenya. The data collected in this study was evaluated, discussed and inferences made, in an effort to address the specific objectives of the study. Descriptive and inferential statistics were used to analyze the data on each variable. Data was presented in the form of frequency distribution tables to facilitate description and explanation of the study findings. The inferential statistical analysis was conducted for the purposes of testing hypotheses that were stated in chapter one and determining the relationship between independent, moderating and dependent variables. Data analysis was in line with specific objectives where patterns were investigated, interpreted and implications drawn on them. Data was presented in figures and frequency tables. The researcher tested reliability and regression model results were provided. Hypotheses were tested for all the independent variables and presented in this chapter.

4.2 Response Rate

Mugenda and Mugenda (2003) and Duncan *et al.* (2015), observed that a 50% response rate is adequate, 60% good and above, while 80% is rated as excellent. Based on this assertion, the response rate of 94.3% in this case is therefore excellent and is considered satisfactory to make conclusions for the study. Studies by Theuri*et al*. (2015) and Duncan *et al*. (2015), obtained similar response rates hence adequate.

Table 4.1: Response Rate

Response	Frequency	Percentage
Filled questionnaires	397	94.30%
Unfilled questionnaires	24	5.70%
Total	421	100.00%

The recorded high response rate as shown in Table 4.1 was attributed to the data collection procedures, where the researcher pre-notified the potential participants of the intended survey and utilized a self-administered questionnaire where the respondents completed and immediately after, they were picked. Follow up calls were also made to clarify queries in the questionnaires. Out of the selected 421 participants, 24 (5.7%) refused to participate in the study due to sensitivity of the study, even after assurance from the researcher.

4.3 Demographic Characteristics

The section describes the general characteristics of the respondents in terms of gender, age, level of education, weight of athletes, length of time as an athlete and major athletic discipline of respondents.

Results on gender of respondents are presented in table 4.2. Male respondents constituted 52.39% while the female was 47.61 %. This demonstrates that the representation of both genders are equitably represented. The obtained results allowed a meaningful comparison of potential doping behavior between the two groups. The findings aligned with the results by Sekulic, Tahiraj, Zvan, Zenic, Uljevic and Lesnik B. (2016) that males represent a slight majority of long-distance runners in Kenya.

This implies that gender as a construct can be useful in analyzing how doping among athletes and their wellbeing differs. This is important as an equal representation does not allow for biases in results to one gender when testing for moderating effect of gender among youthful long-distance runners.

Table 4.2: Gender of Respondents

Gender of respondent	Frequency	Percent
Male	208	52.39
Female	189	47.61
Total	**397**	**100.00**

The findings in table 4.3 demonstrate that 50.67% of the respondents were between 21-25 years, 30.22% were above 25 years, 18.65% were between 16-20 years and 0.46% were below 16 years. These results confirm the findings of Chebet (2014) that most of the middle and long-distance runners are below 25 years of age.

These findings imply that the most the athletes were approaching their peak age in long-distance running. This is significant in the study as most athletes are susceptible to doping as they near peak age or past peak age. Hence it can be concluded that proper views of athletes on doping was realized from the athletes, as majority were nearing or past their peak age.

Table 4.3: Age of Respondents

Age of Respondents	Frequency	%
10-15 Years	2	0.46%
16-20 Years	74	18.65%
21-25 Years	201	50.67%
Above 25 Years	120	30.22%
Total	**397**	**100.00%**

Results obtained in table 4.4 shows that the 61.96% of the respondents had secondary level of education, 15.62% had college level of education, 21.66% had primary level of education 0.76% were degree holders. This demonstrates high literacy levels amongst youthful long-distance runners in Kenya. This concurs with the results by Janssen (2013) that indicated that majority of athletes in Iten have at least secondary level of education.

These results suggest that the long-distance runners are in a position to access doping information, receive anti-doping information and process such information for their use themselves. Hence, the participant's views on sustainability cost and anti-doping measures are deemed as credible and reliable.

Table 4.4: Level of Education of respondents

Level of Education	Frequency	%
Primary	86	21.66%
Secondary	246	61.96%
College	62	15.62%
Degree	3	0.76%
Total	**379**	**100.00**

The findings in table 4.5 indicates that 53.15% of the respondents have between 6-10 years' experience while 37.28% and 9.57% have 0-5 years and above 15 years respectively. This shows that most of the athletes have been running for a relatively long period of time. This concurs with the result by Mukhwana (2015) which established that majority of the interviewed male elite runners in Kenya have between five to nine years experiences in national and international competitions.

This highlights that most of the respondents had developed some form of support network and systems that are determinants of the likelihood, susceptibility and doping behavior of athletes. The variation of the item also demonstrates the importance of year of experience as a covariate of age.

Table 4.5::Years of Experience in Athletics of respondents

Years of Experience in Athletics	Frequency	%
0-5 Years	148	37.28%
6-10 Years	211	53.15%
Above 15 Years	38	9.57%
Total	**379**	**100**

Results in table 4.6 revealed that 40.05% of the respondents were aware of the cost of doping while 59.95% considered themselves unaware of the cost of doping. It can therefore be concluded that there exists some level of knowledge on banned substance amongst the respondents. This concurs with the WADA (2012) reports that indicated medium level of knowledge on banned substances amongst athletes in Kenya.

These suggests that there exist avenues for sustainability costs of doping amongst the youthful long-distance runners in Kenya. Thus, the respondent's views on sustainability costs are deemed credible.

Table 4.6 : Knowledge of Cost of any Method or Substance Doping used for doping

	Frequency	**%**
No	238	59.95%
Yes	159	40.05%
Total	**379**	**100.00%**

The findings in table 4.7 reveal that 52.65% of the athletes consider doping as difficult, 22.42% as impossible, 14.86% as easy and 11.34% as difficult. Therefore, the study concludes that the athletes consider doping as difficult to undertake. This supports the assertion of Mazzeo, Altavilla, D'elia & Raiola (2018) that effecting a doping procedure is relatively difficult in developing countries than in developed countries.

Table 4.7: Doping Difficulty

Doping Difficulty	**Frequency**	**%**
Impossible	89	22.42%
Difficult	209	52.65%
Easy	82	20.65%
Do not know	17	4.28%
Total	**397**	**100.00%**

Majority of the respondents stated that doping is difficult. This likely suggest that negative attitude towards doping still exists amongst youthful long-distance runners. This can be

attributed to the reason that doping is considered as a professional misconduct with potential ramifications on athlete's livelihood, professional image, family and social status. Hence it can be concluded that buy-in of doping is still low amongst most of the athletes. This concurs with the assertion by Sekulic, Tahiraj, Zvan, Zenic, Uljevic and Lesnik (2016) that youthful athletes consider doping to be difficult as compared to older athletes. A study by Tshube, Akpata & Irwin (2012) conducted among elite athletes established that doping is not considered difficult.

Although most athletes felt that doping is difficult, few athletes consider doping as easy. This is an evidence of existence of doping facilitators within the proximal and geographical location of long-distance athletes. Thus, it can be concluded that sustainability of information and access is much possible in Kenya. This echoes the findings of WADA (2012) that doping substances are easily accessed from pharmacies and other health facilities within the athlete's place of residence.

4.4 Tests of Regression Analysis Assumptions

The study performed tests of statistical assumptions i.e. test of regression assumption and statistic used. This included test of normality, linearity, independence, homogeneity and collinearity. In order to establish the validity of study variables, tests of sampling adequacy were used. This enabled the study to identify whether the items were appropriate for further analysis. Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy measures the sample adequacy of each variable in the model. Kaiser-Meyer-Olkin (KMO) Test is a measure of how suited your data is for Factor Analysis. The test measures sampling adequacy for each variable in the model and for the complete model (Kothari &Garg, 2014). Ali et al. (2016) showed that the KMO index ranges from 0 to 1, with 0.5 and above considered suitable for factor analysis. The Bartlett's Test of Sphericity should be significant at $p<0.05$ for factor analysis to be suitable. The formula for the KMO test is

$$\mathrm{MO}_j = \frac{\sum \mathrm{jr}^2\mathrm{ij}}{\sum \mathrm{jr}^2\mathrm{ij} + \sum \mathrm{jr}^u}$$

where:

R = [r] is the correlation matrix and

U = [u] is the partial covariance matrix.

This test is not usually calculated by hand, because of the complexity and SPSS was used to calculate the KMO test. The table below shows Kaiser-Meyer-Olkin (KMO) test of sampling adequacy and Bartlett's test of sphericity.

Table 4.8: Kaiser-Meyer-Olkin (KMO) and Bartlett's Test (Primary data)

Variable	KMO Test		Bartlett's Test of Sphericity	
	KMO Test	Approx. Chi-Square	df	Sig
Sustainability costs	.864	2664.710	105	.000
Economic costs	.791	1599.411	15	.000
Social status	.830	2067.309	15	.000
Anti-doping measures	.728	1034.780	21	.000
Wellbeing	.881	4591.686	45	.000

The primary data test results on table 4.8 show that the scales had values above the threshold of 0.7 sustainability costs (0.864), economic costs (0.791), social status (0.830), and anti-doping measures (0.728). Bartlett's Test of sphericity which analyzes if the samples are from populations with equal variances produced p-values less than .05 ($p < .001$) thus indicating an acceptable degree of sampling adequacy. The Bartlett's Test of Sphericity result is 0.000 which shows high significance. Rusuli et al. (2013) explained that Measure of Sampling Adequacy should exceed 0.5 and for Bartlett's test of Sphericity the p-value should be less than 0.05 while Williams (2012) stated that KMO of 0.50 is acceptable degree for sampling adequacy with values above 0.5 being better.

Normality was used to test for significance and construction of confidence interval estimates of the parameters. The assumption is that the variables are normally distributed. In their study, Ali et al. (2016) showed that the assumptions and application of statistical tools as well as suitability of the tests are important aspects for statistical analysis. Results Measures of skewness is based on mean and median while kurtosis measures the peaked-ness of the curve of the frequency distribution (Kothari & Garg, 2014). To check for normality, the study adopted the Skewness and Kurtosis test and Auto correlation test. The results are presented in Table 4.9.

Table 4.9: Overall Skewness and Kurtosis Test

Variables	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Sustainability costs	397	-.434	.122	-1.043	.244
Economic costs	397	-0.879	0.122	-0.709	0.244
Social status	397	0.742	0.122	-0.951	0.244
Anti-doping measures	397	.550	-.505	0.122	-.251

Results of the normality test on skewness coefficient and Kurtosis' coefficient of the study variables show sustainability costs (-.434 and -1.043), economic costs (-0.879 and-0.709), social status (-0.742 and-0.951), and anti-doping measures (.550 and-0.122). Based on these results, it was concluded that data was normally distributed since their statistic values were between -1 and +1.

Autocorrelation also known as serial correlation occurs when the error term observation in a regression are correlated. One approach of detecting is using the Durbin Watson test statistics. The size of Durbin Watson statistic depends on the number of predictors and number of observations. The rule thumb, values less than 1 or greater than 3 are cause for concern (Karithe, 2006) table 4.10 below represents the Durbin Watson test model. Independence of the variables test was carried out. Durbin Watson value of 1.765 indicates that the model did not suffer from auto correlation since it is greater than 1 and less than 3. Hence there was independence of the independent variables.

Table 4.10: Overall Durbin-Watson Test Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.522[a]	.273	.266	.70054	1.765

4.5 To Determine the Sustainability Costs of Doping on the Wellbeing of Youthful Long-distance Runners' in Kenya

The first objective of the study was to determine the sustainability costs of doping on the well- being of youthful long-distance runners' in Kenya. This objective was operationalized by sustainability access, sustainability information and sustainability use. Respondents were asked on sustainability access, sustainability information and sustainability use. The first results in this section focuses on descriptive statistics of sustainability costs. Results presented in table 4.11 below of descriptive findings of sustainability costs among youthful long-distance runners.

Table 4.11: Sustainability Costs Descriptive Results

Statements	N	Mean	Std. Deviation
Athletes obtain PES through doctors	397	3.41	1.122
Athletes obtain PES through friends	397	3.38	0.997
Athletes obtain PES through relatives	397	3.98	1.086
Athletes obtain PES through friends	397	3.37	1.006
Athletes obtain PES through athlete support personnel	397	3.41	1.199
Information on the use of PES is obtained from user manuals	397	3.15	1.119
Information on the use of PES is obtained from the internet	397	3.57	0.968
Information on the use of PES is obtained from fellow athletes	397	3.57	0.991
Information on the use of PES is obtained from athlete support personnel	397	3.2	1.117
Information on the use of PES is obtained from doctors	397	3.15	1.174
Athletes use other substances to conceal the use of PES	397	3.4	1.037
Athletes financially facilitate the doping control officers to conceal the use of PES	397	3.11	1.068
Athletes avoid procedural testing to conceal the use of PES	397	3.38	1.002

Key: 1.00-1.79=Strongly Disagree 1.80-2.59=Disagree 2.60-3.39=Neutral 3.40-4.19=Agree 4.20-5.00 =Strongly Agree

Findings in table 4.11 above revealed that the respondents agreed that athletes access PES through relatives, doctors and athletes support personnel (mean above 3.40). This affirms to the importance of family networks, general physician and athlete's support system as a source of influence in the lives of athletes. The findings also indicated that the athletes considered internet and fellow athletes as important sources of information on PES (mean above 3.40). This demonstrates that internet has become one of the essential sources of medical and health information besides information from peers.

The results also indicated that the respondents agreed that athletes use other substances to conceal the use of PES (mean above 3.40). The findings revealed that athletes engage in avoidance strategies primarily to sustain their continued use of banned substance. This

aligns with the findings of Overbye, Knudsen and Pfister (2013) who established that athletes use other illicit substances to conceal the use of PES.

Majority of the items on sustainable information revealed neutrality from the respondents. Majority of the items on sustainable use of doping also showed neutrality from the respondents. This suggests that the respondents attached little importance to the existing information sources and approaches of sustainable use of doping.

Principal component factor analysis (PCFA) was used in this study. The goal was to reduce a set of variables down to a smaller number of factors and to create composite scores for these factors for use in subsequent analysis (Almed 2016). Results on sustainability costs is presented in table 4.12

Table 4.12: Sustainability Costs Factor Analysis (Total Variance Explained)

	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cum %	Total	% of Variance	Cum %	Total	% of Variance	Cum %
1	4.270	47.450	47.450	4.270	47.450	47.450	3.067	34.080	34.080
2	1.149	12.772	60.222	1.149	12.772	60.222	1.878	20.872	54.953
3	1.053	11.699	71.920	1.053	11.699	71.920	1.527	16.968	71.920
4	.563	6.252	78.173						
5	.541	6.016	84.188						
6	.479	5.324	89.513						
7	.373	4.146	93.659						
8	.352	3.917	97.575						
9	.218	2.425	100.000						

Through factor analysis, the factors on: athletes obtain PES through doctors, athletes obtain PES through relatives and information on the use of PES is obtained through fellow athletes were identified as the components of sustainability costs with greatest influence, with cumulative variance of 71.920%. These factors all had an Eigen values greater than 1. These suggests that the greatest effect of sustainability costs on wellbeing occurs

through sustainable access and sustainable information. This concurs with the results by Blank, Kopp, Niedermeier Schnitzer and Schobersberger (2016) that showed that source of information significantly determines athlete's use of PES.

Rotated component matrix (loadings) is the key output of component analysis and contains estimates of the correlations between each of the variables and the estimated components. Table 4.13 below shows the rotated component matrix results for sustainability costs. Discussion is provided below the table.

Table 4.13: Sustainability Costs Rotated Component Matrix

	Sustainable access	**Sustainable information**	**Sustainable use**
Athletes obtain PES through doctors	.897	.121	.135
Athletes obtain PES through relatives	.840	.080	.163
Athletes obtain PES through athlete support personnel	.660	.387	.168
Information on the use of PES is obtained from user manuals	.241	.842	.082
Information on the use of PES is obtained from the internet	.200	.862	.103
Information on the use of PES is obtained from doctors	.771	.333	.046
Athletes use other substances to conceal the use of PES	.568	.351	.304
Athletes who use PES depend on it for training	.028	.147	.876
Athletes PES depend on PES during out- of competition season	.327	.031	.758

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

Rotated component matrix (loadings) is the key output of component analysis and contains estimates of the correlations between each of the variables and the estimated components. According to table 4.13, only the subcomponent of sustainable access had a loading of over 0.4 for all its three items while sustainable information and use only had two item each with loading over 0.4. This suggests that the variable on sustainable access had a

stronger conceptual operationalization as compared to sustainable information and sustainable use.

Descriptive data shown on Table 4.14 below indicates that sustainable access had a coefficient of 0.859; Sustainable information had a coefficient of 0.757 while sustainable use had a coefficient of 0.611. Sustainability Costs (Sustainable access, Sustainable information and Sustainable use) depicted Cronbach's alpha of 0.756 which is above the suggested value of 0.7 hence the variable construct was considered reliable.

Table 4.14: Sustainability Costs Descriptive Results

	Mean	Component Standard deviation	Cronbach Alpha
Sustainable access	3.0907	.91112	.859
Sustainable information	3.3615	.93660	.757
Sustainable use	2.9912	.90274	.611

Key: 1.00-1.79=Strongly Disagree 1.80-2.59=Disagree 2.60-3.39=Neutral 3.40-4.19=Agree 4.20-5.00 =Strongly Agree

The means on sustainability cost construct also showed that sustainability information (above 3.3) indicated level of agreement amongst the youthful long-distance runners. This implies that source of information holds great potential in the wellbeing of long-distance runners. This supports the assertion by Malek, Taylor & Mansell (2014) that information sources are valued by athletes if the athletes are satisfied with the information, they receive about using performance-enhancing substances, and they perceive the information to be reputable.

The means on sustainable access and sustainable use indicated that the respondents were neutral to the constructs (2.60-3.39). This suggests that sources of influence on PES and sustainable practices for doping behavior are not viewed as of great significance to wellbeing of youthful long-distance runners. Hence it can be concluded that sustainable

access and sustainable use of doping are of secondary value to youthful long-distance runners.

Regression analysis was conducted on the effect of sustainability costs on different components of wellbeing among youthful long-distance runners. Results are presented in the succeeding sections.

Table 4.15: Model Summary on Sustainability Cost Effect of Doping on Wellbeing Components of Young Long-Distance Runners

Dependent Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate
Family obligation	.402	0.162	0.155	0.92443
Basics of life	.276	0.076	0.069	0.97479
Social obligations	.278	0.077	0.07	0.97937

Predictors: (Constant), Enhance, Sustainable use, Professional enhancement, Family status, Sustainable information, Investment status, Society status, Sustainable access, Economic status.

Dependent variable: family obligation, social obligation and basics of life

Results in table 4.15 above indicated that the R^2 for family obligation was (0.162), Social obligation (0.077) and basic of life (0.076). The results showed that sustainability costs have a low effect on the different aspects of wellbeing. This concurs with the findings of Costa-Lobo, Cordeiro, Martins and Campina (2017) that athletes who access and use doping substance have little improvement in their subjective wellbeing (family obligation and social obligations). Contradictory findings were established by Kegelaers, Wylleman, De Brandt, Van Rossem and Rosier (2018) who found out that source of information and access to information have great impact on the athlete's quality of life.

According to Costa-Lobo, Cordeiro, Martins and Campina (2017), the use of banned substances amongst athletes can only results into remarkable improvement in an athlete's

wellbeing if it leads to winning of elite competition at both national and global stage. This is not guaranteed to athletes. Hence, it can be deduced that sustainability cost of doping may have little or no effect on the wellbeing of athletes.

Table 4.16: ANOVA Model Fit for Sustainability Costs on Wellbeing

Model		Sum of Squares	Df	Mean Square	F	Sig.
Family Obligation	Regression	64.775	3	21.592	25.266	0.000
	Residual	335.844	393	0.855		
	Total	400.619	396			
Basics of life	Regression	30.87	3	10.29	10.829	0.000
	Residual	373.436	393	0.95		
	Total	404.306	396			
Social Obligations	Regression	31.572	3	10.524	10.972	0.000
	Residual	376.954	393	0.959		
	Total	408.526	396			

Predictors: (Constant), Enhance, Sustainable use, Professional enhancement, Family status, Sustainable information, Investment status, Society status, Sustainable access, Economic status.

Dependent variable: family obligation, social obligation and basics of life

The findings in table 4.16 above indicates that the sustainable access, sustainable information and sustainable use model are significant in explaining the variation in wellbeing aspects of youthful long-distance runners (family obligation, social obligation, basics of life). This was supported by all the models having p values < 0.05 and F-statistics greater than 5. This implies that the three-regression model overall predicts family obligation, social obligation and basics of life significantly well.

Table 4.17: Regression Co-efficient for Sustainability Costs on Wellbeing Components for Youthful Long-Distance Runners in Kenya.

Dependent Variable	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Family Obligation	(Constant)	4.016	0.212		18.903	0.000
	Sustainable access	-0.342	0.064	-0.31	-5.364	0.000
	Sustainable information	-0.199	0.059	-0.185	-3.39	0.001
	Sustainable use	0.163	0.056	0.146	2.889	0.004
Basics of life	(Constant)	3.716	0.224		16.585	0.000
	Sustainable access	0.209	0.067	0.189	3.113	0.002
	Sustainable information	-0.34	0.062	-0.315	-5.491	0.000
	Sustainable use	0.085	0.059	0.076	1.427	0.154
Social Obligations	(Constant)	3.457	0.225		15.36	0.000
	Sustainable access	-0.049	0.068	-0.044	-0.728	0.467
	Sustainable information	-0.278	0.062	-0.256	-4.47	0.000

	Sustainable use	0.174	0.06	0.155	2.917	0.004

Predictors: (Constant), Enhance, Sustainable use, Professional enhancement, Family status, Sustainable information, Investment status, Society status, Sustainable access, Economic status.

Dependent variable: family obligation, social obligation and basics of life

Results in table 4.17 above, shows the effect of suitability costs on the wellbeing components of young long-distance runners in Kenya. Findings show that sustainable access on doping, sustainable information on doping and sustainable all have significant

effect on the family obligation of athletes (p-values <0.05). This suggests that athletes believe that their family responsibilities can be met through sustainable access of doping, information and use.

The findings also show that sustainable access and sustainable information on doping had statistically significant relationship with basics of life (p-value<0.05). This depicts the potential role that access of banned substances and source of information on banned substance does hold on allowing athletes to provide for life necessities. Furthermore, sustainable use of doping and sustainable information on doping had a statistically significant relationship with social obligations (p-value<0.05). This points out that the potential role that sustainable use of doping and source of information on banned substance has an effect on the athlete's ability to perform their social obligations. On sustainable access, sustainable information and sustainable use of doping affects social obligations, family obligations and basics of life provision affirms the argument by Kim and Kim (2017), that the access and use of performance enhancement substances results to both positive and negative influence on an athlete's lifestyle, family and even societal standing.

4.6 To determine the Economic Status Effect of Doping on the Wellbeing of Youthful Long-distance Runners in Kenya

The second objective of the study was to determine the economic costs of doping on the wellbeing of youthful long-distance runners' in Kenya. The objective was operationalized by two constructs namely economic status and investment status and were tested for factor analysis.

Results in table 4.18 below show that respondents agreed that investment status is enhanced through performance enhancement substances (with all statements on investment status have a mean above 3.40). The results also indicated that respondents agreed that enhanced performance helps in acquisition of funds and income security (with mean above 3.40).

Table 4.18: Economic Costs Descriptive Results

Statement	N	Mean	Std. Deviation
Enhanced performance due to the use of PES results in financial gain	397	3.35	1.033
Enhanced performance ensures acquisition of funds.	397	3.44	0.995
Enhanced performance provides income security	397	3.55	1.117
Gains from enhanced performance improves asset acquisition	397	3.44	0.977
Gains from enhanced performance improves saving ability	397	3.45	0.99
Gains from enhanced performance ensures credit worthiness of an athlete	397	3.42	0.975

Key: 1.00-1.79=Strongly Disagree 1.80-2.59=Disagree 2.60-3.39=Neutral 3.40-4.19=Agree 4.20-5.00 =Strongly Agree

The finding showed that the respondents only agreed to two statement on economic status (enhance performance through PES ensures acquisition of funds and provides income security (mean above 3.40). This suggests that athlete's view their participation in athletics as a way of improving their financial security. These results matched those found in the study by Janssen (2013) that athletics improves the financial security of runners in North Rift region. However, contradicting findings have been found by Spaaij, Farquharson and Marjoribanks (2015) who established that few athletes have improves their financial position through sports. Thus, they emphasize that sports only enhances financial positions of those athletes that win in different competitions.

The results also showed that the athletes agreed to all the statements of investment status. This demonstrates that young long-distance runners are concerned with their long-term economic security more than short term economic security. This fits within the argument that participation in sports, Costa-Lobo, Cordeiro, Martins & Campina (2017) is linked more to the economic benefits that athletes prefer in the long-term more than in the short term.

Through factor analysis, two factors were identified which had the biggest influence as economic costs with cumulative variance of 82.250%. These factors were acquisition of funds and assets acquisition. This implies that both investment status and economic status are important factors in economic empowerment of young long-distance runners in Kenya. This aligns with the findings of Janssen (2013) that revealed that athletics has contributed to youth empowerment by providing improving financial status and asset investment.

Table 4.19: Economic Costs Factor Analysis (Total Variance Explained)

	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	**Total**	**% of Variance**	**Cum %**	**Total**	**% of Variance**	**Cum %**	**Total**	**% of Variance**	**Cum %**
1	3.760	62.667	62.667	3.760	62.667	62.667	2.478	41.304	41.304
2	1.175	19.583	82.250	1.175	19.583	82.250	2.457	40.946	82.250
3	.431	7.176	89.427						
4	.265	4.424	93.851						
5	.197	3.275	97.126						
6	.172	2.874	100.000						

Extraction Method: Principal Component Analysis
a. when components are correlated, sums of squared loadings cannot be added to obtain a total variance
Key : Cum = Cumulative

Rotated component matrix (loadings) is the key output of component analysis and contains estimates of the correlations between each of the variables and the estimated components. Results of economic cost component matrix are discussed in table 4.20 below.

Table 4.20: Economic Costs Rotated Component Matrix

	Economic Status	Investment Status
Enhanced performance on use of PES results in financial gain	.897	.121
Enhanced performance ensures acquisition of funds.	.840	.080
Enhanced performance provides income security	.660	.387
Gains from enhanced performance improves asset acquisition	.241	.842
Gains from enhanced performance improves saving ability	.200	.862
Gains from enhanced performance ensures credit worthiness of an athlete	.771	.333

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

Results in table 4.20 above show that all the statement items on financial status had factor loading above 0.4 while only two factor loading for investment items had loading above 0.4. This implies that financial status had a stronger conceptual operationalization as compared to investment status.

The results in table 4.21 below, indicated that economic status had a coefficient of 0.895; while investment costs had a coefficient of 0.896. The constructs of economic status and investment status also had mean above 3.40 thus showing a level of agreement from the respondents on their importance.

Table 4.21: Economic Costs Descriptive Results

	Component		
	Mean	**Standard deviation**	**Cronbach Alpha**
To enhance economic status	3.4458	.94589	.895
To enhance investment status	3.4358	.89212	.896

Key: 1.00-1.79=Strongly Disagree 1.80-2.59=Disagree 2.60-3.39=Neutral 3.40-4.19=Agree 4.20-5.00 =Strongly Agree

The means on economic status (above 3.4) indicated a level of agreement amongst the youthful long-distance runners. This implies that enhanced economic status is considered important amongst the athletes. These results matched those found in the study by Janssen (2013) that athletics improves the financial security of runners in North Rift region. However, contradicting findings have been found by Spaaij, Farquharson and Marjoribanks (2015) who established that few athletes have improves their financial position through sports. Thus, they emphasize that sports only enhances financial positions of those athletes that win in different competitions.

The means on investment status indicated that the respondents level of agreement from the athletes(Above 3.40). This suggests that athletes consider the long-distance running as sports with ca pability of improving their investment potential. This point is emphasized in WADA (2012) report in Kenya that reveals that long-term investment gained from long-distance running is one of the major motivators for young runners.

Regression analysis was conducted on the effect of economic costs on different components of wellbeing among youthful long-distance runners. Results are presented in the succeeding sections.

Table 4.22: Model Summary on Effect of Economic Cost on the Wellbeing among Youthful Long-Distance Runners

Dependent Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate
Family obligation	.183	0.034	0.029	0.99125
Social Obligation	.500	0.25	0.246	0.87712
Basic of life	.306	0.094	0.089	0.96944

Results in table 4.22 above indicated that the R^2 for family obligation was (0.034), Social obligation (0.094) and basic of life (0.25). This implies that economic status has low effect

on the various components of wellbeing. The results showed that economic status have a low effect on the family obligation, social obligation and basics of life.

The results showed that economic costs had the highest effect on provision of basic of life for the young distance runners and the lowest effect on the family obligation and the social obligation of athletes. This implies that economic status contributes more to the wellbeing of youthful long-distance runners through provision of basic needs. Mwisukha, Njororai and Onywera (2003) states that most youths join athletes with the goal that they can be economically empowered and provide their basic needs.

Table 4.23: ANOVA Model Fit for Economic Costs on Wellbeing of Young Long-Distance Runners

Model		Sum of Squares	Df	Mean Square	F	Sig.
Family Obligations	Regression	13.483	2	6.741	6.861	0.001
	Residual	387.136	394	0.983		
	Total	400.619	396			
Basics of life	Regression	101.189	2	50.594	65.764	0.000
	Residual	303.117	394	0.769		
	Total	404.306	396			
Social Obligations	Regression	38.237	2	19.118	20.343	0.000
	Residual	370.289	394	0.94		
	Total	408.526	396			

Predictors: (Constant) Investment status, Economic status.

Dependent variable: family obligation, social obligation and basics of life

The findings in table 4.23 above indicate that the financial status and investment status model are significant in explaining the variation in wellbeing aspects of youthful long-distance runners (family obligation, social obligation, basics of life). This was supported by all the models having p values < 0.05 and F-statistics greater than 5 which implies that

the three economic status regression model overall predicts family obligation, social obligation and basics of life significantly well.

Table 4.24: Regression Co-efficient for Economic Costs Effect on Wellbeing Components of Young distance runners

Dependent Variable	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Family Obligation	(Constant)	2.050	0.220		9.331	0.000
	Financial-status	0.012	0.062	0.011	0.194	0.846
	Investment-status	0.200	0.066	0.177	3.047	0.002
Basics of life	(Constant)	1.307	0.194		6.722	0.000
	Financial-status	0.239	0.055	0.223	4.358	0.000
	Investment-status	0.391	0.058	0.346	6.741	0.000
Social Obligations	(Constant)	1.571	0.215		7.312	0.000
	Financial-status	0.120	0.061	0.111	1.977	0.049
	Investment-status	0.265	0.064	0.232	4.124	0.000

Predictors: (Constant) Investment status, Economic status.

Dependent variable: family obligation, social obligation and basics of life

From the results in table 4.24 above, it was established that investment status has a significant relationship with all the three sub-components of wellbeing of youthful long-distance runners in Kenya. This suggests that investment status contributes to the holistic wellbeing of youthful long-distance runners in Kenya. This finding corroborates the ideas of Afolayan (2012), who suggested that athletes who have investments during their athletics career have better quality of life socially and economically.

The study results in table 4.24 above also indicated that financial status of athletes is a significant predictor of basics of life and social obligation. This implies that financial status only contributes to improvement of some aspects of wellbeing. The non-significance of financial status on family obligation of youthful long-distance runners could be attributed to what Jansen (2013) called lack of regular cash flow for athletes. He asserts that athletes can only support their families and parents if they have regular finances from financial rewards won in sport competitions. In most cases, only few athletes have such regular income to support their family supporting the non-significance results.

4.7 To determine the Social Status Effects of Doping on the Wellbeing of Youthful Long-distance runners in Kenya

The third objective of the study was to determine the economic costs of doping on the wellbeing of youthful long-distance runners' in Kenya. The objective was operationalized by two constructs namely; social status and family status and were tested for factor analysis.

The findings in table 4.25 below, show that respondents agreed that family status and social status is enhanced through performance enhancement (with all statements on family status and social status having a mean above 3.40).

Table 4.25: Social Status Descriptive Results

Statements	N	Mean	Std. Deviation
Enhanced performance attracts respect of an athlete within the family.	397	3.65	1.057
Enhanced performance attracts respect of the athlete's family	397	3.56	1.037
Enhanced performance attracts honour of an athlete within the family	397	3.6	0.999
Enhanced performance attracts respect of an athlete within the society.	397	3.59	1.015
Enhanced performance attracts respect of the athlete's family within the society	397	3.55	0.977
Enhanced performance attracts honour of the athlete's family within the society	397	3.56	0.985

Key: 1.00-1.79=Strongly Disagree 1.80-2.59=Disagree 2.60-3.39=Neutral 3.40-4.19=Agree 4.20-5.00 =Strongly Agree

The findings indicated that respondents agreed that use of PES enhances family status (mean above 3.40 for all family status statements). These findings suggest that athletes consider participation in athletics as form of status mobility for the family. Some athletes in Kenya come from family with history in athletics, and their continued participation in the long-distance running is seen as maintaining or improving the family image (Mwanga, Gaudin, & Felix, 2017).

Findings in the table above also showed that athletes agreed that enhanced performance also enhances social status (all social status statements had a mean above 3.40). This implies that athletics has helped them to raise their social status. In support of this opinion Kandel (2015) stated that athletes give certain ascribed societal expectation, and thus athletes are expected to maintain and bringing given societal image to their family.

Findings in table 4.26 below show that the most important social status factors include respect of an athlete within the family and respect of an athlete within the society, all having cumulative variance of 87.813% and Eigen values greater than 1. This suggest that

both family status and societal status are important components of social status. This aligns with the results by Ring, Kavussanu, Lucidi and Hurst (2018) that social status of athletes is determined by individual, family status and media pressure.

Table 4.26: Social Status Factor Analysis (Total Variance Explained)

	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	**Total**	**% of Variance**	**Cum %**	**Total**	**% of Variance**	**Cum %**	**Total**	**% of Variance**	**Cum %**
1	4.026	67.098	67.098	4.026	67.098	67.098	2.648	44.139	44.139
2	1.243	20.715	87.813	1.243	20.715	87.813	2.620	43.674	87.813
3	.224	3.734	91.547						
4	.204	3.394	94.941						
5	.167	2.784	97.725						
6	.136	2.275	100.000						

Extraction Method: Principal Component Analysis

a. when components are correlated, sums of squared loadings cannot be added to obtain a total variance

Key : Cum = Cumulative

Results on social status factor loading in table 4.27 below shows that all both family status and societal status statements had loading above 0.4. This shows that social status (with its sub-components) has a strong conceptual definition thus they are sufficient for use in the current study.

Table 4.27: Social Status Rotated Component Matrix

	Society status	Family status
Enhanced performance attracts respect of an athlete within the family	.237	.907
Enhanced performance attracts respect of the athlete's family	.266	.886
Enhanced performance attracts honour of an athlete within the family	.264	.899
Enhanced performance attracts respect of an athlete within the society	.907	.245
Enhanced performance attracts respect of the athlete's	.900	.300
Enhanced performance attracts honour of the athlete's family	.906	.232

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Results on Table 4.28 below indicate that family status had a coefficient of 0.925 while social status had a coefficient of 0.934 which is above the suggested value of 0.7 that the variables are considered reliable.

Table 4.28: Social Status Descriptive Results

	Component		
	Mean	**Standard deviation**	**Cronbach Alpha**
Attract status in family circles	2.6054	.96190	0.925
Attracts status in social circles	2.5659	.93320	0.934

Key: 1.00-1.79=Strongly Disagree 1.80-2.59=Disagree 2.60-3.39=Neutral 3.40-4.19=Agree 4.20-5.00 =Strongly Agree

The mean on family circle (above 2.6) indicated that there is neutrality among the youthful long-distance runners. This implies that the status in the family circle is not valued much amongst the respondents. The mean on status in social circle indicated that the respondents disagreed its importance (1.80-2.59). This suggests that that athletes don't consider the status in social circles as vital.

Regression analysis was conducted on the effect of social status on different components of wellbeing among youthful long-distance runners. Results are presented in the succeeding sections.

Table 4.29 below presents the analysis of variance of the study on social status (Family status and societal Status) on wellbeing of youthful distance runners. Wellbeing included three constructs namely (family obligations, basics of life and social obligations). Results of the ANOVA test show that the model fitted between family status, societal status as independent variable and wellbeing of youthful long- distance runners in Kenya as dependent variable was significance since the p-value was less than 0.05, thus indicating that the predictor variable explains the variation in the dependent variable, which is social status (family status and social status) on wellbeing of youthful distance runners.

Table 4.29: Model Summary on the effect of Social Status on Wellbeing of Long-distance Runners

Dependent Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate
Family obligation	.288	0.083	0.079	0.9655
Social Obligation	.181	0.033	0.028	0.99632
Basics of life	.273	0.075	0.07	0.97956

Results in table 4.29 above indicated that the R^2 for family obligation was (0.079), Social obligation (0.07) and basic of life (0.028). This implies that status in the family and social circles have a greatest contribution on the subjective wellbeing of athletes in relation to family. These results also suggests that ascribed and achieved status in family and social circles results to wellbeing of youthful long-distance runners to a small extent. The point is further supported by Duncan, Hallward and Alexander (2018) who states that the ascribed and achieved the status in family and social circles results to increase in quality of life by small degree. This concurs with the findings of Földesi (2004) that athlete's status in family and social circle has contributed minimally to their wellbeing. The results

showed that status in family and social circle had a small effect on the various components of wellbeing.

Table 4.30: ANOVA Model Fit for Effect of Social Status on Wellbeing of Youthful Long-Distance Runners

Model		Sum of Squares	Df	Mean Square	F	Sig.
Family Obligation	Regression	33.335	2	16.667	17.88	0.000
	Residual	367.284	394	0.932		
	Total	400.619	396			
Basics of life	Regression	13.197	2	6.598	6.647	0.001
	Residual	391.109	394	0.993		
	Total	404.306	396			
Social Obligation	Regression	30.469	2	15.235	15.877	0.000
	Residual	378.056	394	0.96		
	Total	408.526	396			

Predictors: (Constant) Family status Society status.

Dependent variable: family obligation, social obligation and basics of life

The findings in table 4.30 above indicates that the family and societal status model are significant in explaining the variation in wellbeing aspects of youthful long-distance runners (family obligation, social obligation, basics of life). This was supported by all the models having p values < 0.05 and F-statistics greater than 5 which implies that the three-regression model overall predicts family obligation, social obligation and basics of life significantly well.

Table 4.31: Regression Co-Efficient for Social Status Effect on Wellbeing of Youthful Long-Distance Runners

Dependent Variable	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Family Obligation	(Constant)	1.983	0.159		12.465	0.000
	Family status	-0.002	0.059	-0.002	-0.028	0.978
	Society status	0.312	0.061	0.289	5.092	0.000
Basics of life	(Constant)	3.051	0.164		18.588	0.000
	Family status	-0.054	0.061	-0.051	-0.873	0.383
	Society status	0.219	0.063	0.202	3.467	0.001
Social Obligation	(Constant)	2.103	0.161		13.033	0.000
	Family status	0.024	0.06	0.022	0.393	0.694
	Society status	0.284	0.062	0.261	4.565	0.000

Predictors: (Constant) Family status Society status

Dependent variable: family obligation, social obligation and basics of life

The results in table 4.31 above showed that only societal status has a significant relationship with family obligation, basics of life and social obligation. This implies that ascribes and achieved contributes to the overall wellbeing of youthful long-distance runners. This concurs with the assertion by Mwanga, Gaudin and Felix (2017) that athletes use of PES is more driven due to the pressure and expectation that media and community has on them and this determines the quality of life that an athlete has. This concurs with the findings by Kim & Kim (2017) that the expectation and pressure from the Media (society) is likely to lead an athlete to the use PES with an aim of improving their wellbeing and those of their family members.

4.8 To Evaluate the Effects of Anti-doping Measures on the Wellbeing of Youthful Long-distance Runners in Kenya

The fourth objective of the study was to determine moderating effect of the anti-doping measures of doping on the wellbeing of youthful long-distance runners' in Kenya as. The objective was operationalized by two constructs namely: professional segregation and professional enhancement and were tested for factor analysis. Descriptive results for anti-doping measures are discussed in the succeeding sections.

Table 4.32: Anti-Doping Measures Descriptive Results

Statements	N	Mean	Std. Deviation
Enhanced performance helps the athlete to secure marketing deals.	397	3.47	1.128
Enhanced performance ensures the athlete gets cash payments or prizes.	397	3.34	1.083
Enhanced performance ensures upscaling of the athlete from one level to the other	397	3.54	1.107
The threat of suspension from the sport has reduced the use of PES by an athlete	397	4.23	0.658
The Application of the ban from the sport on the athlete is effective at deterring others from using PES	397	4.19	0.644
The withdrawal of the prize money on an athlete has a major negative effect on athletes from using PES	397	3.97	0.837
The requirement for prohibited association on an athlete deters other athletes from using PES	397	4.02	0.801

Key: 1.00-1.79=Strongly Disagree 1.80-2.59=Disagree 2.60-3.39=Neutral 3.40-4.19=Agree 4.20-5.00 =Strongly Agree

The finding show that the athletes agreed to majority of the statements on professional enhancement as shown in table 4.32 (enhanced performance helps the athlete to secure marketing deals and upscale athlete from one level to the other (mean above 3.40). This implies that long-distance runners are more concerned with building their brand for financial prosperity. These findings corroborate the results by Bouvier and Lesaule (2017) that established that athletes build their brand with an aim of attracting good commercial

contracts. These findings also suggest that athletes are characterized by the desire for personal development in their running career. Similar findings were also established by Kegelaers, Wylleman, De Brandt, Van Rossem (2018) whose results showed that desire for personal monetary / economic growth was an incentive enough for the athletes to dope.

The findings showed that athletes agreed that the professional segregation have a negative effect on the use of PES (as indicated with all statement on professional segregation having mean above 3.4). The current findings broadly replicate the findings by Blank, Kopp, Niedermeier, Schnitzer and Schobersberger (2016) that situational costs (punitive measures) are considered important by athletes in curbing doping.

The results in table 4.33 below show that securing marketing deals and the threat of suspension from sports effect on reducing the use of PES by an athlete have the biggest influence on anti-doping measures with cumulative variance of 66.538 and Eigen values greater than 1. These suggest that both aspects of anti-doping measures are important anti-doping measures. This concurs with the results by Blank, Kopp, Niedermeier Schnitzer and Schobersberger (2016) that revealed that both social benefits (professional enhancement) and social costs (professional segregation) are important factors in doping decision-making process.

Table 4. 33: Anti-Doping Measures Factor Analysis (Total Variance Explained)

	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cum %	Total	% of Variance	Cum %	Total	% of Variance	Cum %
1	2.555	36.506	36.506	2.555	36.506	36.506	2.517	35.956	35.956
2	2.102	30.032	66.538	2.102	30.032	66.538	2.141	30.582	66.538
3	.722	10.308	76.846						
4	.678	9.680	86.526						
5	.433	6.190	92.716						
6	.299	4.269	96.985						
7	.211	3.015	100.000						

Extraction Method: Principal Component Analysis
a. when components are correlated, sums of squared loadings cannot be added to obtain a total variance
Key : Cum = Cumulative

Results on social status factor loading in table 4.34 below shows that both performance enhancement and professional segregation had loading above 0.4. This shows that anti-doping measures construct (professional segregation and performance enhancement) has a strong conceptual support in the study.

Table 4.34: Anti-Doping Measures Rotated Component Matrix

	Performance Enhancement	Professional segregation
Enhanced performance helps the athlete to secure marketing deals	.902	-.013
Enhanced performance ensures the athlete gets cash payments or prizes.	.886	-.095
Enhanced performance ensures upscaling of the athlete	.925	.008
The threat of suspension from the sport has reduced the use of PES	.109	.789
The Application of the ban from the sport on the athlete is effective at	.087	.797
Withdrawal of the prize money on an athlete has a major negative effect	.023	.646

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Results in table 4.35, indicated that professional segregation had a coefficient of 0.894 while performance enhancement had had a coefficient of 0.692. In addition, professional segregation was found to have a mean of agree (above 3.40) while performance enhancement was established to have a mean (2.60-3.39).

Table 4.35: Anti-Doping Measures Descriptive Results

	Component		
	Mean	**Standard deviation**	**Cronbach Alpha**
Professional Segregation	4.1026	0.53331	.894
Professional Enhancement	3.2166	1.00453	.692

Key: 1.00-1.79=Strongly Disagree 1.80-2.59=Disagree 2.60-3.39=Neutral 3.40-4.19=Agree 4.20-5.00 =Strongly Agree

The mean on professional segregation (Above 3.3) indicated a level of agreement amongst the respondents. This implies that athlete consider the social costs of doping more in their decision whether or not dope. The current findings broadly replicate the findings by Blank, Kopp, Niedermeier, Schnitzer and Schobersberger (2016) that revealed situational costs are important factors in decision making of athletes who are considering the use performance enhancing substances. Results on mean of performance enhancement indicated that respondents were neutral. This suggests that situational benefits are not considered as important factors when deciding whether or not to dope. This concurs with the findings of Blank, Kopp, Niedermeier, Schnitzer, & Schobersberger (2016) that athletes give performance enhancement benefits less consider.

Regression Analysis on the Effects of Anti-Doping Measures on Sub-components of wellbeing among Youthful Long-Distance Runners was conducted. The results are presented and discussed in the succeeding section.

Table 4.36: Summary Model for the Effects of Anti-doping Measures on Wellbeing of Youthful Long-distance runners

Dependent Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate
Family obligation	.244	0.059	0.055	0.97793
Social Obligation	.512	0.262	0.258	0.87035
Basics of life	.349	0.122	0.117	0.9542

Predictors: (Constant), Professional enhancement, Professional segregation

Dependent variable: family obligation, social obligation and basics of life

Results in table 4.36 indicated that the R^2 for family obligation was (0.122), Social obligation (0.059) and basic of life (0.269). This implies that the various aspects of anti-doping measures have a low effect on the family obligations, social obligation and basics of life. From table 4.40 above, the findings revealed that anti-doping measures had lowest impact on family obligations, social obligations and basics of life of the youthful long-distance runners. This is supported by Ring, Kavussanu, Lucidi and Hurst (2018) who argues that the impact of anti-doping measures on athlete's quality of life is still limited.

Table 4.37: ANOVA Model Fit for Ant-Doping Measures on Wellbeing of Youthful Long-Distance Runners

Model		Sum of Squares	Df	Mean Square	F	Sig.
Family Obligation	Regression	23.819	2	11.91	12.453	0.000
	Residual	376.8	394	0.956		
	Total	400.619	396			
Basics of life	Regression	105.848	2	52.924	69.866	0.000
	Residual	298.458	394	0.758		
	Total	404.306	396			
Social Obligation	Regression	49.792	2	24.896	27.344	0.000
	Residual	358.733	394	0.91		
	Total	408.526	396			

Predictors: (Constant), Professional enhancement, Professional segregation

Dependent variable: family obligation, social obligation and basics of life

The findings in table 4.37 above indicate that the professional segregation and performance enhancement are significant in explaining the variation of different wellbeing components of youthful long-distance runners (family obligation, social obligation, basics of life). This is evident from the table 4.41 as all the models have significant p values (p values<0.05). This implies that that the three-regression model overall predicts family obligation, social obligation and basics of life significantly well.

Table 4.38: Regression-Coefficients for the Effect of Anti-Doping Measures on Wellbeing of Youthful Long-Distance Runners

Dependent Variable	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Family Obligation	(Constant)	1.8	0.425		4.239	0.000
	professional-enhancement	0.047	0.092	0.025	0.503	0.615
	professional-segregation	0.245	0.049	0.245	4.989	0.000
Basics of life	(Constant)	2.345	0.378		6.204	0.000
	professional-enhancement	-0.121	0.082	-0.064	-1.475	0.141
	professional-segregation	0.506	0.044	0.503	11.579	0.000
Social Obligation	(Constant)	2.087	0.414		5.037	0.000
	professional-enhancement	-0.076	0.09	-0.04	-0.845	0.399
	professional-segregation	0.348	0.048	0.344	7.259	0.000

Predictors: (Constant), Professional enhancement, Professional segregation

Dependent variable: family obligation, social obligation and basics of life

Study findings in table 4.38 above shows that professional segregation has a significant effect with all the wellbeing components (family obligation, social obligation and basics of life) while professional enhancement was found to have non-significant effect on the wellbeing components of youthful long-distance runners. This suggests that punitive costs that athletes experience or are likely to experience due to doping affect athletes' quality of life. Murofushi et al., (2018) argues that punitive measures meted by WADA affects the economic and social wellbeing of athletes as it denies them source of income through participation in elite competitions. Similarly, Shah, Janssen, Le Nézet and Spilka (2019) also reported that punitive measures that were meted to doping athletes significantly affected their economic wellbeing. However, a study by Devcic et al., (2018) showed that punitive measures has had non-significant effect on athlete's quality of life. This they

suggest is because punitive measures only effect positive change on athlete's wellbeing to the extent that it can help deter doping and promotes safe sports.

4.9 Moderating Effects of Socio-Demographic Factors on Relationship between Socio-Economic Effects of Doping and Wellbeing of Youthful Long-Distance Runners in Kenya

This section examines how the age, gender and educates affects the relationship between socio-economic effects of doping and wellbeing components of youthful long-distance runners in Kenya. The effects of moderators are tested the model fit and model summary on the moderator role. Results are presented and discussed in the succeeding section.

Table 4.39: Model Fit on the Moderating Effect of Socio-Demographic Variables on Relationship between Socio-Economic Effect of Doping and Wellbeing Components of doping in Kenya

Model		Sum of Squares	df	Mean Square	F	Sig.
Family Obligation	Regression	121.771	13	9.367	12.866	.000
	Residual	278.848	383	0.728		
	Total	400.619	396			
Basics of life	Regression	165.169	13	12.705	20.349	.000
	Residual	239.137	383	0.624		
	Total	404.306	396			
Society Obligation	Regression	98.507	13	7.577	9.361	.000
	Residual	310.018	383	0.809		
	Total	408.526	396			

The findings in table 4.39 indicates that the socio-demographic variables are significant in explaining the variation of relationship between socio-economic effects of doping and wellbeing components of youthful long-distance runners. This is evident from the table

4.39 as all the models have significant p values (p values<0.05). This imply that the findings of the models on the socio-demographic factors on the relationship between socio-economic effects of doping and wellbeing components of athletes can be relied upon as valid and reliable.

Table 4.40: Model summary on the Moderating variables, Socio-Economic Effects of Doping and Wellbeing of Youthful Long-distance Runners

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Family Obligation	.551	0.304	0.28	0.85327
Basics of Life	.639	0.409	0.388	0.79018
Society Obligation	.491	0.241	0.215	0.89969

Results in table 4.40 indicated that the R^2 for the study for family obligation (0.304), Social obligation (0.241) and basic of life (0.409) when moderators were included. However, the findings in table 4.52 above without moderators showed that the R^2 for family obligation (0.278), Social obligation (0.235) and basic of life (0.381). This implies that the moderators (age, education status and gender) affected the relationship between socio-economic effects of doping and wellbeing of youthful long-distance runners in a small way. This was shown by the minimal increases experienced across basics of life (0.028), social obligation (0.006) and family obligation (0.026. This finding implies that the study moderators have the highest influence on the relationship between socio-economic effects of doping and wellbeing of youthful long-distance runners in Kenya.

The results also indicated an adjusted R squared that were closer to the R^2 for all the wellbeing components. This shows the model on social status and wellbeing of the youthful long-distance runners suffered less due to missing data. The standard error estimate of the model was found to be lesser (less than 1) for all the models tested. This shows that the model results on socio-economic effects of doping, social demographic.

Findings above shows that age, gender and education status have greatest effect on the relationship between socio-economic effects and wellbeing of long-distance runners. This suggests that the socio-economic effects of doping impact on the wellbeing of youthful runners are more likely to have great impact among male runners, educated runners and older youthful runners. This study supports the assertion by Curtis, Gerrard, Burt & Osborne (2015) that older runners who used PES are more likely to expertise higher economic effects than younger runners.

4.10 Wellbeing Results

The objective of the study was to determine the social economic effects of doping on the wellbeing of youthful long-distance runners' in Kenya. Respondents were asked their opinions on family obligations, social obligation and life basics. The wellbeing was assessed by three measures namely family obligations, basics of life and social obligations. Descriptive results shown on Table 4.41 revealed that respondents agreed, with a mean above 3.40 (agree) for all the different items used to measure wellbeing of the athletes.

Table 4.41: Wellbeing Descriptive Results

Statements	N	Mean	Std. Deviation
Athlete with enhanced performance has been able to secure his family obligation as a parent	397	3.76	1.048
Athlete with enhanced performance has been able to secure his family obligation as a spouse	397	3.82	1.056
Athlete with enhanced performance has been able to secure his family obligation as a child	397	3.77	1.061
Athlete with enhanced performance has been able to secure his family obligation as a sibling	397	3.47	1.069
Athlete with enhanced performance has an impact on his ability to secure his social standing in his village	397	3.97	1.11
Athlete with enhanced performance has an impact on his ability to secure his social standing within his age set	397	3.81	1.076
Athlete with enhanced performance has an impact on the ability of his family to secure social standing in the society	397	3.89	1.073
Athlete with enhanced performance determines his ability to provide food for his family	397	3.46	1.067
Athlete with enhanced performance determines his ability to provide shelter for his family	397	3.48	1.034
Athlete with enhanced performance determines his ability to provide water for his family	397	3.48	1.036

Key: 1.00-1.79=Strongly Disagree 1.80-2.59=Disagree 2.60-3.39=Neutral 3.40-4.19=Agree 4.20-5.00=Strongly Agree

From table 4.41 above, the respondents agreed (mean above 3.40) that enhance performance determines the ability of long-distance runners to secure their social obligations. This shows that athletes attach greater significance to their social obligations. This echoes the views of Sohi & Yusuff (1987) that sports benefits are socially oriented as athletes are part of their society. These findings support the results of Jansen (2013) that athletics in Kenya has allowed runners to meet their societal obligation to community members. However, contradicting findings were established by Shakib, Veliz, Dunbar & Sabo (2011) that athletes have low social standing. A possible explanation for the two studies can be linked to the fact that while Kenya is known as an athletics country where athletes have certain social status, the former study was conducted in Turkey, where

athletics is not viewed as an important sporting activity with implications on the social wellbeing.

The findings also showed that the respondents agreed (mean above 3.40) that enhance performance determines the ability of long-distance runners to meet their basics of life. This shows that athletes consider long-distance running as a major way to provide for their necessities of life. From the results it was realized that there was agreement that enhanced performance obligates one to parents, spouses and children (mean above 3.40). This demonstrates that athletes believe that they can meet their family commitments. Family responsibilities, for athletes and their significant others are a key part of an athlete's life (Mwanga, Gaudin & Felix, 2017). The view expressed herein concurs with the assertion by Chebet (2014) that athletes have been able to meet their family obligations.

Through the factor analysis, three factors (secure his family obligation, secure his family obligation as a spouse and ability to provide food were identified as the most important aspects of wellbeing with cumulative variance of 90.416% and Eigen values greater than 1. This suggests that family obligation and basic of life are the primary motivation for youthful long-distance runners in Kenya. This supports the assertion by Gitau, Sitati, Wishitemi & Njoroge (2008) that athletes participate in national and international competitions to enable them provide the basic necessities to their families.

Table 4.42: Wellbeing Factor Analysis (Total Variance Explained)

	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cum %	Total	% of Variance	Cum %	Total	% of Variance	Cum %
1	5.914	59.143	59.143	5.914	59.143	59.143	3.596	35.957	35.957
2	1.958	19.577	78.721	1.958	19.577	78.721	2.829	28.286	64.243
3	1.170	11.696	90.416	1.170	11.696	90.416	2.617	26.174	90.416
4	.210	2.105	92.521						
5	.174	1.737	94.258						
6	.163	1.630	95.888						
7	.140	1.404	97.292						
8	.104	1.045	98.337						
9	.089	.891	99.228						
10	.077	.772	100.000						

Extraction Method: Principal Component Analysis
a. when components are correlated, sums of squared loadings cannot be added to obtain a total variance
Key : Cum = Cumulative

Rotated component matrix (loadings) is the key output of component analysis and contains estimates of the correlations between each of the variables and the estimated components. Table 4.42 below depicts the rotated component factor loadings for determinants of social status (Family Obligations, Life Basic and Social Obligations). The results are discussed in the table below.

Table 4.43: Wellbeing Measures Rotation Component Matrix

	Family Obligations	Life Basic	Social Obligations
Athlete has been able to secure his family obligations as parent	0.89	0.165	0.239
Athlete has been able to secure his family obligations as a spouse	0.913	0.156	0.232
Athlete has been able to secure his family obligations as a child	0.921	0.167	0.189
Athlete has been able to secure his family obligations as a sibling	0.92	0.159	0.202
Athlete has an impact on his ability to secure his family obligations	0.267	0.266	0.847
Athlete has an impact on his ability to secure his family obligations	0.234	0.24	0.881
Athlete has an impact on the ability of his f family obligations	0.236	0.262	0.868
Athlete determines his ability to provide food for his family	0.189	0.914	0.241
Athlete determines his ability to provide shelter for family	0.161	0.921	0.243
Athlete determines his ability to provide water for family	0.178	0.918	0.256

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

All the variables of wellbeing of youthful long-distance runners had a factor loading of higher than 0.4 as shown in Table 4.43. Rusuli *et al*. (2013) showed that each individual variable must have value of 0.4 and above. According to table 4.43, only the subcomponent of providing for basic of life had a loading of over 0.4 for all its three items while to meet social obligations and family obligations, only had two items each with loading of over 0.4. This suggests that the variable on to provide for basics of life had a stronger conceptual operationalization as compared to family obligation and social obligation.

The findings indicated that family obligations had a coefficient of 0.964; basics of life had a coefficient of 0.965 while Social obligations had a coefficient of 0.928. Wellbeing

(family obligations, basics of life and social obligations) depicted Cronbach's alpha of 0.9523 which is above the suggested value of 0.7 hence the variables demonstrate reliability. The results are shown in table 4.44.

Table 4.44: Wellbeing Descriptive Results

	Mean	Component Standard deviation	Cronbach Alpha
To meet family obligations	2.7783	1.00581	.964
To provide basics of life	3.4736	1.01043	.965
To meet social obligations	2.8925	1.01569	.928

Key: 1.00-1.79=Strongly Disagree 1.80-2.59=Disagree 2.60-3.39=Neutral 3.40-4.19=Agree 4.20-5.00 =Strongly Agree

Amongst the sub-construct of wellbeing, only basics of life had a mean above 3.4 (Agree). This implies that of all the aspects of wellbeing, provision of basic needs is deemed as the most important amongst youthful long-distance runners. This supports the findings by Gitau, Sitati, Wishitemi and Njoroge (2008) that athletes in North Rift region participate in athletics for provision of basic needs as first priority. These results concurs with the assertion by Dos Santos (2015) that sports allow most athletes at bare minimum to have means and ways of providing for their life necessities. However, Onywera, Scott, Boit & Pitsiladis (2006) argue that this is not always true for not all athletes win competitions at local, national level and international level, and thus he asserts that provision of life basics is not a guarantee to an athlete.

The means on family obligation and social obligation showed that the respondents were neutral to the constructs (2.60-3.39). This suggests that that social obligation and family obligation are not greatly valued amongst long-distance runners in Kenya.

4.11 Overall regression analysis of Socio-economic effects of doping and wellbeing of Youthful long-distance runners in Kenya

The section focused on establishing the effect of education status and age of athletes on the moderating role of the relationship between socio-economic effects and wellbeing of long-distance runners in Kenya.

Table 4.45 : Model Fit on relationship between subcomponents of Socio-Economic Effect and wellbeing components of Youthful Long-Distance Runners

Model		Sum of Squares	Df	Mean Square	F	Sig.
Family Obligation	Regression	111.531	9	12.392	16.589	0.000
	Residual	289.088	387	0.747		
	Total	400.619	396			
Basics of Life	Regression	154.133	9	17.126	26.492	0.000
	Residual	250.173	387	0.646		
	Total	404.306	396			
Society Obligation	Regression	95.951	9	10.661	13.2	0.000
	Residual	312.574	387	0.808		
	Total	408.526	396			

Predictors: (Constant), professional segregation, Sustainable use, Professional enhancement, Family status, Sustainable information, Investment status, Society status, Sustainable access, Economic status

The findings in table 4.45 indicates that the socio-economic effects of doping is significant in explaining the variation of the components of wellbeing of youthful long-distance runners and for all the categories of dependent variables (family obligation, social obligation, basics of life). This is evident from the table 4.45 as all the models have significant p values (p values<0.05). This imply that the findings of the models on the effect of anti-doping measures on different components of wellbeing of athletes can be relied upon as valid.

Table 4.46: Model summary on Socio-Economic Effects of Doping and Wellbeing of Youthful Long-distance Runners in Kenya

Dependent Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate
Family Obligation	.528	0.278	0.262	0.86429
Basics of Life	.617	0.381	0.367	0.80402
Society Obligation	.485	0.235	0.217	0.89871

Predictors: (Constant), professional segregation, Sustainable use, Professional enhancement, Family status, Sustainable information, Investment status, Society status, Sustainable access, Economic status.

Results in table 4.46 indicated that the R^2 in the study for family obligation (0.278), Social obligation (0.235) and basic of life (0.381). The findings in table 4.46 shows that sub components of socio-economic effects of doping had the highest effect of basic of life (38.1%). This suggests that the participation of youths in long-distance runners is closely linked to the provision of necessities of life. This result was supported by Baade and Sanderson (1997) whose study established that elite athletics is an income generating activity that enables athletes to support themselves and their families. This finding also aligns itself with the current study results that revealed that family obligations had the second highest association with socioeconomics of doping. This concurs with the assertion by Mwisukha, Njororai and Onywera (2003) that participation in athletics has not only improved the wellbeing of athletics but their families and communities.

Table 4.47: Regression Co-Efficient on Socio-Economic Effects of Doping on Wellbeing Components of Youthful long-Distance Runners in Kenya

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Family Obligation	(Constant)	2.327	0.455		5.114	0.000
	Sustainable access	-0.411	0.062	-0.372	-6.637	0.000
	Sustainable information	-0.114	0.057	-0.106	-2.007	0.045
	Sustainable use	0.138	0.053	0.124	2.579	0.010
	Economic status	-0.026	0.06	-0.024	-0.427	0.669
	Investment status	0.173	0.058	0.154	2.98	0.003
	Family status	0.026	0.054	0.025	0.474	0.636
	Society status	0.191	0.057	0.178	3.34	0.001
	Professional enhancement	0.03	0.083	0.016	0.358	0.721
	Professional segregation	0.158	0.052	0.158	3.026	0.003
Basics of Life	(Constant)	1.718	0.423		4.058	0.000
	Sustainable access	0.027	0.058	0.024	0.463	0.644
	Sustainable information	-0.171	0.053	-0.158	-3.234	0.001
	Sustainable use	0.034	0.05	0.031	0.689	0.491
	Economic status	0.08	0.056	0.075	1.423	0.155
	Investment status	0.343	0.054	0.303	6.347	0.000
	Family status	-0.095	0.05	-0.091	-1.891	0.059
	Societal status	0.04	0.053	0.037	0.749	0.454
	Professional enhancement	-0.063	0.077	-0.033	-0.82	0.413
	Professional segregation	0.34	0.048	0.338	7.017	0.000
Society Obligation	(Constant)	1.861	0.473		3.933	0.000
	Sustainable access	-0.155	0.064	-0.139	-2.401	0.017
	Sustainable information	-0.162	0.059	-0.15	-2.754	0.006

Sustainable use	0.138	0.056	0.122	2.48	0.014
Economic status	0.003	0.063	0.003	0.045	0.964
Investment status	0.214	0.06	0.188	3.545	0.000
Family status	0.013	0.056	0.013	0.234	0.815
Societal status	0.16	0.06	0.147	2.678	0.008
Professional enhancement	-0.06	0.086	-0.032	-0.701	0.484
Professional segregation	0.218	0.054	0.216	4.022	0.000

Results in table 4.47 above shows the relationship between socio-economic effects of doping on wellbeing of youthful long-distance runners in Kenya. In regard to sustainable access, the findings revealed that sustainable access have a significant effect on family obligation, (β=0.411 and p-value <0.05), social obligation (β=-0.155, p-value <0.05) while the findings revealed a non-significant relationship with basics of life (β=-0.027, p-value>0.05). These findings imply that sustainable access has significant contribution on social and family wellbeing of youthful long-distance runners in Kenya. These results show that an increase in one unit of sustainability access results to a decrease in basics of life and social obligation by 0.155 and 0.027 units respectively. A unit increase in sustainable access resulted to an increase in family obligation by 0.411units respectively. Sustainability access on family obligation has been argued by Erickson, Backhouse & Carless (2017) who emphasize that families not only play the role of introducing athletes to the use of doping and supporting them in their careers but also expect some economic and social support from these athletes in their career.

The findings found out that sustainable information has a statistically significant effect on family obligations (β=0.114, p-value <0.000), social obligations (β= -0.162, p-value <0.00) and basics of life (β= 0.171, p-value <0.00). This implies that sustainable information affects all the aspects of wellbeing. These findings also suggest that aspects of sustainability costs have a mixed effect on family wellbeing of youthful long-distance runners. The results show that a unit increase in one unit of sustainable information results to an increase in family obligation and basics of life by 0.114 and 0.171 units respectively. A unit increase in sustainable access was established to lead to decrease in social

obligations units by 0.162 units. The significance of source of information on athlete's quality of life has been confirmed by Blank, Kopp, Niedermeier, Schnitzer and Schobersberger (2016).

The findings indicated that sustainable use have a significant effect on family obligations (β=0.138, p-value< 0.000), on social obligations (β=0.138, p-value< 0.000) and a non-significant effect on basics of life (β=0.034, p-value>0.00). The results demonstrate that sustainable use of doping results impacts positively on subjective wellbeing. The findings show that a unit increase in sustainable use of doping results to 0.138 units of family obligation and social obligation. A unit increase in sustainable use was also established to result to an increase of basics of life by 0.034. These findings contradict the results by Ring, Kavussanu, Simms and Mazanov (2018) that showed that cover up practices of athletes has no effect on an athlete's quality of life.

The study findings indicated that economic status had a non-significant effect on family obligations (β=0.026 and p-value>0.05), provision of basics of life (β=-0.08, p-value>0.05) and social obligation (β=-0.003, p-value>0.05). The results also showed that a unit increase resulted to increase in family obligations and basics of life by 0.026 units while a unit increase in economic status resulted to a decrease in social obligation and basics of life by 0.003 units and 0.08 units respectively. These findings suggest that economic status does not contribute to different aspects of wellbeing. These findings contradict the results by Mwisukha, Njororai, and Onywera (2003) that established a positive contribution of economic status on wellbeing of athletes.

The study findings indicated that investment status had a significant effect on family obligations (β=0.173, p-value <0.000) provision of basics of life (β=0.343, p-value<0.00) and social obligation status (β=0.214, p-value>0.00). The results also showed that a unit increase results to increase in family obligations, basics of life and social obligations by 0.173 units, 0.343 units and 0.214 units respectively. From these findings, it can be deduced that investment status enhances the wellbeing of youthful long-distance runners. The significance of investment status on wellbeing of athlete's families in Kenya has been

confirmed Mwanga, Gaudin & Felix (2017) who asserts that investments of athletes are beneficial to the family members.

The study results revealed that status in family circles have a non-significant effect on family obligation (β=0.026, p-value>0.05), basics of life (β=0.095, p-value>0.05) and (β=0.013, p-value> 0.05). Findings also indicate that a unit increase in status in family circles increase family obligations, basics of life and social obligation by 0.026, 0.095 and 0.013 units respectively. These results suggests that status in family circles has no impact on all various aspects of wellbeing.

From the findings above it was established that status in social circles has a significant effect on family obligations (β=0.191, p-value < 0.05) and social obligations (β=0.16, p value< 0.05) while have non-significant effect on basics of life (β=0.04, p-value>0.05). The results demonstrate that status in social circles has a mixed effect on wellbeing of youthful long-distance runners. These results indicate that an increase in a unit of status in social circles leads to an increase in family obligations, social obligations and basics of life by 0.191, 0.16 units and 0.04 units respectively. This result concurs with the findings of Tshube, Akpata & Irwin (2012) that demonstrated that societal honour through presidential awards does impact positively on athletes and their family member's wellbeing.

The study findings revealed that professional enhancement has non-significant effect with family obligations, (β=0.03 and p-value >0.05), basics of life (β= -0.063, p-value>0.05) and social obligation (β=-0.06, p-value>0.05). The results also showed that professional segregation had a significant effect on family obligation (β=0.158, p-value<0.000), basics of life (β= -0.063, p-value>0.05) and social obligation (β= 0.128, p-value <0.00). These findings suggests that only professional segregation affects significantly the wellbeing of youthful long-distance runners. This implies that punitive measures meted on youthful long-distance runner's impacts their wellbeing. This confirms the results by Ring, Kavussanu Simms & Mazanov (2018) that athletics punitive measures negatively affect the quality of athlete's lives.

Table 4.48: Regression-Co-efficient on effects of Socio-Demographic Characteristics on the Wellbeing Components among Youthful Long-distance Runners

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Family Obligation	(Constant)	2.706	0.518		5.224	0.000
	Gender	-0.173	0.089	-0.086	-1.955	0.051
	Age	-0.177	0.07	-0.124	-2.52	0.012
	Education Status	0.089	0.078	0.056	1.15	0.251
Basics of life	(Constant)	1.44	0.48		3.003	0.003
	Gender?	-0.179	0.082	-0.088	-2.174	0.03
	Age	0.127	0.065	0.089	1.957	0.051
	Education Status	-0.153	0.072	-0.096	-2.133	0.034
Society Obligation	(Constant)	1.759	0.546		3.221	0.001
	Gender?	-0.099	0.094	-0.049	-1.056	0.291
	Age?	0.046	0.074	0.032	0.627	0.531
	Education Status	-0.068	0.082	-0.042	-0.828	0.408

Results in table 4.46 shows the relationship between socio-demographics on wellbeing of youthful long-distance runners in Kenya. In regards to family obligation, the study findings revealed that only age had a significant effect of family wellbeing of youthful long-distance runners (p value <0.05). This indicates that an increase in an athlete's ages results to an increase in family wellbeing by 0.177units. This implies that older athletes feel more obligated to their families than younger athletes. This concurs with the assertion by Malek, Taylor and Mansell (2014) that as athletes age up they increasingly feel the pressure to provide for their families than when they are young.

In regards to Basics of Life, the findings revealed that both gender and education status significantly contributes to the wellbeing of youthful long-distance runners in Kenya (P value < 0.05). This implies that an increase in gender status (more males) and level of education results to an increase in basic of life by 0.179 units and 0.153 units respectively. This implies that more males are likely to provide to the necessities of lives through the athletics than females. This supports the findings by Kelly (2016) that male's profit more from athletes due to socio-cultural factors. These finding also implies that athletes with higher level of education status can provide more basic of life. This according to Bouvier & Lesaule (2017) is because educated athletes can best know how to profit from the commercial aspects of their running career than non-educated athletes. Through such profits they are more than able to provide for their life needs.

In regard to social obligation, the results indicated that age, gender and education status has no significant effect on the social wellbeing of youthful long-distance runners (P values>0.05). This implies that there is no difference between males and females, educated and non-educated, younger youthful and older youthful athletes as concerns there social wellbeing.

Table 4.49: Summary of Research Hypothesis

Null Hypothesis	Comments
There is no significant influence of sustainability costs on the wellbeing of youthful long-distance runners.	Rejected
There is no significant influence of economic status on the wellbeing of youthful long-distance runners	Rejected
There is no significant influence of social status on the wellbeing of youthful long-distance runners	Rejected
There is no significant influence of anti-doping measures on the wellbeing of the youthful long-distance runners	Rejected
There is no significant moderating effect of age, gender and education on the relationship between socio-economic effects of doping on the wellbeing of youthful long-distance runners in Kenya.	Rejected

4.12 Discussion of Study Findings

4.12.1 Effect of sustainability costs of doping on the wellbeing of youthful long-distance runners' in Kenya.

In response to sustainability cost, the findings revealed that sustainable access, sustainable information and sustainable use of doping are significant predictor of the all wellbeing components of youthful long-distance runners. This highlights the crucial role that sustainable access of doping, sustainable us and sustainable information plays in the wellbeing of young long-distance runners. Sustainability, through sustainability access is an important part of the initiation process of athlete into doping. Several sources of influences for PED initiation and use contribute to wellbeing of young distance runners and correspond with previous research, including family members (Kirby et al., 2011), peers (Laure & Binsinger, 2007), friends (Ntoumanis et al., 2014), and athletes support personnel (Backhouse, Whitaker, & Petróczi, 2013). In line with Hauw and Bilard (2011), who stated that support network from family members is key factor in an athlete initiation to PED use, the current study affirms this.

This finding links up with Erickson, Backhouse and Carless (2017) who argued that support network is probably the most important factor in the use of PED. Erickson, Backhouse and Carless (2017) also stresses that social network is an important aspect to an athlete life phases of: developmental, transition and elite runner phases, with one's social network playing an important role to initiation to the use of PED and sustainability in its use across all phases if necessary. To further buttress this point, Kim and Kim (2017) states that athletes takes a lot into account the opinion of those within their social network. The current study results share a number of similarities with Ring, Kavussanu, Lucidi and Hurst (2018); Mwanga, Gaudin & Felix (2017). This study established that athlete support personnel peers, friends and parents contribute significantly to their use of PED, by extension the quality of athlete's life.

At the information level, the role of doctors as information source has been well documented. Kirby et al. (2011) found that the likelihood of athletes doping depends on the availability of such information through medical personnel such as doctors. The current study found that sustainable information can affect the wellbeing of athletes positively. Moston, Engelberg, and Skinner (2015) also asserts the importance of internet as information source in the global village where world is interconnected with internet connectivity. This has made it easy for athletes to access doping information even in developing countries such as Kenya. More particularly, access to internet information has made it possible for athletes to access PES for their benefit during elite competitions.

4.12.2 Influence of economic status effects of doping on the wellbeing of youthful long-distance runners' in Kenya

The study results also indicated that investment status significantly affects the wellbeing of young distance runners. This implies that the use of improved economic status of youthful long-distance runners leads to overall wellbeing of young distance runners. Hibino, Funahashi, Aoyagi and Mano (2016) that emphasises that increased use of PED is occasioned by the likely economic benefits that is then used to make investments. Of which they state that such investment impacts on the wellbeing of athletes both in the short term and long-term competition.

This finding corroborates the ideas of Afolayan (2012), who suggested that performance enhance substances use has improved the financial status of some athletes resulting to an overall improvement in quality of life of such Athletes. The significance of economic status shows that investment status through long-term benefits of PES use results to overall wellbeing of young long-distance runners in Kenya. This supports the assertion of Bouvier & Lesaule (2017) that most of the long-distance runners in Kenya participate in elite running as a way of escaping poverty and creating wealth for themselves. Mwisukha, Njororai and Onywera (2003) affirms this when he argues that a significant proportion have used their monetary rewards to acquire assets such as lands and building in North Rift region. Further analysis of the findings showed that investment status contributes

more to the wellbeing of young distance runners than financial status. A possible explanation for greater effect of investment status on wellbeing of long-distance runners is attributed to what Janssen (2013) calls running as a way to invest in their future. Accordingly, he states that long-distance running takes approximately between 12-15 years, within which an athlete is expected to use his financial rewards wisely by investing in assets that will helps them once they retire from Athletics.

The findings of this study concurs with the results of Janssen (2013) who proved on the impact of athletics on the lives of the youth, with the study reporting long-distance running as employment sources, investment sources, infrastructure development and improvement in overall health of athletes. These finding show that indeed the youth perceive athletics as playing a crucial role in empowering their lives.

4.12.3 Influence of the social status effects of doping on the wellbeing of youthful long-distance runners' in Kenya

The results of this study did show that society status due to performance enhancement effects affects the wellbeing of young long-distance runners in Kenya through society status. This suggests that social and psychological image that is expected of athletes at Meso-level (societal level) contributes to the social and family wellbeing of young long-distance runners in Kenya. These results are in sync with the findings of the study by Ring, Kavussanu, Lucidi and Hurst (2018) that revealed that societal image is part of benefits that athletes achieve in their use of banned substances. In furthering this point, Blank, Kopp, Niedermeier, Schnitzer and Schobersberger, (2016) argues that societal pressure and image that athletes have is greatly linked to Media. Thus, he asserts that any win that athletes get in an elite competition enhances their media image as media gives them positive reviews.

The findings found out that family status had the no significant effect on wellbeing of long-distance runners. This is attributed to the external pressure from the public and media which places more external pressure on the long-distance runners to perform as compared

to family members who also at as a support system in their journey (Blank, Kopp, Niedermeier, Schnitzer, M., & Schobersberger, 2016). Finally, dimensions of body image, more specifically, concerns about muscularity and thinness, and overall dissatisfaction with body appearance were found to significantly relate to doping intentions and doping use. These findings support previous research by Ring, Kavussanu, Lucidi and Hurst (2018) that established that societal image, family image and body image may facilitate doping use and an athlete perception about their wellbeing.

4.12.4 Effects of the anti-doping cost on the wellbeing of youthful long-distance runners in Kenya

The findings also indicated that professional segregation affects the social obligation and family obligation. This result implies that anti-doping measures is a factor that affects the wellbeing of youthful long-distance runners in Kenya. Sefiha (2012) believes that athletes may dope due to what he calls "performance necessity". The pressure to perform to win competition or pressure to regain one's performance after lengthy spell in the sidelines drives many athletes to doping with an aim of maintaining their lifestyle (Bloodworth & McNamee, 2010; Kirby et al., 2011; Overbye et al., 2013).

Furthermore, the results showed that professional segregation determines greatly the ability of athletes to meet their basics of life. A possible reason for this, Hibino, Funahashi, Aoyagi and Mano (2016) states relates to the detrimental effect that the anti-doping measure can have on an athlete's financial endowment, public image and performance for athletes caught doping. This finding is consistent with the results of Murofushi, Kawata, Kamimura, Hirosawa and Shibata (2018) that demonstrated that anti-doping measures greatly impacted on Japanese athletes. In contrast to earlier findings by Ring, Kavussanu, Simms and Mazanov (2018) established that the punitive measures are effective. The current study found no evidence of professional segregation on wellbeing of athletes but established a positive evidence for professional enhancement and wellbeing of athletes. The difference is the findings can be attributed to what Ring, Kavussanu, Simms and Mazanov (2018) can be attributed to communicate effect of anti-doping

measures. They suggest that to the extent that to which anti-doping measures are effectively communicated to the athletes, punitive measure (professional segregation) are effective.

4.12.5 The moderating effect of age, education and gender on the relationship between Socio-economic costs and wellbeing of youthful long-distance runners in Kenya

Finally, the findings indicated that age has a moderating effect on the relationship between socio-economic effects of doping and wellbeing of youthful long-distance runners in Kenya. This implies that as athletes age they are more likely to improve their family obligation through use of PES. The results support the findings by Chebet (2014) that older athletes have more opportunities of accessing and using banned substances which is likely to expose them to more benefits of such substances. Her findings also revealed that older athletes have more knowledge in regard to doping information. This shows that age is an important moderator in the wellbeing of athletes in regard to use of PES. Further the results demonstrate that as athletes age up they are more likely to experience more societal pressure that can lead them to use banned substance for its benefits to their running career.

With regard to age and/or experience, athletes competing at higher levels appear more understanding of doping due to pressure to perform and greater incentives to win, compared to athletes at lower levels. (Stewart & Smith, 2010). Although some studies have found more negative attitudes towards doping at lower participation ranks (Stewart & Smith, 2010), others have highlighted a vulnerability to doping at lower levels with one study showing that national-level athletes displayed significantly greater willingness to dope and perceived themselves as more similar to a doper compared to athletes at all other levels (Whitaker, Backhouse, et al., 2014). A study by Overbye, Knudsen and Pfister (2013) found out that athletes younger than 25 years (male and female) are more likely to be deterred by being banned from their sport, by fear of bodily dependency and by fear of the financial consequences if caught than athletes aged 25 years and older. This shows

that older athletes are more likely to use PES as they consider it less risk to their athlete's career.

According to Hauw and Bilard (2012), older athlete's use of PES for their wellbeing is linked to instability that an athlete experience as they age. As athletes age, they suffer more from situational setbacks or periods of distress. Injury is commonly perceived by these athletes as pressure that could lead to doping in order to recover quickly, corroborating the current findings that older athletes are likely to use doping given socioeconomic costs for their wellbeing Because injuries are often perceived to be 'unfair', athletes may justify doping as 're-estabilising themselves' rather than enhancing performance (Overbye et al., 2013).

The relationship between age and level of education is also an important moderator that in the relationship between doping status of athletes and wellbeing. A study by Kelly (2016) revealed that younger athletes have low level education in comparison to older athletes, and this affects their knowledge level. Hence, the current study confirms the significance of interaction between education status and age that contributed to moderation effect in the model.

The study findings indicated that gender as a moderator had significant effect on the basics of life of wellbeing. This implies that females' athletes are more likely to benefit from use of PES in terms of improved wellbeing in regard to provision of basics of life than Men. A possible explanation for this reason is attributed to Hibino, Funahashi, Aoyagi and Mano (2016) that men experience high social costs than women when using doping. This finding indicated that education status as a moderator has a significant effect on the relationship between socio-economic effects of doping and basics of life of youthful long-distance runners. This implies that an individual socio-economic reason to use PES for their wellbeing (basic of life) is influenced by education status. These findings support the findings of Muwonge, Zavuga and Kabenge (2015) that revealed that education status influences the use of banned status and wellbeing of youthful long-distance runners in Uganda.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study investigated the socio-economic effects of doping on the wellbeing of youthful long-distance runners. The study had the following specific objectives: to determine the sustainability costs of doping on the wellbeing of youthful long-distance runners in Kenya. To determine the economic status effects of doping on the wellbeing of youthful long-distance runners in Kenya. To assess the social status effects of doping on the wellbeing of youthful long-distance runners' in Kenya. To evaluate the professional status effects of doping on the wellbeing of youthful long-distance runners in Kenya. Lastly to determine the moderating effect of age and education on the relationship between socio-economic effects of doping and wellbeing of youthful long-distance runners in Kenya.

5.2 Summary of the Findings

The first chapter of this study introduced the doping problem in terms of the socio-economic factors that determine doping from the global and regional perspective. In highlighting the problem, the importance of an athlete's judgment of his or her current wellbeing was introduced, culminating in the problematic question of whether there are socio-economic effects on the use of performance enhancement substances and how do these consequences affect the wellbeing of the long-distance runners. In the second chapter, review of literature was provided in light with the objectives of the study that is the theories relevant to the study were reviewed. They included livelihood framework among other human development theories. Empirical literature was equally analyzed which culminated in the research gaps that supported the need to better understand the relation between socio-economic effects of doping on the wellbeing of youthful long distance runners.

The study adopted the cross-sectional survey research design. The target population were the youthful long distance runners. Structured questionnaires were the primary method of data collection, with the instrument subjected for a reliability and validity tests through pilot study. Both descriptive (mean, frequencies and standard deviation) and inferential statistics (ANOVA and factor analysis) were applied during data analysis. The findings presented in chapter four are summarized in the paragraphs below.

With regard to wellbeing, which was the dependent variable, the respondents agreed that the long distance athletes are able to meet their various obligations in life. In the factor analysis output the three dimensions of wellbeing namely the ability to meet family obligations, societal obligations and provide the basics of life as conceptualized in the conceptual framework were confirmed. For all these dimensions, the respondents agree that enhanced performance is a booster to meeting them. This is in line with a number of authors such as Gitau, Sitati, Wishitemi & Njoroge (2008), Mwanga, Gaudin & Felix (2017) and Chebet (2014) who affirmed that enhanced performance provides the athletes with the means to meeting their household and social obligations.

Sustainability costs, had been conceptualized as costs of access, costs on information and costs of use respectively, these were confirmed by the factor analysis as separate dimensions of sustainability costs. The mean scores for the sustainability cost dimensions shows that the respondents neither agreed nor disagreed about the sources of access to PES, access to information on PES use and extent of use of PES. This ambivalence can be as result of the complex nature of accessing and using PES as its detection does have consequences. This concurs with the results by Blank, Kopp, Niedermeier Schnitzer, Schobersberger (2016) that showed that source of information significantly determines athlete's use of PES, and therefore these sources are varied and confidential.

The extent through which these sustainability costs related with or influences the wellbeing of the runners a regression analysis was carried out. For the three dimension of wellbeing, namely meeting the basics of life, fulfilling family obligations and meeting social obligations; for meeting basics of life sustainable information on use negatively

influenced while sustainable access to PES positively influenced meeting the basics of life aspects of wellbeing. With regard to meeting social obligations sustainable information on use negatively influenced while sustainable use of PES positively influenced meeting social obligations. This is a mixed results that showed both negative and positive influences of sustainability costs on wellbeing thereby concurring with those of Costa-Lobo, Cordeiro, Martins and Campina (2017) that athletes who access and use doping substance have little improvement in their subjective wellbeing. This was equally the same for the for meeting family obligation. These observations seem to confirm Kim and Kim (2017) findings who noted that access and use of performance enhancement drugs results to both positive and negative influence on an athlete's lifestyle, family and even societal standing.

With regard to economic status two dimensions were conceptualized namely financial status and investment status, these was confirmed by the factor analysis as separate dimensions of economic status. The mean scores for financial status and investment status indicated that the respondents agreed that enhanced performance improves the economic status of the long distance runners. These results matched those found in the study by Janssen (2013) that athletics improves the financial security of runners in North Rift region. On investment status the WADA (2012) report in Kenya revealed that long-term investment gained from long-distance running is one of the major motivators for young runners.

The extent through which economic status relates with or influences the wellbeing of the runners a regression analysis was carried out. In the regression, only investment status had a significant relationship with all the three components of wellbeing. This is quite in line with the argument that that investment ensures sustainable flow of income now and in the future, both the immediate family as well as social acquaintances can enjoy that. The results corroborates the ideas of Afolayan (2012), who suggested that athletes who have investments during their athletics career have better quality of life socially and economically. With regard to financial status it is only is significant with regard to provision of the basics of life and insignificant with regard to meeting family and social

obligations. The non-significance of financial status on family obligation of youthful long-distance runners could be attributed to what Jansen (2013) called lack of regular cash flow for athletes. In this absence then they only have enough if any to take care of their basics of life.

For social status two aspects were conceptualized namely family standing and societal status, these were confirmed by the factor analysis as separate dimensions constituting social status quite in line with the expectations as summarized in the conceptual framework. The mean scores for family standing and societal status indicated that the respondents agreed that enhanced performance improves the social status of the long distance runners. The respondents agreed that enhanced performance improves both the family standing and societal status. This aligns with the results by Ring, Kavussanu, Lucidi and Hurst (2018) that social status of athletes is because of individual effort, family support and media pressure. This is only possible when the athlete outperforms others in competitions.

However when it came to the evaluating the extent to which these social status aspects relate with the dependent variables namely meeting family obligations, meeting societal obligations and access to basics of life only societal status was significant and positive. Kim & Kim (2017) provides the plausible explanation by stating that the expectation and pressure from the Media (society) is likely to lead an athlete to the use PES with an aim of improving their wellbeing and those of their family members. With regard to aspect of family standing in the regression results, it was not significant. It therefore does not or it very minimally influence the wellbeing of the athlete. This is in line with the observation by Duncan, Hallward and Alexander (2018) who states that the ascribed and achieved status in family and social circles results to increase in quality of life by small degree. This is equally in line with earlier researchers such a Földesi (2004) who observed that athlete's status in family and social circle has contributed minimally to their wellbeing.

The concepts that constituted professional status were professional segregation and professional enhancement. The factor analysis was carried out to evaluate whether the

presence of these underlying conceptualizations among the respondents confirmed that they were two separate aspects that constitute professional status. For both aspects, the respondents agreed that there are consequences of enhancing performance on professional status of the athlete. This concurs with the results by Blank, Kopp, Niedermeier Schnitzer and Schobersberger (2016) that revealed that both social benefits (professional enhancement) and social costs (professional segregation) are important factors in doping decision-making process.

The extent to which professional status relates with or influences the wellbeing of the runners a regression analysis was carried out. Of the two aspects, only professional segregation had a significant effect with all the wellbeing components (family obligation, social obligation and basics of life). Professional segregation, which was conceptualized as the costs of doping, and its related punitive measures that can be meted out on the athlete positively influenced wellbeing. Murofushi et al., (2018) argues that punitive measures meted by WADA affects the economic and social wellbeing of athletes as it denies them source of income through participation in elite competitions. Knowledge of this among other consequences implies the athletes seek to avoid doping as much as possible. For professional enhancement, conceptualized as using PES to achieve outperform others had no significant effect on the wellbeing components of youthful long-distance runners. Possible explanation for this can be related to the fact that many of the runners taking in to account that these is their life line probably avoid doping as much as possible. This seem to echo the observation by Mazzeo, Altavilla, D'elia & Raiola (2018) where it was noted that effecting a doping procedure is relatively difficult in developing countries than in developed countries.

In order to evaluate if there is any relation between socio-economic consequences of doping on wellbeing the overall regression analysis was carried out. This involved the inclusion of all the independent variables namely sustainability costs, economic status, social status and professional status being regressed against the dependent variable wellbeing. With regard to wellbeing aspect of meeting family obligation, all the independent variable were significant. This was equally the same for the wellbeing aspect

of meeting societal obligation. The direction of influence was positive for the socio-economic aspects of economic status, social status and professional status. This is in line with Mwanga, Gaudin & Felix (2017) who asserts that investments of athletes are beneficial to the family members. For the sustainability costs, it was negative. This can be explained from the fact that in athletics before one can have the necessary resources to dope success is necessary. This is because athletics is a livelihood strategy to escape poverty and therefore the youthful athletes since they may not be already in high paying competitions will not have the resources to engage in doping. That is why it has been observed that doping is easier in the developed countries where these chemicals maybe easily available as well as the complementary concealing drugs (Mazzeo, Altavilla, D'elia & Raiola 2018).

With regard to meeting the basics of life, the socio-economic aspects that were significant include the sustainability costs, economic status and professional status. Just like the meeting family obligations and societal obligations, the sustainability costs negatively influenced basics of life while economic status and professional status positively influenced basics of life. The only unique results is that unlike the other aspects of wellbeing social status had no significant influence on meeting the basics of life. This can be attributed to the perspective that engaging in ensuring access to basics of life by engaging in a livelihood strategy like athletics is an individual affair and that improved social status due to enhanced performance does not provide the basics of life. This is emphasize by Erickson, Backhouse & Carless (2017) who noted that families not only play the role of introducing athletes to the use of doping and supporting them in their careers but also expect some economic and social support from these athletes in their career. This does imply that the key to these efforts is in ensuring success not the providing the basics of life to the athlete.

5.3 Conclusions

In the findings, it was noted that for the wellbeing, the respondents agreed that the long distance athletes are able to meet their various obligations in life. The specific obligations

were ability to meet family obligations, societal obligations and provide the basics of life. It can therefore safe to conclude that engaging in sports can be another way to ensuring the youth are able to sustain themselves in life.

The mean scores for the sustainability cost dimensions shows that the respondents neither agreed nor disagreed about the sources of access to PES, access to information on PES use and extent of use of PES. In the regression results between wellbeing and sustainability costs dimensions the results indicate both positive and negative influences. This ambivalence can be as result of the complex nature of accessing and using PES as its detection does have consequences. It can thus be concluded that the nature and networks to access and use doping is too varied to pinpoint the key sources.

The mean scores for financial status and investment status indicated that the respondents agreed that enhanced performance improves the economic status of the long distance runners. However in the regression results only investment status was significant and positively influenced wellbeing. The conclusion then can be that athletes if they are to improve and sustain their wellbeing whatever proceeds from the winnings should be invested in profitable ventures.

The mean scores for family standing and societal status indicated that the respondents agreed that enhanced performance improves the social status of the long distance runners. However when it came to the evaluating the extent to which these social status aspects relate with wellbeing only societal status was significant and positive. It can be thus concluded that the family, the community and the society in general do have a stake in success of the long distance runners as it most likely as noted the discussions in the findings it is a symbiotic relationship.

With regard to professional status, the respondents agreed that there are consequences of enhancing performance on professional status of the athlete. Professional segregation, which was conceptualized as the costs of doping, and its related punitive measures that can be meted out on the athlete positively influenced wellbeing. This can be concluded

that the perceived and real costs of engaging in doping has the consequence of sustaining professionalism in athletics.

5.4 Recommendations

The study concluded that engaging in sports can be another way to ensuring the youth are able to sustain themselves in life. For many it is a source of livelihood. It is therefore recommended that government should provide the enabling environment for sports to thrive in Kenya. This can be inform of providing the facilities, funding of the activities and introducing other types of sports for the youth to engage in.

With regard to access and use of doping it was concluded that the nature and networks to access and use doping is too varied to pinpoint the key sources. The only way then to ensure clean sports is for the athletes to be vigilant and maintain high professionalism. It is therefore recommended that the government as well as other interested stakeholder to always carry out campaigns that emphasize zero tolerance to doping as well highlight the consequences of doping in all dimensions of life.

The conclusion then can be that athletes if they are to improve and sustain their wellbeing whatever proceeds from the winnings should be invested in profitable ventures. This is the critical to sustaining the athletes wellbeing in the long run. It is therefore recommended the development and dissemination of the opportunities available for investments in profitable ventures. This can be through the government effects, non-governmental organizations among others but more importantly, it should be organized with utmost professionalism.

It was concluded that the family, the community and the society in general do have a stake in success of the long distance runners and that a symbiotic relationship. Support for the runners from policy makers, societal leaders, business community and the public. This is particularly important that this support can come in terms sponsorships among others that motivates the athletes to focus on their professions

It was concluded that the perceived and real costs of engaging in doping has the consequence of sustaining professionalism in athletics. This was mainly with regard to anti-doping measures. Therefore, it is recommended that the institutions national and international if possible continue to support sports by engaging with stakeholders to ensuring utmost professionalism is sustained just as the anti-doping measures seem to play.

5.5 Areas of Further Research

Although the study had conceptualized that demographic variables such as age and educational levels would moderate the socio-economic effects of doping on wellbeing the results were inclusive. These variables were not significant as having any moderating effects. The possible explanation may have been the design of this study, which may not have been suited for integrating the demographic variables. Further research is therefore recommended that focuses on demographic characteristics, doping and wellbeing.

The study also recommends a similar study but this time focusing on the personnel that handle the athletes. The research has identified quite a number of stakeholders in the sports industry. Their role in professionalizing the sport and in particular ensuing the wellbeing of the athletes is assured is an area of that was out of scope in this study. However, literature reviewed and used to support the study as well as some of the results point to the existence of stakeholder that can help or break an athlete.

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APPENDICES

Appendix I: Questionnaire

Dear Respondent,

I am a Graduate Student at JKUAT pursuing Doctor of Philosophy (PhD) in Development Studies. I am to carry a research and write a report. My research focuses on "**Socio-Economic Effects Of Doping On The Wellbeing of Youthful Long-Distance Runners in Kenya".** Kindly respond to the questionnaire with ultimate honesty. Please **DO NOT** write your name or Identification because the information will be treated as confidential. Once filled in, it will be mixed together with the others therefore, please answer without any fear.

There is no right or wrong answer. Am interested in your opinion and experience, so please answer spontaneously and do not worry because the information will be treated as confidential. Thank you for your collaboration and taking your time to support this study.

Place a tick (√) in as appropriate and explain when required in the space provided.

SECTION A: PERSONAL DATA

1.	What is your gender?	Male	[ ]	Female	[ ]
2.	What is your age?	10-15	[ ]	21 - 25	[ ]
		16- 20	[ ]	above 25	[ ]
3.	What is your weight?	40 - 50kgs	[ ]	51 - 60kgs	[ ]

61 - 70kgs [ ] above 70kgs [ ]

4. What is your height? Less than 1 meter [ ] above 1 meter [ ]

5. What is your level of education? Primary [ ] Secondary [ ]

College [ ] Degree [ ]

6. Which is your major Athletic Discipline 800m [ ] 1500m [ ]

3000m [ ] 5000m [ ] 10,000m[ ]

7. How long have you been in Athletics? 0 – 5 yrs [ ] 6 – 10 yrs [ ]

Above 15 yrs[ ]

8. Do you have any other occupation? Skilled [ ] Semi Skilled [ ]

Unskilled [ ] Other [ ]

9. What are the main income sources of your family?

Wage/salary [ ] Farming [ ] Local Tourism [ ] Trading [ ]

Rental income[ ] Pensions [ ] Assistance of relatives [ ]

Aids/assistance from NGOs [ ] Govt Allowances for elderly [ ]

10. What is your family income? Less than 10,000 [ ] 10,000 – 19,000 [ ]

20,000 – 29,000 [ ] 30,000 – 39,000[ ]

40,000 – 49,000 [ ] over 50,000 [ ]

11. How do you consider yourself? Very poor [ ] Poor [ ]

Lower middle income level [ ]

Middle income level [ ]

Higher middle income level [ ]

Rich [ ]

Very rich [ ]

SECTION B: SOCIO-ECONOMIC EFFECTS OF DOPING ON THE WELLBEING OF YOUTHFUL LONG-DISTANCE RUNNERS IN KENYA

6. **ACCESIBILITY COSTS**

i) Do you know the cost of any method or substance doping used for doping?
Yes [ ] No [ ]

ii) How difficult do you think it would be for you to dope if you wanted

Impossible [ ]

Very difficult [ ]

Fairly difficult [ ]

Fairly easy [ ]

Very easy [ ]

Do not know [ ]

Cost of accessibility to PES

What is the Cost of using third parties in the acquisition of PES? Please think back and then answer the following questions by marking a tick (√) over the corresponding number. . **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Cost of accessibility to PES	**SA**	**A**	**U**	**D**	**SD**
1.	Athletes obtain PES through doctors					
2.	Athletes obtain PES through friends					
3.	Athletes obtain PES through relatives					
4.	Athletes obtain PES through friends					
5.	Athletes obtain PES through athlete support personnel					

Ease of Use

This Section Deals with The process of utilizing PES is enhanced by access to information? Please think back and then answer the following questions by marking a tick (√) over the corresponding number. . **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Ease of use	**SA**	**A**	**U**	**D**	**SD**
1.	Information on the use of PES is obtained from user manuals					
2.	Information on the use of PES is obtained from the internet					
3.	Information on the use of PES is obtained from fellow athletes					
4.	Information on the use of PES is obtained from athlete support personnel					
5.	Information on the use of PES is obtained from doctors					

Cost of Concealment

This Section Deals with the process of hiding or masking the use of PES ? Please think back and then answer the following questions by marking a tick (√) over the corresponding number. . **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Cost of Concealment	**SA**	**A**	**U**	**D**	**SD**
1.	Athletes use other substances to conceal the use of PES					
2.	Athletes financially facilitate the doping control officers to conceal the use of PES					
3.	Athletes avoid procedural testing to conceal the use of PES					

Doping Addiction

This Section Deals with the process of hiding or masking the use of PES ? Please think back and then answer the following questions by marking a tick (√) over the corresponding number. **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Doping Addiction	**SA**	**A**	**U**	**D**	**SD**
1.	Athletes who use PES depend on it for training					
2.	Athletes who use PES depend on it during in – competition season					
3.	Athletes who use PES depend on it during out- of competition season					

ECONOMIC STATUS

Financial Status

This Section Deals with enhanced performance ensuring financial security or financial gain. Please think back and then answer the following questions by marking a tick (√) over the corresponding number. **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Economic Status	**SA**	**A**	**U**	**D**	**SD**
1.	Enhanced performance due to the use of PES results in financial gain					
2.	Enhanced performance ensures acquisition of funds.					
3.	Enhanced performance provides income security					

Investment status

This Section Deals with the assets and savings standing of an athlete. Please think back and then answer the following questions by marking a tick (√) over the corresponding number. **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Investment Status	**SA**	**A**	**U**	**D**	**SD**
1.	Gains from enhanced performance improves asset acquisition					
2.	Gains from enhanced performance improves saving ability					
3.	Gains from enhanced performance ensures credit worthiness of an athlete					

SOCIAL STATUS

Family standing

This Section Deals with how the athlete is perceived by the family..Please think back and then answer the following questions by marking a tick (√) over the corresponding number. **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Family Standing	**SA**	**A**	**U**	**D**	**SD**
1.	Enhanced performance attracts respect of an athlete within the family.					
2.	Enhanced performance attracts respect of the athlete's family					
3.	Enhanced performance attracts honour of an athlete within the family					

Social Status/Societal status

This Section Deals with how an athlete is perceived by the society after using PES. Please think back and then answer the following questions by marking a tick (√) over the corresponding number. **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Societal Status	**SA**	**A**	**U**	**D**	**SD**
1.	Enhanced performance attracts respect of an athlete within the society.					
2.	Enhanced performance attracts respect of the athlete's family within the society					
3.	Enhanced performance attracts honour of the athlete's family within the society					

Professional enhancement

This Section Deals with Benefits expected by the athlete. Please think back and then answer the following questions by marking a tick (√) over the corresponding number. **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Benefits Expected	**SA**	**A**	**U**	**D**	**SD**
1.	Enhanced performance helps the athlete to secure marketing deals.					

2.	Enhanced performance ensures the athlete gets cash payments or prizes.					
3.	Enhanced performance ensures upscaling of the athlete from one level to the other					

Anti-Doping Measures

This Section Deals with **Professional** segregation .Please think back and then answer the following questions by marking a tick (√) over the corresponding number. **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Professional segregation	**SA**	**A**	**U**	**D**	**SD**
1.	The threat of suspension from the sport has reduced the use of PES by an athlete					
2.	The Application of the ban from the sport on the athlete is effective at deterring others from using PES					
3.	The withdrawal of the prize money on an athlete has a major negative effect on athletes from using PES					
4.	The requirement for prohibited association on an athlete deters other athletes from using PES					

WELLBEING

This Section Deals with how the athlete is perceived by the family..Please think back and then answer the following questions by marking a tick (√) over the corresponding number. **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Wellbeing	**SA**	**A**	**U**	**D**	**SD**
1.	Athlete with enhanced performance has been able to secure his family obligations as a parent,					
2.	Athlete with enhanced performance has been able to secure his family obligations as a spouse,					
3.	Athlete with enhanced performance has been able to secure his family obligations as a child,					
4.	Athlete with enhanced performance has been able to secure his family obligations as a sibling					

Ability to meet social obligations

This Section Deals with how the athlete is perceived by the family..Please think back and then answer the following questions by marking a tick (√) over the corresponding number. **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	social obligations	**SA**	**A**	**U**	**D**	**SD**
1.	Athlete with enhanced performance has an impact on his ability to secure his social standing in his village					
2.	Athlete with enhanced performance has an impact on his ability to secure his social standing within his age set					
3.	Athlete with enhanced performance has an impact on the ability of his family to secure social standing in the society					

Ability to meet the basics of life

This Section Deals with Ability to meet the basics of life .Please think back and then answer the following questions by marking a tick (√) over the corresponding number. **SA = Strongly Agree; A = Agree; U = Undecided; D= Disagree; SD = Strongly Disagree**						
		5	**4**	**3**	**2**	**1**
	Ability to meet the basics of life	**SA**	**A**	**U**	**D**	**SD**
1.	Athlete with enhanced performance determines his ability to provide food for his family					
2.	Athlete with enhanced performance determines his ability to provide shelter for his family					
3.	Athlete with enhanced performance determines his ability to provide water for his family					

Appendix II: Interview Guide / Schedule

	Focus Group item	Complete (√)	Not complete	Required action
1.	**ACCESIBILITY COSTS** **A) Cost Of Doping** • What is the cost of any method or substance doping used for doping? • how much do you think it costs? • Do you think an athlete can afford to buy a PES **B) Ease of use** • How easy is it to access and use PES			
2.	**HEALTH COSTS** **A) Concealment** • What methods are used to conceal doping? • Are there athletes who conceal the use of PES? Have you ever concealed use of PES? **B**) **Addiction** • can athletes get addicted to using PES? • Are there athletes addicted to using PES?			
3.	**ECONOMIC STATUS** **A)Financial status** • Can lack of money push athletes to dope ? • Can athlete be pushed by economic status dope? **B)Investment status** • Are there athlete who has invested after doping ?			
4.	**SOCIAL STATUS** **A)Family Standing** • Does doping leads to disintegration of the family • Does doping make families dysfunctional? **B)Societal status** • Can prolonged societal abuse, leads to doping ? • Does use of illicit substances encourage doping?			

5.	**PROFESSIONAL COSTS** **A) Benefits expected** What are benefits- expected income from doping **B**) **professional success** • Is it right to use PES? • Should PES be legalized to be used by all athletes? • Is it right to use PES because everyone uses PEs?			
6.	**WELLBEING** **A)Positive wellbeing** • Athletes have positive esteem • Athletes feel confident • Athletes can build and maintain relationships • Athletes feel engaged with the world • Athletes live and work productively • Athletes can cope with stress **B) Negative wellbeing** • Athletes feel lonely • Athletes have relationship problems • Athletes are worried about their health • Athlete have long-term rejection • Athletes have social isolation • Athlete experience mental breakdown			