RELATIONSHIP BETWEEN BEHAVIOURAL PROFILES AND DEMOGRAPHIC CHARACTERISTICS OF ELITE DISTANCE RUNNERS AT HIGH ALTITUDE TRAINING CENTRES IN NANDI COUNTY, 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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DEDICATION

I dedicate this work to my family, for according me unconditional love during the course of my studies.

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LIST OF ABBREVIATIONS

AK	-	Athletics Kenya
AFL	-	Australian Football League
ANOVA	-	Analysis of Variance
BBC	-	British Broadcasting Corporation
BMC	-	Brihanmumbai Municipal Corporation
BMI	-	Body Mass Index
CBSA	-	Computer Science and Application
DISC	-	Dominant, Influence, Steadiness and Compliant
IAAF	-	International Association of Athletics Federation
IPAQ	-	International Physical Activity Questionnaire
IOC	-	International Olympic Committee
ISSP	-	International Social Survey Program
LTPA	-	Leisure-Time Physical Activity
MBTI	-	Myers Briggs Test
MET	-	Metabolic Equivalent for Task
MIPS	-	Million Instructions per Second
MVPA	-	Moderate- Vigorous Physical Activity
MS	-	Mental Skills
NHANES	-	National Health and Examination Survey
NHANNES	-	National Health and Nutrition Examination Survey
PA	-	Physical Activity
SPSS	-	Statistical Package for Social Science
VPA	-	Vigorous Physical Activity
VO_{2max}	-	Maximum Oxygen Uptake

OPERATIONAL DEFINITION OF TERMS

Athlete	Refers to elite runners who participate in middle and long distance races
Behaviour	Refers to actions of distance athletes exhibited while in a training program.
Behavioural profile	The psychological attributes or traits that enable elite distance runners maximize athletic performance i.e. dominance, influence, steadiness, compliance.
Compliance behaviour	Refers to elite distance athletes that are loyal, focus on order and quality
Demographic Characteristics	Refers to age, gender, type of race and marital status of elite distance athletes
Distance Events:	Refers to middle and long races ranging from 800meters to 10,000 meters.
Distance Runner:	Refers to athletes who train and competes in races ranging from 800m and 10, 000m at elite level of competition
Dominance Behaviour:	Refers to elite distance athletes who are decisive and goal-oriented
Elite Runner:.	Refers to an athlete who was registered and training to compete at National and International competitions
Influence Behaviour :	Refers to elite distance athletes who are outspoken and enjoy training in the company of others.
Running Economy:	Refers to the energy demand for a given velocity of maximal running that is determined by measuring the steady-state consumption of oxygen (V02) and the respiratory exchange ratio.
Self-awareness:	Refers to a clear perception of one's strengths, weaknesses, thoughts, beliefs, motivation and emotions of elite distance athletes

Steadiness behaviour: Refers to elite distance athletes who desire to please and maintain stability in a group.

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ABSTRACT

Behavioural profiling (DISC) is a new invention which has recently began to be used in sporting contexts. However, there is scanty information on quantitative data to support conclusions and recommendations. The purpose of this study was to assess the relationship between behavioural profiles and demographic characteristics of Kenyan elite middle and long-distance runners. The study hypothesized that there is no significant difference in behavioural profiles and demographic characteristics of age, gender, type of race and marital status of elite distance runners. The study adopted a descriptive survey research design. The study targeted a population of 600 elite middle- and long-distance Kenyan runners ranging from 800m to 10,000m races. Stratified random sampling placed athletes in respective races while simple random sampling was used to obtain the representative sample of 235 study participants with a return rate of 98.7%. A validated DiSC® Classic instrument that consisted of a five 5 - point Likert scale was used to collect data. Results revealed that majority of the athletes were aged between 22-30 years. The male distance runners were more than their female counterparts. The type of race recorded more athletes during training for 10,000m. Majority of the participants were single. Participants scored higher mean values in the dominance behavioural profile than the other influence, steadiness and compliance. A paired sample t – test examined behavioural profiles in relation to gender and marital status, results indicated a statistically significant difference in behavioural profiles of male and female distance runners as well as marital status. One-Way Analysis of Variance (ANOVA) examined behavioural profiles in relation to age categories and type of race. Results showed no statistically significant difference in behavioural profiles across age categories and the type of race. In conclusion, gender and marital status are likely to have an impact on the DISC. However, age and type of race are not likely to have an impact on the DISC. Overall, this study recommends that AK should put strategies in place for potential athletes based on age categories, female, type of races and marital status to enrol and train for elite distance running. The study also recommends that athletic coaches, trainers and administrators need to incorporate behavioural profiling in order to help predict psychological orientations in relation to their demographic characteristics.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Currently, sport psychology is advancing at a fast pace in several parts of the world. Cognitive processes are largely associated with excellent performance through strategies to optimize performance (Singer, 1992). Sport psychology is concerned with different aspects of sport – related situational experiences that characterize a state of readiness for competition (Hanin & Stambulova, 2004). There has been an increasing interest in sport psychology in the last 15 – 20 years due to the increased realization that winning is not only due to physical superiority, rather a combination of psychological, physiological and technical factors (Johnson, 2006). A study by Schinke, McGannon & Smith (2016) has reported that countries such as China, Russia and Germany are but a few of the many countries with extremely well developed research and practice in relation to sport psychology. On the contrary, few submissions in terms of research have favoured a selected established countries. These countries include the United States of America (USA), Australia and Canada (Papaioannou, Machaira & Theano, 2013).

Within the realm of sport psychology, Al–Yagon (2012) considers behaviour as a set of responses that share physical dimensions or functions. Pear (2001) describes behaviour as a scientific study of laws that govern the behaviour of human beings and other animals. Similarly, behavioural sport psychology involves the use of behaviour analysis principles and techniques to enhance performance and satisfaction of athletes (Trachuk & Martin, 2002). Behavioural profiles are a summary of characteristic traits and behaviour patterns of an individual. These include Dominance, Influence, Steadiness and Compliance (conscientiousness). Hence, the acronym, DISC. Dominance, Influence, Steadiness and Conscientousness (Compliance) are also referred to as behaviour styles. Behavioural profiling is the act of identifying and measuring characteristic and behaviour references of an individual. In this study, the information from behavioural profiles was measured against age, gender, type of race and marital status using the DiSC® Classic Instrument. DiSC® Classic is a self – assessment instrument that measures how an individual prefers to interact with others or the coach. The DiSC® Classic instrument creates a common language and self – awareness to better understand self and others (Bonnstetter & Suiter, 2007).

Behavioural profiling is a new invention and has recently began to be used in sporting contexts (Kean, 2019)). However, data which would have been utilized to support conclusions and recommendations for further research is lacking. Studies on behavioural patterns and personality have indicated that behavioural profiling has been a rich field in psychology since the mid-1960s. However, there is scanty information on quantitative further research (Furlow, 2000; Duck, 2014). The primary purpose of DISC behavioural profiling is to help individuals develop self - awareness and productive relationships. Self - awareness is the ability to acquire knowledge and perception of one's strengths and weaknesses, thoughts, emotions and behaviours, motivation, habits as well as values and beliefs. Benefits that may be experienced due to development of self - awareness are; better communication skills, more self – confidence and improved relationships with other athletes (Gould and Wright, 2012). Other benefits of the DISC behavioural profiling are; a practical approach to improve performance, effective communication, development of better skills for conflict resolution, productive relationships, tailored coaching and identifying how each person contributes their best (Bonnstetter and Suiter, 2007). The DISC approach helps people understand both their behaviour preferences and that of others. Further, the DISC is believed to be effective in identifying various environments in organizations and enhances productivity. The DISC also helps to promote diversity or differences among people in work positions or teammates for a project (Hymoritz, 2004; May & Gueldenzoph, 2003). Similarly, behavioural profiling tends to bridge the gap between ‘potential’ and ‘great’ sports performance. Evidence of the importance of behavioural profiling is contained in the following;

“*While our advanced physiological and technical knowledge has produced huge progressions and unattainable physical performances, there is a significant ‘knowledge* gap’ *developing in another area that is also critical to creating results. Utilizing this knowledge gap potentially opens a competitive advantage for those who understand and use their skills in the people-side of sport* “*(*Werthner & Coleman*, 2013). “Profiling is an efficient and effective pathway to developing advanced people skills”* (Athlete DISC Profile Report, 2016).

Behavioural profiles represent the whole array of an individual’s characteristics related to behavioural traits. These behavioural traits include, social behaviours, cognitive abilities, emotions and stress responses (Howard & Miriam, 2016; Kean 2016)). Based on the foregoing realization, this study sought selected age, gender, type of race and marital status as independent variables for an interplay with behavioural profiles (DISC) as dependent variables. The science behind DISC Behavioural profiles (styles) suggests that all people possess the four basic behavioural tendencies to varying degrees. The DISC profiles describe human behaviours within a focused environment. The origin of DISC is based on the research conducted in 1928 by William Mouton Marston who was an industrial psychologist (Duck, 2012; Scullard & Baum, 2015; Howard & Miriam, 2016; Kean, 2019). This gave rise to the DISC theory that guided the current study. The theory was founded on earlier theorists, such as Kurt Lewin, who was a social psychologist and Dr. Carl Gustav Jung. The behavioural theory suggests that personality is a result of the interaction between an individual and the environment. Marston concluded that human beings are naturally placed in four profiles, DISC.

Athletes who possess tendencies of the dominance behavioural profile tend to prioritize getting immediate results, take risks, are self-driven, organizers and are innovative. However, they are argumentative, dislike routine and attempt to perform many tasks at once. The influence profile is characterized by expression of enthusiasm, trusting, persuasive, talkative and emotional. However, such individuals are mostly concerned with popularity, inattentive to details and are poor listeners. As for the steadiness behavioural profile, the individuals are good listeners, team players, steady, or predictable understanding and friendly. However, they generally resist change, hold grudges and are sensitive to criticism. Finally, the compliance (conscientiousness) behavioural profile is characterized by accuracy, analysis, precision and order. However, such individuals prefer not to verbalise their feelings and avoid arguments (Heiming, 2010; Allen, Greenlees & Jones 2013; Crowe, 2015).

Based on the characteristics of the DISC behavioural profiling, sports coaches and or trainers of Kenyan elite middle and long distance runners will be expected to communicate with them, adapt or adjust their coaching style to suit the athletes' behaviour preferences. Studies by Wade, (2016) & Wade, (2017) have indicated that effective coaching should be characterized by setting targets, building trust and cohesion, optimizing athlete's learning and designing effective practice environments. Effective communication and helping athletes develop self – awareness during training which could enhance performance. Bo Hanson has stated that generally, for a high 'D' style athlete, the coach should give only vital information and focus on delivering results. In the case of dominantly 'I" style athletes, the coach should purpose to inspire and motivate them especially through tough practices. On the other hand, athletes who belong to the 'S' style will expect coaches to focus on establishing individual attention as well as giving high technical instruction. Finally, athletes who are high in 'C' style will expect coaches to prepare a training program in advance, watch athletes and give their input occasionally. These are usually experienced, highly skilled or elite athletes (Sample, 2011)).

Demographic factors which this study addressed have been considered to be important factors in middle and long distance running. However, as far as age is concerned, Celie, Faes, Hopman, Stalenhoef & Rikkert (2010) revealed that few studies have been conducted on the effect of age on middle and long distance running. Most research has been based on longer distant races which were not targeted by the present study. The study concluded that aging had a minor negative influence on running performance. Similarly, research by Lyke, Ruther, Wunderlich, Sievert, Eβfield, Witzik, Kuchmeister, Piekarski & Lollgen (2010) did not indicate age-related decline in performance before the age of 55.

Most studies on gender contain documented literature that highlights an existence of a gap that is not only considerable but persistent over a long period of time. Nevertheless, currently, the gap has narrowed over the years (Frick, 2011). Another study by Daniel & Daniels (1992) seems to explain the difference in performance between genders concluding that men have a better running economy than women. Hence, the need for this study to capture gender as one of the independent variables.

According to Cunningham, Hunter, Seeley & Feland (2013), running is considered to be the most popular sporting events world over. However, middle distance running has received limited attention as far as documented scientific literature is concerned. Middle distance races consist of 800m, 1,500m, 3,000m and 3,000m Steeple Chase. On the contrary, many studies have been conducted on long distance running (Thompson, 2017). Long distance races, which this study was limited to include, 5,000m and 10,000m. Aerobic capacity, whereby runners exhibit high VO_{2max} values is vital in the performance of distance running (Martino et. al, 2002). High VO_{2max} values that are usually observed amongst elite distance runners include increases in blood volume, capillary density and mitochondrial density coupled with increased stroke volume (Billat, Damarle, Slawinski, Paive & Koralsztein, 2001; Saunders, Pyne, Telford & Hawley, 2004). Hence, the inclusion of the type of race as an independent variable to contribute to scientific literature.

Review literature by Thompson (2017) revealed that marital status has significantly affected the performance of distance runners. Specifically, the study concluded that single status and distance running performance significantly correlated. Ultimately, Smith (2019) contributed to the discussion on marital status of distance runners through the following quote:

"If running is a source of conflict, find balance, find time and manage friendships"

Based on the foregoing, there was need for this study to include marital status as one of the independent variables.

Behavioural profiling (DISC) has been used in the US and Germany to increase sales in their respective companies (Bonnstetter, 2004). It has also been used to arrive at decisions during hiring of new employees in a given organization. The DISC can also be used to maximize duties (Furlow, 2000). In school administration, behavioural profiling has been used to attract and retain students who possess both social and academic skills needed for their success in a boarding environment (Muraton, Colongelo and Assouline, 2013). In the health sector, the DISC approach has been utilized as a tool for communication that motivates patients when engaging in healthy behaviours. Similarly, dental professionals have used it to establish a rapport with dental patients (Scarbecz, 2007).

Behavioural profile has also been used to promote other sports disciplines apart from middle and long distance running. For instance, in the game of softball, the DISC behavioural profiling has been used to create cohesiveness and self-awareness (Hesse, 2009). The Australian Football League mounted an accreditation Level 2 course for coaches based on the DISC model. It is believed that the coaches were able to identify and appreciate athletes' different behavioural profiles. Similarly, the Australian elite rowing team embraced behaviour profiling in order to enhance teamwork (Team Dynamics Report, 2008). In sport, it has been found that the DISC is preferred because it focuses predominantly on developing self-awareness, enables athletes adapt to change when needed and develop better relationships (Stuart- Kotze, 2009). Similarly, Athlete Assessments' DISC profiling is specifically tailored to sports. It is the fastest and most effective way to develop sports programs (Pavlovich, 2018). However, there is scanty information about the use of DISC on elite middle and long- distance athletes in Kenyan.

As far as the relationship between DISC Behavioural profiles and demographics is concerned, scanty information has been documented. However, DISC assessment has been conducted on persons of 18 years or older to facilitate personal development and professional relationship. For instance, a study by Scullard & Baum (2015) exposed men and women to the DISC scales to determine the variance on scores between the two groups. Results revealed that the differences were generally small: the largest differences were observed on the IS (influence, steadiness)). Specifically, women tended to score higher on IS (influence, steadiness), S (steadiness), SC (steadiness, conscientiousness) and I (influence).On the contrary, men tended to score higher on D (dominance, DI (dominance, influence, C (conscientiousness) and CD(conscientiousness, dominance).

Married persons have also been examined against the DISC behavioural profiles to enable them appreciate each other's differences. Behavioural profiles also enhance their relationships. Results showed that behavioural profiling (DISC) enhances relationships through greater levels of communication, encouragement, honour and intimacy (Comparison Report, 2012). In *Run for Your Life News Letter* (2016), profiling has been studied on middle and long-distance athletes against aspects such as physiological (aerobic and anaerobic systems) and psychological factors of improvement in motivation. Further, profiling develops confidence. All the foregoing studies, were focused on general population. Hence the need for this study which was specific to elite middle and long distance athletes.

In Kenya, research has been conducted in areas such as perceived contribution of team sports to psychological satisfaction (Oketch, 2012), sport participation and examination - related stress (Muniu, 2011) and psychological factors that influence training and performance of female athletes in sports (Ndambiri, Mwisukha & Muniu, 2013). Other studies have been conducted on motivational orientations in sport (Rintaugu & Nteere, 2011), family and its influence on Kenyan athletes' performance by Simiyu, Benoit &

Kidi (2017), effects of gender on goal-orientation and satisfaction (Mugala, Wamukoya & Njororai, 2016; Mugala & Wamukoya, 2017), motivational gender differences in sport and exercise participation (Rintaugu & Ngetich, 2012) as well as dietary supplements use among Kenyan male rugby players (Mse, Njororai & Kimiywe, 2008). Therefore, it is evident from the foregoing studies that there is scanty information of on behavioural profiles in relation to demographics of elite middle and distance athletes in Kenya. Hence, the need for this study to fill the existing gap.

Apart from aerobic conditioning and coaching, investing in infrastructure and improving athletes' welfare, psychological support (DISC behavioural profiling) during training could be the best strategy to enable elite middle and long-distance Kenyan runners gain a more competitive edge. A study by Kotze (2009) has indicated that the DISC behavioural profiling enables athletes develop self - awareness and better relationships: an environment that is conducive for better performance. Pavloch (2018) has also revealed that the DISC approach is the fastest and most effective way for developing sports programs. As for Kenyan's performance in the 2017, London and 2019, Doha, G), the DISC behavioural profiling may help elite middle and long distance runners receive communication in an effective manner, develop productive relationships and ultimately compete favourably and consistently at IAAF World Championships(IAAF, 2017 ; IAAF, 2019). It was difficult for Kenyan athletes to reverse the trend in the 2019 World Championships as shown in table 1. 1.

Table 1 .1 Kenya's Performance in Middle and Long Distance Races at IAAF World Championships (2017 and 2019)

RACE	2017 (LONDON)	2019 (DOHA, QATAR)
800m(W)	Bronze	___
800m(M)	Bronze	Bronze
1,,500m(W)	Gold	Silver
1,500m(M)	Gold	Gold
3,000m(W)	Silver	Gold
3,000m(M)	Gold	Gold
5,000m(W)	Gold	Gold, Silver
5,000m(M)	Bronze	___
10,000m(W)	Bronze	Bronze
10,000m(M)	Bronze	Bronze

Based on the performance of Kenya’s elite middle and long distance runners in table 1.1, Kenya did not win gold in 800m. As far as the 3,000m is concerned, the Kenya team not feature in the medal bracket. In 5,000m, the men did not excel in both (2017 and 2019) IAAF World Championships. Evidence has shown that Kenya has not excelled in 10,000m men, since the Mexico Olympic Games in 1968. Hence, the need for the DISC behavioural profiling and demographics of age, gender, type of race and marital status.

1.2 Statement of the Problem

Behavioural profiling was originally used by corporate organizations to enhance teamwork, communication and make wise decisions during hiring of new employees. Behavioural profiling also enables teams to understand their individual behavioural differences, build harmonious relations and enhance productivity or performance. Studies on behavioural patterns and personality have indicated that behavioural profiling has been a rich field in psychology since the mid-1960s. However, there is scanty information for quantitative further research (Furlow, 2000; Duck, 2014). Generally, there is also limited scientific literature on demographic characteristics of age, gender, type of race and marital status with behavioural profiles, in distance running. Sport disciplines that have embraced behavioural profiling during their training are softball, football and elite rowing; all of which have been based in Australia. In Kenya, research has been conducted in such areas as motivational orientations in sport (Rintaugu & Nteere, 2011), family and its influence on Kenyan athletes' performance (Simiyu, Benoit & Kidi,2017) and effects of gender goal-orientation and satisfaction (Mugala, Wamukoya & Njororai, 2016). Hence, the need for this study to assess the relationship between behavioural profiles (DISC) and demographic characteristics (age, gender type of race, marital status) of elite middle and long distance athletes.

Apart from aerobic conditioning and coaching, elite middle and long-distance runners require psychological support through behavioural profiling. This is because distance running also requires athletes to develop self - awareness, appreciate their behaviour differences and develop harmonious relationships, amongst other benefits, in order to excel. Similarly, in Werthner & Coleman (2013), performance through people, emphasis has been laid on the need for behavioural profiling in sports as follows:

"*While our advanced physiological and technical knowledge has produced huge progressions and unattainable physical performances, there is a significant 'knowledge* gap' *developing in another area that is also critical to creating results. Utilizing this knowledge gap potentially opens a competitive advantage for those who understand and use their skills in the people-side of sport. Profiling is an efficient and effective pathway to developing advanced people skills"*

Against this background, it is clear that behavioural profiling for elite middle and long-distance athletes should be embraced in Kenya. Based on table 1.1, Kenya's performance at IAAF World Championships could be improved and be made consistent if training is coupled with behavioural profiling. A study of this nature is even more necessary as it may provide information that is useful to coaches especially on how they are expected to communicate to individual athletes during training sessions.

1.3 Purpose of the Study

The purpose of this study was to assess the relationship between demographic characteristics and behavioural profiles (DISC) of Kenya's elite middle and long distance athletes at high altitude training centres in Nandi County, Kenya. The independent variables were age, gender, type of race and marital status while the dependent variables were dominance, influence, steadiness and conscientiousness.

1.4 Objectives of the Study

The study addressed the following specific objectives

i. To establish demographic characteristics of Kenyan elite middle and long distance runners.

ii. To determine behavioural profiles (DISC) of Kenyan elite distance runners across their age categories.

iii. To ascertain behavioural profiles (DISC) of Kenyan elite distance runners across gender.

iv. To establish behavioural profiles (DISC) of Kenyan elite distance runners across their type of races.

v. To determine behavioural profiles (DISC) of Kenyan elite distance runners across their marital status.

1.5 Research Questions

The study addressed the following research questions;

i. What are the demographic characteristics of Kenyan elite middle and long distance runners?

ii. Are there significant differences in behavioural profiles (DISC) of Kenyan elite middle and long distance runners across their age categories?

iii. Are there significant differences in behavioural profiles (DISC) of male and female Kenyan elite middle and long distance runners?

iv. Are there significant differences in behavioural profiles (DISC) of Kenyan elite middle and long distance runners across their varying events?

v. Are there significant differences in behavioural profiles (DISC of Kenyan elite middle and long distance runners across their marital status?

1.6 Research Hypotheses

The hypotheses of the study included the following;

H_{01} There would be no significant difference in behavioural profiles (DISC) of Kenyan elite middle and long distance runners across their age categories.

H_{o2} There would be no significant difference in behavioural profiles (DISC) of Kenyan elite middle and long distance runners across gender.

H_{o3} There would be no significant difference in behavioural profiles (DISC) of Kenyan elite middle and long distance runners across their varying events.

H_{04} There would be no significant difference in behavioural profiles (DISC) of Kenyan elite middle and long distance runners across their marital status.

1.7 Significance of the Study

This study might contribute significantly to the body of knowledge in the field of sport psychology. It could also serve as a reference for researchers and scholars who wish to gain an understanding of behavioural profiling in relation to demographic characteristics, especially among elite middle and long distance runners in Kenya. This study may also serve to expose the gap that exists in the lack of knowledge in assessing behaviour profiles on demographics of distance runners. Incidentally, the data could enable athletes, coaches, educators and other stakeholders appreciate the importance of DISC as a necessary strategy in enhancing teamwork, relationships, communication and productivity during training sessions and competitions. Behavioural profiling in distance running may also be used in identifying and stratifying athletes in Kenya and the rest of the world. Lastly, the current study could form the basis for further studies in the field of sports psychology.

1.8 Delimitations of the Study

This study was confined to elite middle and long distance track athletes who train in high altitude training centres in Nandi County, Rift valley region, Kenya. Majority of the study participants were middle and long distance runners who hail from Nandi, county. The present study also used a self- administered questionnaire known as the DISC® Classic as the main instrument for data collection.

1.9 Limitations of the Study

This study targeted elite athletes who train at the high altitude training centres in Nandi county which is situated in the Rift Valley region of Kenya where majority hail from. Therefore, although the findings may, to an extent apply to other training regions in Kenya, they may not be generalized without modifications in their interpretation.

1.10 Assumption of the Study

This study was based on the assumption that the relationship between behavioural profiles (DISC) could be assessed through a self - administered DiSC ®Classic tool.

1.11 Theoretical Framework

The current study was guided by the DISC theory. According to Mattern (2013), the DISC theory is believed to have been developed by, Dr William Moulton Marston in the 1920's. Dr Marston invented the DISC theory through his PhD thesis titled, "Emotions of Normal People". Later, he followed his career as an industrial psychologist. The DISC is an acronym for Dominance, Influence, Steadiness and Conscientiousness (Compliance). The DISC theory divides behaviour into four dimensions; dominance, influence, steadiness and conscientiousness (compliance). Marston developed descriptive categories that made a practical application of his model possible. The research by Bonnstetter & Suiter (2007) has revealed that the main objective of the DISC model is to provide practical strategies to improve performance through developing self-awareness, effective communication, interpersonal relationships, tailored coaching and to identify how each person contributes their best.

Initially, the DISC theory was adapted for the business community and educational institutions. Therefore, the DISC theory was first used among the business community. Later on, it was adopted for sports by Bo Hanson, who was a four-time Olympian rower. For instance, the DISC theory has been utilized in the United States of America and Germany to increase sales and productivity. It was also noted that the DISC theory assisted the corporate organizations to make proper decisions during the hiring process of their employees (Furlow, 2000).

In a school setting, the DISC theory has helped in attracting, motivating and retaining students who possess both the social and academic skills needed for their success, especially in a boarding environment (Muraton, Colangelo & Assouline, 2003). While in the health sector, research shows that dental professionals have used the DISC in two ways. First, as a communication tool that motivates patients to engage in healthy behaviours. Second, the DISC theory enabled dental professionals to establish a rapport with dental patients through persuading them to accept treatment plans that are necessary for overall health (Scares, 2007).

In sport, whatever differentiates the ‘best’ or ‘great’ performance is never the technical ability or physical training alone. Rather, the athlete who possesses the best mental and emotional intelligence that may be achieved through the DISC Behavioural profiling (Whitman, 2008). According to the Cambridge Advanced Learner’ Dictionary (2017), “Emotional intelligence is the ability to express one’s emotions and handle interpersonal relations judiciously”. It is evident that the DISC approach has been used in the game of Softball to enhance cohesiveness and develop self-awareness. It has also been embraced by the Australian Football League during the Level 2 accreditation course. Eventually, the coaches were able to appreciate diversity in the players’ behaviour profiles (Duck, 2006). In the Australian Elite Rowing team, the players used the DISC Behavioural Profiling to enhance teamwork (Correct, 2009).

However, the DISC theory has not been used among elite middle and long- distance athletes in Kenya and elsewhere in the world.

1.12 Conceptual Framework

The conceptual framework for the current study was drawn from the DISC theory. The conceptualization of the theory illustrates independent and dependent variables of the study. The independent variables were age, gender, type of race and marital status. The DISC Behavioural Profiles reflected as dominance, influence, steadiness and conscientiousness (compliance) were dependent variables. The DISC behavioural profiles suggest that all people, possess the four basic behavioural tendencies (dominance, influence, steadiness and compliance or conscientiousness) to differing degrees (Jones, Morris, Hartley & Morris, 2013; Fasilihizadah, Oreyzi & Nouris, 2012).

Therefore, the current study sought to assess the relationship between behavioural profiles and demographics of elite middle and long distance Kenyan athletes. Elite distance runners in Kenya, like workers of companies, industries, health care sector, softball athletes, football athletes and elite rowers require the DISC Behavioural Profiling. According to Coleman & Werthner (2017), elite distance runners could maximize their athletic performance through effective relationships and developing self-awareness. Once self-awareness is realized, middle and long distance athletes should be able to recognize strengths and limitations of their behaviour profiles. This will enable them work harder to reduce their limitations and ultimately, sustain their athletic performance.

According to the DiSC® Indra Research Report (2003), the DISC approach increases self- awareness and improves team relationships. It also develops effective communication skills which motivate and enable them achieve the set objectives. The characteristics of the DISC behavioural profiles attract tailored-coaching. The DISC strategy helps in developing interpersonal relationships which enhance team work.

Individuals who possess the dominance behavioural profiles may exhibit aspects of authority, decisiveness and largely focus on results. Those elite middle and long distance runners who, to a large extent, possess tendencies of the influence behavioural profile enjoy training in the company of others and so are extroverted, talkative and energetic. Similarly, athletes who belong largely to the steadiness behavioural profile will expect explicit or clear instructions given by their respective coaches, they are loyal, patient and value team work. Further, those elite distance athletes whose behaviours dominantly fall in the conscientious or compliance behavioural profile will expect the coaches to prepare a program that they would adhere to, they usually follow rules to the latter and are process-driven. The DISC approach also contributes towards improving team effectiveness by identifying each person's role. This may be achieved through understanding their own behaviour preferences as well as behaviour preferences of other team members. Ultimately, the conceptual framework exhibits a situation where the independent variables (age, gender, type of race and marital status) may play a role in the distribution of the DISC behavioural profiles across elite middle and long- distance Kenyan athletes. Figure 1.1 shows an interplay between independent variables and dependent variables of the study participants.

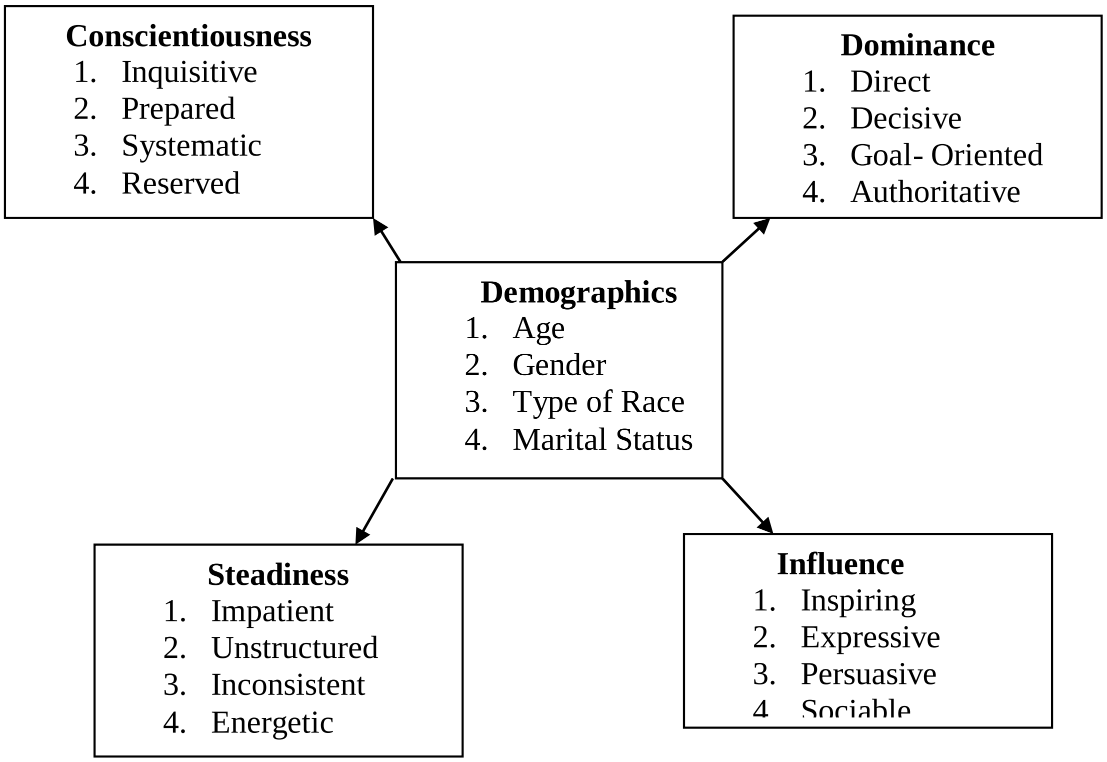

Figure 1.1 Variables associated with Behavioural Profiles - Adapted from Crowe (2015) and Kean (2019).

CHAPTER TWO: LITERATURE REVIEW

2.1 Demographic Characteristics of Elite Middle and Long Distance Runners

This study sought to establish demographic characteristics of Kenyan elite middle and long distance runners. Generally, few studies have been conducted on demographic characteristics of age, gender, type of race and marital status in middle and long distance running (Lyk et. al, 2010; Celie et. al, 2010; Thomson, 2017). Hence, the need for the present study to investigate these selected factors as independent variables as shown in figure 1.1.

2.1.1 Age Categories of Elite Middle and Long Distance Runners

Age is an important factor in determining successful middle and long distance running. Age assists athletes to continue competing by adapting and reinventing themselves at each milestone. The current study selected the ages of elite middle and long distance Kenyan runners based on four categories namely; 21 years and below, 22 – 30 years, 31 – 40 years and above 40 years. Other related studies have also used age as an important variable in determining distance running, as highlighted in the subsequent studies.

Few studies have been conducted on the effect of age on running performance. Most studies have been based on longer distance races than those which this study was limited to (Celie et. al, 2010). A study by Lyke (2010) focused on 900,000 running times of a physically active subgroup of 13,171 marathon and half marathon participants aged between 20 and 70 years. The study assessed endurance of the participants using stratified analysis for age. The participants responded to a questionnaire that had features of sports, lifestyle and health. Generally, there was moderate decline in performance. There was no significant performance before age of 55. Approximately, 25% of participants were faster than 50% of those who were aged between 20 to 54 year old runners. In conclusion, decline in performance among participants in the middle age category were mainly due to sedentary lifestyle. Participants at advanced ages are likely to achieve high performance through regular training. Hence the need for the current study to establish the demographic characteristic of age ranging from 21 to above 40 years amongst middle and long distance.

Research by Celie et. al, (2010) investigated age – related changes in running performance in the most popular Dutch road run and how this is influenced by gender, training and increased participation rate over the last decade(1995-2007). The study was a retrospective analysis on 194,560 participants of a 15 km run. Multiple regression analysis examined running time by age, gender, and training. Chi-square and ANOVA examined trends in participation. Trends in running time and speed were examined by t-tests. Results showed an increase in running time by 0. 20% per year ($p< 0.001$). The study concluded that aging had only a minor negative influences on running performance. However, the current study established age categories amongst elite middle and long distance runners.

Scullard & Baum (2015) investigated the distribution of dominance, influence, steadiness and compliance or conscientiousness behavioural profiles (DISC) among adults (n=26,703) aged 18(eighteen) years or older. The study established that tendencies of dominance behavioural profile were goal-oriented, authoritative, decisive and explicit. The influence behavioural profile were characterized by individuals who are majorly inspiring, expressive, persuasive and sociable.

Apart from that, individuals who had a tendency towards steadiness behavioural profile were found to be impatient, generally unstructured, inconsistent and energetic. Lastly, the compliance or conscientiousness category of behavioural profiles were characterized by being orderly, inquisitive, reserved and had higher levels of preparedness. The results also revealed that 81.3% appeared more inclined towards their DISC profiles and therefore more likely to choose priorities of those profiles over those of other profiles or styles. Approximately 18.7% seemed to find it fairly easier relating to the priorities of other profiles. The study methodologies did not disclose whether the population comprised of athletes or not, unlike the present study that comprised of elite distance runners. In both studies, data collection and analysis were accomplished using a validated DiSC® Classic tool and One-Way ANOVA respectively. Therefore, the present study sought to assess the relationship between behavioural profiles and age was guided by the descriptive survey research design.

Research on athlete profiles have taken both psychological and physical dimensions. A study on physical profiling was conducted by Smart (2011). The study sought to establish the effectiveness of a 15-week supervised off-season physical training or conditioning among 14 adolescent Rugby Union players. The off-season program was compared with the unsupervised program. Specifically, short-term changes were identified following immediate post conditioning exposure. However, consistent effects were established after a 6-month unsupervised competition phase. Results of the supervised training were quite significant. The results revealed that supervised training enhanced training in strength with small to large (9.1% to 50%) differences between the groups' increases in one repetition (1RM) based on the conditioned program. Incidentally, strength dropped in the supervised group during competition, while it did not show any drop in the group that was under supervision. There was a small clear difference between the group's long- term changes in box- squat IRM (15%). There were also trivial and unclear differences in body composition, age, and speed, aerobic and anaerobic running performance. However, this study assessed the relationship between behavioural profiles and demographic characteristics.

A study conducted by Kruger & Saayman (2014) focused on profiling triathlete participants who took part in the iron man triathlon championship in South Africa. Participants were placed into four age categories (< 30 years- young triathlete, 31-40 years- adept triathlete, 41-50 years- mature triathlete-, 51+ years- senior triathlete) according to their level of experience in the sport. Triathlon is an endurance event that is characterised by swimming, cycling and running. About 425 self –administered questionnaires were distributed. Results indicated that age was a significant factor in commitment, motivational, loyalty levels hence a successful way of categorizing athletes. Also, it was revealed that age groups portray different sport and spending behaviour as well as motives.

From a comparative perspective, the study by Saayman (2014) used 425 triathletes while the current study targeted 235 middle and long- distance athletes. Profiling was done based on age categories alone while the current study established behavioural profiles (DISC) of Kenyan elite middle and long distance runners in relation to age. However, both studies agree on age as a common independent variable but differ at DISC, different sports, spending behaviours and participation motives as dependent variables.

Further, other studies have indicated that age is a significant variable when considering psychological orientations among athletes. Mugalla and Wamukoya (2017) investigated influence of age on satisfaction levels of Kenyan volleyball league players who were playing in national division one and two. The study was guided by the self-determination theory. The athletic Satisfaction questionnaire captured 15 subscales of sports satisfaction. A total of 134 players were sampled for the study. The study analysed data using descriptive statistics and t-test.

The findings of the study were based on the independent group t-test ratios on the satisfaction scale showed significance ($p<.05$) on Team Social Contribution ($p=0.007$): ethics ($p=0.043$); team Integration ($p=0.30$); academic Support Services ($p=0.004$); External agents ($p=0.001$). The implication of these findings is that age influences satisfaction in sports and physical activity recommending an enhancement of varied satisfaction components by coaches and trainers to maximize participation and performance. On the contrary, the present study was founded on the DISC theory, targeted elite middle and long-distance athletes, used the DiSC® Classic instrument for data collection and analysed data using One-way Analysis of Variance (ANOVA).

Zavorsky, Tomko & Smoliga (2016) determined the age group at which marathon performance declines in top male and female runners and compared that with the average ability of the runners. The researchers also examined age-related yearly decline in marathon performance between age-group winners and average finishers. Multiple linear regression modes were used to determine the rate of decline in marathon time. The winners in each age-group were assessed in 5-year increments from 16 years through 74 years old ($n=47$ per group). Elite performance in 35-39-year-old age-group was significantly slower compared to the fastest age-groups (25-29 and 30-34 years old age-groups).

There was significant reduction in performance amongst runners aged 55-54 compared to younger age groups. In addition, at 35 years old, the rate of decline in male age group winners was about 2 minutes per year while the rate of decline in women age group winners was about 2 minutes - thirty seconds (2mins 30 secs) per year. Average runners were expected to decrease with age. In conclusion, the rate of decline at 35 years old up to 74 years old was roughly linear (adjusted $r^2 = 0.88$, $p< 0.001$). The female age - group winners seemed to have demonstrated 27 seconds per year decline compared to male age - group winners (Nikolaidis, Roseman & Knechtle (2018). The two studies differ in research design, target population, data collection instrument and data analysis tools. Hence the need for the present study on establishing age categories amongst elite middle and long distance runners.

Psychological skills profiles are believed to enable athletes complete a race. A study by Coumbe - Lilley, Hamstra - Wright & Weidner (2015) examined the psychological skills profile of sub-elite marathon competitors that enabled them to complete the race. The research targeted healthy adults (n=125) participating in an 18 - week marathon training program. The study was guided by the Cohort survey research design. Descriptive statistics of each subscale category (basic- attitude, motivation, goals and commitment, people skills; preparatory- self-talk, mental imagery; performance – dealing with anxiety, emotions, and concentration) were performed to assess the differences in subscales across four training time sprints. The training time intervals were placed into three phases; Pre - training for 6 weeks, during training for 12 weeks, and Post training). Findings demonstrated that attitude and commitment to goals strengthened significantly from week 6 – 12; perceived ability to cope with anxiety and managing emotions decreased from pre-training through post training; motivation, self-talk and imagery were inconsistently rated over time. These findings suggest that age is significant when conducting research on athletes. However, the current study focused on age as one of the demographic characteristics since studies have revealed that limited research has documented the effect of age on middle and distance running.

Furthermore, a study by Trost, Pate, Sallis, Freedson, Taylor & Sirard (2002) focused on age differences in measured physical activity (PA) in a population sample of students in grades 1-2. The participants (male=185, female n=190) wore a CSA 7164 accelerometer for seven consecutive days. The age-related trends were examined by grouping them in various categories; grades 1-3 n=90, grades 4-6 n=91, grades 7-9 n=96, and grades 10-12 n=92. Findings of the study revealed that a daily MVPA and vigorous physical activity (VPA) exhibited a significant inverse relationship with grade level. The largest differences occurred between grades 1-3 and 4-6. In conclusion, PA declined rapidly during childhood and adolescent. This was an indication of how age influences performance during physical activity. Hence, the need for the current study on age as an independent variable of elite middle and long distance runners.

In another age - related study, Kouthouris (2005) examined the most important constraints among recreational skiers they. The study placed skiers in categories based on their levels of participation, demographic characteristics and perception constraints. Data was collected by means of a site survey in South Greece. Participants (n=268) filled the questionnaire (Leisure- constraints questionnaire) and a response rate of 88% was achieved. Age – categories of the participants ranged as follows; 18- 25, 26-35 and 36-65. Levels of participation were ‘infrequent ‘, ‘moderate’, and ‘frequent’. The level of participation was negatively correlated with the advancing age group levels (p<.01). Those participants aged between 18 – 25 years and participated infrequently achieved the highest rate (40.2%). The older participants aged 36-65 (52.9%) participated infrequently, in physical activity (Kouthouris, 2005). However, the current study targeted elite middle and long distance Kenyan athletes, used the DiSC® Classic instrument for data collection and One-way ANOVA for data analysis.

2.1.2 Gender of Elite Middle and Long Distance Runners

Many studies have documented an existing and persistent gender gap in competitive distance running. While previous studies had revealed that gender gap had considerably narrowed over the years (Frick, 2011). It is expected that gender differences in running should disappear as distances increase; beyond the marathon (Coast *et. al*, 2004). Hence, the current study investigated gender as an independent variable amongst elite male and female middle and long distance runners.

An investigation was conducted on age – related changes in running performance in the most popular Dutch road run and how this is influenced by gender, training and increased participation rate over the last decade (1995-2007). The study was a retrospective analysis on 194,560 participants of a 15 km run. Multiple regression analysis examined running time by age, gender, and training. Chi-square and ANOVA examined trends in participation. Trends in running time and speed were examined by t-tests. Based on the study, running time was 13% ($p<0.001$) shorter in men than in women. It was also concluded that there was 15.70% ($p < 0.001$) shorter amongst participants who engaged in regular training (Celie et. *al*, 2010). However, the present study investigated the demographic characteristic of gender as an independent variable of elite middle and long distance runners.

Scullard & Baum (2015) examined differences between women and men in relation to dominance, influence, steadiness and compliance (DISC). A sample of 26,703 respondents were used in the study. It is reported that the differences were generally small. Specifically, the largest differences were observed on the IS (influence, steadiness) scale whereby gender accounted for 3.7% of the scale variance. Women tended to score higher after responding to the I (influence), IS (influence, steadiness), S (steadiness) and SC (steadiness, compliance) scales. On the other hand, men tended to score higher on the D (dominance), DI (dominance, influence), C (conscientiousness) and CD (conscientiousness, dominances) scales. However, the present study had a relatively smaller sample (235). There was no mention of the study design as compared to the descriptive research design for the current study. It seems as though the DiSC® Classic tool was used to collect data which is a similarity with this study. Again, the t – Test examined the data for elite male and female middle and long distance runners.

Leisure-time physical (LTPA) has attracted a lot of research in the recent past. Pitsavos, Panagiotakos, Lenzasy & Stefanadis (2005) evaluated the prevalence, frequency, and type of leisure-time physical activity (LTPA) among adults in Greece. The study also focused on the relationship with socio-demographic lifestyle and clinical characteristics. The target population consisted of 1514 men and 1528 women. These participants had no evidence of cardiovascular or any other chronic diseases. Stratified sampling was used to establish gender distribution (Census, 2001) of the larger Athens. Weekly energy expenditure was assessed by considering frequency, duration (in minutes) and intensity. Both men (53%) and women (48%) were classified as physically active. The impression created was that men were likely to be active ($p=0.05$) as compared to their women counterparts. The older participants (40 – 49 years) scored the lowest activity rates ($p<0.01$). It was concluded that physically active people were characterized by higher occupational skills, more likely to live in rural areas, unmarried, non-smokers and were devoted to a healthier diet pattern compared to sedentary or inactive persons. Hence, the need for elite middle and long distance runners in this study.

Regular physical activity across lifespan has health benefits. Levels of participation are likely to differ based on gender. Van Uffelen, Khan & Burton (2017) identified motivating factors and preferences for physical activity and examined gender differences in their sixties. Those participants who were aged 60-70 years responded to an email survey in Brisbane, Australia. The rest of the participants in the study indicated either agreed or disagreed (self-reported PA) with seven (7) PA motivators and fourteen (14) PA context preferences. Multi- level logistic regression (data analysis) was adjusted for sociomographic health variables and PA levels.

Findings revealed that out of 1,845 respondents, 59% was female. About 35% did not meet the PA guidelines of at least 150 minutes of moderate intensity PA per week. Women were more likely than men to be motivated by improving appearance, spending time with others, meeting friends or losing weight. The study also revealed three leading context preferences for both men and women; activities close to home, at low cost and could be done alone. Further, women were more likely than men to prefer activities that are performed with people of the same sex, at a fixed time. Women were less likely to prefer activities that are competitive, vigorous, require skill, practice and performed outdoors. Based on these results, the study noted that the three leading motivating factors for both women and men were; to prevent health problems, to feel good and to lose weight. Overall, there were marked gender differences. Therefore, there was need for further investigation on gender through the current study.

Currently, gender issues in relation to physical activity have been given attention in the global world. A study by Chachashvili- Bolotin, Lissitsa & Galily (2010) investigated gender differences in physical activity participation in Israel at the threshold of the 21^{st} century. Data was obtained in 2007 as part of International Social Survey program (ISSP) through face-to-face interviews among 18-year-olds and older (n=1032). Interviewees were divided into groups by Cluster Analysis (CA). The following clusters were used; A. sport in the soul-pro-sport as well as active in PA, B. Anti-sport- holds a negative standpoint towards sport and not physically active, C. Armchair sportsman- holds a positive attitude towards sport, however they are not active, D. Sports as fashion-an active person who holds a neutral or negative attitude towards sport. The study concluded that men tended to be part of the anti-sport and sports as fashion. Men also tended to be part of the armchair- sportsman groups and were more positive towards sport than women. On the contrary, it was concluded that women tended to participate in PA for instrumental reasons. Finally, the study recommended that main socialization agents should encourage competitive and social aspects of physical activities between men and women. On the contrary, the present study was specific to elite middle and long distance runner and had a smaller sample size (235). It is hoped that this study would contribute to the world of knowledge on the demographic characteristic of gender amongst distance runners.

Another study by Trost, Pate, Sallis, Freedson, Taylor & Sirard (2002) evaluated gender differences in the performance of physical activity (PA). The study sampled pupils in grades 1-2. The participants (male=185, female n=190) wore a CSA 7164 accelerometer for seven consecutive days. The study evaluated performance of participants in physical activity (PA). The study also focused on the time spent during the performance in moderate- to- vigorous physical activity (MVPA). Findings revealed that a daily MVPA and vigorous physical activity (VPA) indicated a significant inverse relationship with grade level. The largest differences were observed between grades 1-3 and 4-6. In conclusion, boys were more active than girls. However, on overall PA, the magnitudes of the gender differences were modest. Hence, the current study which was guided by the exploratory design and used the DiSC® Classic for data collection as well as a t – Test for data analysis. Perhaps, a further study could investigate behavioural profiling amongst boys and girls.

An investigation by Kothouris (2005) was conducted on recreational skiers to establish the most important challenges facing them. The study also profiled the recreational skiers according to their levels of participation, demographic characteristics and challenges in perception. Data was collected by way of a site survey in South Greece. Participants (n=268) filled the questionnaire (Leisure- constraints questionnaire) and a response rate of 88% was realised. The questionnaire consisted of levels of participation by gender. Levels of participation were; ‘infrequent ‘, ‘moderate’, and ‘frequent’. Findings of the study revealed that there was an association between participation and gender ($p<.05$). Male recreational skiers exhibited higher participation rates than female. Findings from the study revealed that n=25 (56%) males and n=14(6%) females participated in sprints while n=1(2.5%) undertook long distance running. There were no female participants aged between 20-29 years. The study suggested the need to mount transition programs that would engage athletes who retire from active physical activity. However, the current study, targeted elite middle and long distance runners. Hence, the need for this study.

More studies have continued to show gender disparity in levels of participation of physical activity (PA). Telford, Telford, Olive, Cochrane & Davey (2016) investigated the reasons why girls were less physically active than boys. The study targeted 276 boys and 279, aged 8 and 12 years from 29 schools. Multilevel models were fitted separately for boys and girls to examine effects of individual, family and environmental level. Correlates on pedometer measured physical activity (PA). Individual correlates (cardiorespiratory fitness- multistage run, percentage fat, eye-hand – coordination - throw and catch test and perceived competence in physical education questionnaire) were used. At family level, parents support and physical education questionnaire were used. Environmental level variables consisted of schools attended and co-curricular sport participation.

Girls were 19% less active than boys ($p<0.001$). Lower levels among girls was associated with weaker influences at the school, weaker influences at the family, and lower participation in co-curricular sport. The school that they attended was responsible for some variation in boys' physical activity (8.4%) but not girls. The girls had 18% lower cardiorespiratory fitness ($p< 0.001$), 44 % lower eye-hand co-ordination ($p< 0.001$, and lower perceived competence in physical education ($p < 0.001$). In conclusion, physical activity (PA) for girls was less favourable and influenced by socio-ecological factors such as individual, family, school attended and environmental levels factors. However, in spite of differences in the target population, sample size and methodology, both studies have revealed that there was a disparity between boys and girls or female and male participants. Hence, the need for the present study that investigated gender characteristic of elite middle and long distance runners.

Research evidence has also shown that young male and female should be encouraged to participate actively in physical activity. Using a self-determination approach, Lauderdale, Yli- Piipari, Irwi & Layne (2015) investigated the relationships between 96 college students (n= 33 males, n= 63 females) aged 18 to 24 years. Analysis of variance (ANOVA) revealed that levels of physical activity had a significant interaction with intrinsic motivation (F1, 94) =9.45, $p<0.00$) and identified regulation; $F(1, 94) = 6.45$, $p= 0.003$. The p values for the least significant difference tests between inactively and moderately inactive groups as well as inactive and very inactive groups were between 0.011 and 0.000. In conclusion, there was a significant gender difference whereby the males responded more positively towards intrinsic

Motivation ($t=3.40$, $p=0.001$). The study recommended that college students should be assisted to live a more physically active and healthy lifestyle. Both studies had gender as a variable and data were analysed using a paired sample t-test. Hence, the need for the current study which focused on the relationship between behavioural profiles and gender of elite middle and long distance runners.

More studies have targeted gender differences in relation to physical activity participation levels. A review article prepared by Hands, Parker, Cantell and Rose (2016) investigated differences in physical activity levels and exercise behaviour between the genders. According to the theory of human revolution, male were expected to be strong, physically fit and courageous in order to compete favourably with other male counterparts. This study sought to assess the relationship between behavioural profiles and gender of elite middle and long distance runners.

Further, Hands et.al, (2016) found that societal expectations also play a powerful role in moulding male and female behaviours. Females and male differ in their attitudes and motivations towards sport and exercise across the lifespan. For instance, boys are more attracted by physical exertion which influences their participation choices. Similarly, the demonstration by physical prowess and social status was generally the most important goal. Girls tended to be more motivated by friendships, personal satisfaction, body image and self-expression. Gender differences in motivation, attitudes and parent expectations were manifested into a wide range of play and intensity of physical activities. The boys' games involved speed, strength, endurance and aggression. The girls played less vigorously and; competed rationally, engaged in play parenting activities, focused on turn- taking, exhibited orderly sequences, were partially involved and preferred solitary activities.

As for interactions, girls spent more time in smaller same-sex groups, engaged in verbal games and conversations. However, boys played in larger groups which enabled them engage in more physically active team games. Based on gender differences, public policy should take into account various needs and strive to promote gender equity. This study sought to assess the relationship between behavioural profiles (DISC) and demographic characteristics of elite middle and long distance athletes.

Research evidence suggests that it remains unclear whether gender equality is associated with leisure-time physical activity (LTPA). Balish, Rathell, Deaner & Rainham (2016) investigated benefits of gender equality in predicting leisure-time physical activity in both sexes. Data from 34 countries were acquired from the International Social Survey Program, the PEW Research Forum, the United Nations and World Bank. The study used separate analyses on n=21,502 male and n= 26,652 female. Hierarchical nonlinear Bernoulli Modelling was used to examine the association between gender equality and participation in LTPA.

Findings revealed that males and females who resided in countries with higher gender equality were more likely (twice and three times) to report weekly LTPA than those residing in countries characterized by low gender equality. Moreover, significant variation in LTPA persisted at country level, suggesting the need for further research. Based on the findings, it was hypothesized that gender equality decreased the average number of offspring and in turn, it was expected to allow mothers more time for increase leisure - time physical activity (LTPA). Therefore, this study assessed the relationship between the DISC and demographic characteristics.

Studies on Gender in relation to physical activity have increased in the recent past. Hickey & Manson (2017) investigated gender differences in relation to participation rates, motivators for and barriers to exercise. The study targeted four groups: college students (n=195, 65.3% females and 34.7% male) aged 18 – 24 years old; community groups (n=75, 64% female, and 36% male); youngest community participants (n=25) aged 25-44 years old; middle community groups (n=20) aged 45-64 years old; and older community groups (n= 30) aged 65-89 years old. An independent samples Mann-Whitney U test revealed significant gender differences among the college sample in the four categories that were involved in the study; number of hours of participation in exercise ($p<.001$), number of activities ($p<.040$) and the number of motivators ($p<=.047$). Compared to women, men spent more hours participating in exercise, more types of activities and had a greater number of motivators. Also, women reported having more barriers to exercise than men.

Specifically, the study suggested strategies to encourage greater participation by motivating factors, minimize barriers to exercise, and increase understanding of the types of activities that best suit men and women across the lifespan. Both studies differed in the dependent variables; more hours of participating in exercise, motivating hours, types of activities and behavioural profiles (DISC) respectively. The studies also differed in data analysis tools. Hence, the need for the present study that focused on the relationship between behavioural profiles (DISC) and demographic characteristics of elite middle and long distance athletes.

More studies have shown that gender affects goal- orientation and satisfaction in sports. Mugalla, Wamukoya, Bukhala & Kweyu (2016) investigated effects of gender on goal-orientation and satisfaction among Kenyan volleyball league players on Kenyan volleyball league players. The study sampled 134 players from 12 teams of division 1(58.5) and division 2 (51.5%) of Kenya National Volleyball league. They were both male (n= 62, 46.3%) and female (n=72, 53.7%) players. Simple random sampling was used to obtain players from the two strata of division 1 and division 2 of Kenyan national Volleyball league. Goal-orientation was measured using the Task and Ego orientation Questionnaire. Findings of the study revealed that females were more task-oriented than their male counterparts who are incidentally, ego-oriented. Male and female players portrayed varying goal orientation towards sport, goal orientation affected players towards sports and task oriented players affected satisfaction towards sport. Hence, Task -oriented players were intrinsically motivated while ego–oriented players were extrinsically motivated. Therefore, the present study sought to assess the relationship between behavioural profiles (DISC) and demographic characteristics of elite middle and long distance runners.

2.1.3 Type of Race of Elite Middle and Long Distance Runners

The current study focused on establishing the types of races participated in by middle and long distance athletes. These races include, 800 meters, 1,500 meters, and 3,000 meters, 3,000 meters Steeple Chase, 5,000 meters and 10,000 meters. Generally, there is limited information on middle distance running (Thompson, 2017). However, more scientific literature has documented long distance running (Cunningham, Hunter, Seeley & Feland, 2013).

The study conducted by Miller (2000) and Arana, Chambel, Curral & Tabernero (2009) demonstrated that most marathoners tend to connect (influence profile) well with others. The study used marathoners as its study population while the current study's participants were elite distance runners. It was not indicated as to what study design was used against the descriptive survey research design for the current study. The target population of marathoners was also not specified while the current study targeted a population of six hundred (600) and a sample size of about two hundred

and thirty five (n=235). The current study used the DiSC® Classic instrument for data collection. The study did not also mention the data analysis technique whereas ANOVA was used to test the hypotheses (Run for Your life News Letter, 2016). However, the present study sought to assess the relationship between behavioural profiles (DISC) and demographic characteristics.

The following psychological characteristics were investigated by Kajtna, Vuleta, Pori, Justin & Pori (2012); aggression, anxiety, reaction times, fluid intelligence and concentration. Forty-six (46) goalkeepers (23 more successful, 23 successful) participated in the study. Instruments used for data collection included, Buss-Durkee Aggression questionnaire, Spielberger's Anxiety Inventory (STAIX), the test of Series for measuring fluid intelligence, the test of Attention for measuring concentration and the CRD series for measuring reaction times. One- way Analysis of Variance (ANOVA) was used to analyse data. As a result, less successful goalkeepers had a faster simple reaction time and made fewer mistakes when reacting to simple stimuli. The study concluded that the psychological characteristics that were investigated (reaction times, fluid intelligence, concentration, anxiety and aggression) had an influence on the quality of handball goalkeepers. This study assessed the relationship between behavioural profiles (DISC) and demographic characteristics on elite distance athletes.

Smart (2011) established the relationship between physical characteristics and on-field game behaviours on Rugby Union players. The target population was about 1161 rugby union players. Mixed modelling procedure was used to estimate the relationship between player differences and within player changes. Based on the study, sprint times (10m, 20m, 30m) seemingly ranged from small to moderate correlations (range r= -0.012 to -0.32) with game behaviours. These correlations were associated with high intensity running. The results also showed that repeated ability to sprint and percentage body fat had small to moderate correlations with activity (range r= -0.17 to -0.38). Based on these results, it was concluded that optimal levels of speed, repeated sprint ability and body composition were important in the performance of skills within a given competition.

However, the differences between both studies include, target population and data collection instruments. Hence, the need for the current study that assessed the relationship between behavioural profiles and demographic characteristics of elite distance runners.

A study by Coumbe – Lilley, Hamstra – Wright & Wedner (2015) focused on the psychological skills profile of sub – elite marathon competitors. The study targeted healthy adults (n=125) who participated in an 18 – week marathon training program. Further, it was guided by the Cohort survey research design. The independent variables were three different phases of training (pre-training, training and post- training. The dependent variables were; “basic – attitude, motivation, goals,

Commitment, people skills preparatory self - talk, mental imagery, anxiety, emotions and concentration” Results of the study confirmed that attitude and commitment to goals became stronger greatly from week 6-12. On the other hand, motivation, self –

talk and imagery were consisitent over a period of time. The study concluded that psychological skills enabled marathners complete the race. Therefore, the present study sought to assess the relationship between behavioral profiles and demographic characteristic of the type of race among elite middle and long distance runners.

2.1.4 Marital Status of Elite Middle and Long Distance Athletes

The current study sought to determine the marital status of middle and long distance Kenyan elite athletes. A study by Smith (2019) concluded that marital status significantly affected the performance of distance runners. It was concluded that the performance of athletes who were single and distance running significantly correlated (Smith, 2019). Hence, the need for the current study.

Marital status has also been used to determine participation levels of physical activity (PA). Research among older adults described the influence of marital status on levels and types of activity. The study targeted 3075 well-functioning healthy and black men aged 70-79 years old. The participants were exposed to a self-reporting instrument for marital status (married; not married). Leisure-time questionnaire with classifications of PA levels as lower, high and active was used. Logistic regression was used to determine if marital status was an important determinant of PA participation. Further, regression models were adjusted for body mass index (BMI) and chronic disease conditions. Findings revealed that married men scored higher median levels of exercise participation ($P=0.008$). Married women also reported higher levels of total ($P<0.0001$) exercise activity.

Further, they reported higher levels of non-exercise activity ($P< 0.0001$). Married women had a tendency towards a higher exercise participation ($P<0.05$). The impression gathered from the findings was that spousal pairs, compared to men in the low active group and high active men were almost three times as likely to have a similarly active spouse. The study concludes that marital status is an important determinant for physical activity participation among older adults (Pettee, Brach, Kriska, Boudneau, Richardson, Colbert, Satterfield, Visser, Harris, Ayonayo & Newman, 2006).

The study by Pettee et al, (2006) focused on older adults (n=3075) used self-reporting (married, not married) and logistic regression for data analysis. However, the current study targeted 600 elite middle and long -distance athletes but used an estimated sample of 235. In addition, this research had behavioural profiles (DISC) as dependent variables and more independent variables (age, gender, type of race, marital status) than the Pettee *et. al*, (2006) one. The two studies also differ in that the current one used the Disc® Classic instrument for data collection and a paired sample t - test for testing the hypotheses. Findings of this study showed that more single athletes (n= 165; 71.1%) than married (n=67; 28.9%) ones participated in this study. Hence, the need for the present study to document data about behavioural profiles (DISC) and gender.

Marriage is a common social relationship that is believed to influence health outcomes and positive health behaviours. A review article by Porch, Bell, Bowie, Usher, Kelly, LaVeist & Thorpe (2016) examined the role of marital status (married and not married) in physical activity (PA) among African and White men. Data was obtained from the National Health and Examination Survey (NHANES) over a period ranging from 1999-2006. Physical activity (PA) was determined by the number of minutes per week. Participants responded to activities such as household/ yard work, moderate and vigorous activity or transport (bicycling and walking) over the past 30 days. The target population comprised 7131 African American (29%) and White (71%) men aged 18 years and older. Logistic regression was used to estimate all the models. Findings of the study revealed that the interaction of race and marital status was statistically significant ($p<.001$).

Based on the foregoing revelation, the study provides evidence that marriage is associated with lower levels of PA for African men compared to White men. This study suggests that understanding the responsibilities associated with marriage may contribute to differences in health behaviours. This could help develop strategies that would otherwise increase PA levels among African American men (Griffith, Gunter, and Allen 2011; Griffith & Thorpe, 2016).

In comparison with the study by Porch *et al*, (2016), the current study conceptualized an interplay between the DISC behavioural profiles and demographic characteristics (marital status) of elite middle and long-distance distance athletes. Second, this study captured data on demographics and the DISC using the DiSC® Classic questionnaire over a Five- Point Likert scale. Data was analysed using a paired sample t –Test. Overall, the results from this study revealed that more (71.1%) single than married (28.9%) distance athletes participated in the study. Hence, the need for further research in the current study.

Another study by Sobal & Hanson (2010) examined differences in marital status and physical activity (PA) in the United States of America (US). The study targeted 4479 men and 4320 women between the periods ranging 1999-2002). Cross-sectional data from the National Health and Nutrition Examination Surveys (NHANNES). Findings of the study revealed that never married and widowed men and women expended less energy on overall PA rather than those who were married. In addition, unmarried men and women were more involved in leisure- time activities like running, jogging, lifting weighting, calisthenics basketball and roller blading. Further, married men and women were more involved in gardening.

Overall, marital differences in the amount of PA and type of leisure-time activities may be due to both time- demands of marital status roles and the norms about types of PA appropriate to marital differences. In conclusion, marital status seems to be an important predictor of the amount of PA and leisure-time activities. On the contrary, the current study was guided by a descriptive survey research design focused on behavioural profiles (DISC), more (age, gender, type of race, marital status) variables of distance athletes and used a smaller target population (600; sample 235). The latter study was a review research study using secondary data while this study was guided by the descriptive research design. It is also prudent to mention that the review study did not specify the data collection and data analysis tools. However, the current study used the Disc® Classic instrument and a paired sample t – test for data collection and analysis respectively.

Cobb, Godino, Selvin, Kucharska-newton, Coresh & Koton, (2015) conducted a 6-year baseline (1987-89) with a follow-up (1993-95) targeting 3,261 spousal pairs. The purpose of the baseline survey was to examine spousal influence on physical activity (PA) among middle-aged and older adults. Linear regression was used to examine the association between change in individual's sport/ exercise and leisure physical activity (PA) indices ranging from 1(low) to 5 (high) and change in his/her spouses indices. Logistic regression assessed the association between individual and spousal changes in meeting PA recommendations. Findings of the study revealed that for every standard deviation, there was an increase in their wives' sport/exercise index and men exercise index increased by 0.09 (95% confidence interval; 0.05, 0.12) standard deviation. On the other hand, for every standard deviation increase in their wives' leisure index, men's leisure index increased by 0.08 standard deviation. In conclusion, changes in an individual's physical activity were positively associated with changes in his or her spouse's physical activity. Hence, the need for this study that involved married and single elite middle and long distance Kenyan runners.

Life changing events such as marriage, pregnancy, divorce and interpersonal loss are likely to influence participation in physical activity (PA). A study by Elina (2010) investigated the effects of life events on changes in physical activity (PA). The focus of the research was on the: transition to college or university; change in employment status; marital transitions and changes in relationships; pregnancy and the postpartum period; and cancer. The study was a review research that considered 48 articles that met the inclusion criteria. The inclusion criteria comprised of one major life change, before and after life event. Findings of the study revealed that transition to college or university, mass urban disaster and cancer seemed to have decreased PA levels in both men and women. In addition, beginning work, changing work conditions, changing from being single to cohabiting, getting married, pregnancy, postpartum period and interpersonal loss appeared to decrease PA levels among women.

Further, returning to study, divorce and long-term widowhood increased PA levels in women. Overall, the study showed that experiencing multiple life events during a certain period seemed to decrease PA participation in both men and women. Inclusion, major life event changes seem to affect PA Behaviour. Finally, the researcher suggested that people experiencing different life events such as marital status could be a target group for physical activity promotion. However, the current study focused on assessing the relationship between behavioural profiles (DISC) and demographic (marital status) characteristics of elite middle and long distance runners.

Kothouris (2005) conducted a study on marital status against levels of participation. The respondents either participated infrequently, moderately, or frequently. The study established a non-significant relationship (p<n’s) between participation levels and participants’ marital status. Further, there was a limited tendency for the single individuals to participate more ‘frequently’ in skiing than the married ones. However, the current study targeted elite middle and long-distance Kenyan athletes, used the DiSC® Classic Athlete behavioural assessments for data collection and a t - test for data analysis. While the previous study profiled levels of participation, this study profiled behaviour tendencies (DISC).

In the recent past, there has been a trend where married athletes have posted remarkable results in either world or Olympic championships. Carlson (2018) has documented a few famous running couples. In 2008, Ryan and Sara Hall are believed to have love for running. Ryan currently holds the US record in half marathon. Sarah features in middle distance and won the 2012 USA cross country championships. Tina Muir and Steve Picucci are another couple that competes professionally. For instance, Tina represented Great Britain and North Ireland in World Championships in 2017 and hopes to compete in 2020 Olympics while Steve is an elite coach for men and women cross country.

Further, Brianne Theisen- Eaton (wife) and Ashton Eaton are also an elite couple. Brianne holds a bronze medal heptathlon and indoor pentathlon in 2016 Olympics while Aston (husband) holds world records in both decathlon and indoor heptathlon events. Aston also won gold medals in decathlon at the London Olympics in 2012 the Rio Olympics in 2016. Another running couple (Paul Lonyangata and Purity Rionoriga) from Kenya won the Paris marathon in 2017 (https:// www.bbc.com/news/av/world-africa). It seems marriage should not be a hindrance to competitive running. This study suggests that married athletes should be encouraged to participate in elite middle and long distance competitively. Hence, the current study which conceptualized an interplay of behavioural profiles (DISC) and demographic (marital status) characteristics of elite distance runners.

2.1.5 Summary of Literature Review

Overall, studies have revealed that there is limited documented literature on behavioural profiles and demographic characteristics in distance running contexts. Some isolated studies that have used the concept of behavioural profiles have not targeted elite middle and long distance runners and demographic characteristics. Sports training of planned physical activities (PA) are processes designed to improve physical fitness and abilities or skills for performance in sports competitions.

Based on the foregoing, the review of literature has highlighted the concept of DISC profiling as having been applied on appropriate age populations aged 14 years, 18 years and above. Triathletes were also exposed to profiling based on motivational commitment, loyalty levels as independent variables and spending behaviour and motives as dependent variables. Anthropometric profiling has been conducted on male and female handball players using the sum of eight skin folds, body mass, stature, girths, breadths, age, and playing positions. In marathon athletes and sub - elite marathoners, psychological profiling of such characteristics as aggression, reaction times, fluid intelligence and concentration were used to collect data. Profiling was done on differences between men and women based on the DISC scales, to married couples and marathoners. DISC profiling was also used by companies that dealt with sales. The literature also presents behaviour profiling as used by employers when hiring new employees as well as motivating and retaining them. Overall, research evidence has revealed that age, gender, type of race and marital status are significant demographic characteristics or variables in determining leisure-time physical activity (LTPA) as well as the amount of physical activity (PA) levels. Hence, the need for the present study to use age, gender, type of race and marital status as independent variables.

CHAPTER THREE: METHODOLOGY

3.1 Research Design

This study adopted a descriptive survey research design. Descriptive survey research design allows researchers to gather information, summarize, present data and interpret it for the purpose of clarification (Crestell, 2003). Descriptive research studies are those which are concerned with describing the characteristics of a particular individual or groups (Kothari & Garg, 2014). It also provides an opportunity to define new terms and clarify concepts (Haverila, 2011; Fluery and Fernet, 2012). In the current study, the descriptive research design was appropriate for gathering information on the relationship between behavioural profiles (Dominance, Influence, Steadiness, and Conscientiousness) and demographic characteristics (age, gender, type of race, marital status).

3.2 Variables of the Study

This study was guided by independent variables comprising of demographic characteristics of elite middle and long distance runners. These include age, gender, type of race and marital status. The independent variables were captured in form of self-reports by the study participants. These are dominance, influence, steadiness and compliance (DISC). The dependent variables were able to interact with the independent variables which consisted of behavioural profiles of Kenyan elite middle and long-distance runners. The dependent variables were measured using a five-point Likert scale that consisted of statements or adjectives describing the characteristics of the DISC behavioural profiles.

3.3 Study Area

This study was carried out in Nandi County, one of the areas in the Rift Valley region, with a majority of high altitude training centres in Kenya. Nandi County is located midway between Kisumu and Eldoret. Nandi County is situated along the Nandi escarpment, at the bottom of the Rift valley (see appendix III). Many other runners train at other high altitude centres such as Eldoret (2,116 metres above sea level) and Iten (2,005 metres above sea level), but the climate at Nandi County allows distance runners to congregate in the area for training due to its medium-altitude training (1,891 metres above sea level). At medium- altitude, athletes experience reduced recovery times, increased Vo_2 max, increased mitochondria produced in the body and faster breakdown of lactic acid (in the bloodstream and liver), thereby delaying the onset of fatigue (Singleton, 1993; SARAM, 2014).

3.4 Target Population

According to Singleton & Strait (2010) as well as Thomas, Nelson & Silverman (2015), a target population refers to all members of a set of people, events or objects to which researchers generalize the results of their research. The target population for the current study included elite middle and long distance athletes who train and participate in middle and long distance races. In this study, the races included 800 meters (men and women), 1,500 meters (men women), 3,000 meters (men and women), 3000 meters steeple chase (men and women), 5,000 meters (men and women) and 10,000 meters (men and women). High altitude training centres in Nandi County attract approximately 600 athletes who train at the area. From this population, a sample for the current study was drawn.

3.4.1 Inclusion Criteria

This study included participants who had been enrolled for elite middle and long distance running and training at Nandi County. This information was obtained from their respective coaches. The study participants were also expected to have been consistent for training schedules designed by their coaches. The coaches defined consistency as a period not less than eight weeks. Finally, this study included participants whose age categories ranged as follows; 21 and below, 22-30, 31-40 and above 40. Their ages were confirmed by their coaches based on their birth certificates and national identity cards respectively.

3.4.2 Exclusion Criteria

The current study did not target athletes who were not training for elite performance in the middle and long distance races (800m to 10,000m). Again, those distance runners who were not regular for training, were not allowed to participate in this study. According to the coaches, irregularity in attendance was defined by a period less than eight weeks. This information was confirmed by their respective coaches as per the training schedules.

3.5 Sampling Procedures and Sample size

Sampling procedure is the process of selecting participants that constitute a sample for a given study (Kothari & Garg, 2014). Stratified random sampling technique was used to place athletes into their respective races. Stratified random sampling ensured that subgroups (strata) of a given population were adequately represented within the whole sample of a research study. The sample size was obtained from the targeted population of approximately 600 (six hundred) elite middle and long- distance Kenyan runners. A sample size is a section of a population that is selected for examination, analyses and used to make references to the population from which it is obtained (Cochran, 1977; Kothari, 2010***).*** The athletes had been training at the high altitude training grounds. This information was provided by their respective coaches. The races for this study included 800m, 1,500m, 3,000m, 3000m steeple chase, 5,00m and 10,000m. The study population captured both men and women distance runners. This study adopted Cochran's modified formula for smaller populations to obtain the sample of 235 participants. The sample size calculator for smaller populations is shown below:

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Further, simple random sampling was then used to get athletes who participated in this study. Hence, 800m n=43, 1,500m n=34, 3000m n=33, 3,000m Steeple Chase n=23, 5,000m n=45 and 10,000m n=59. This gave a total of 235 study participants. However, the return rate (232) indicated that 20 questionnaires had been obtained from 3,000 steeple chase runners while 43 distance runners for 5,000m responded to the questionnaire. Random sampling guarantees a representative sample and the probability is higher for this procedure than any other method (Gay and Airasian, 1999). It supports stratified random sampling as an efficient choice because the means are likely to be closer to the mean of the overall population (Robinson, 1993).

3.6 Research Instrument

The questionnaire for this study was divided into two sections; section A captured demographic characteristics of athletes. These included age, gender, type of race and marital status. Section B consisted of the validated DiSC® Classic instrument as the main instrument for data collection. The instrument contained statements or adjectives that were distributed on a 5-point Likert psychometric type scales (Naomi, Heiberger

& Richard, 2011) ranging from strongly disagree, disagree, undecided, agree, and strongly agree (Appendix I). The statements or phrases described behavioural profiles (DISC).

The dominance behavioural profile consisted of statements which captured such adjectives as direct, decisive, goal-oriented and authoritative behaviour. The phrases or statements that described the Influence behavioural profile exhibited inspiring, expressive, persuasive and sociable behaviours. Those statements that described the Steadiness behavioural style were characterized by impatience, unstructured, inconsistence and energetic. Lastly, the statements that described the conscientious (compliance) behavioural profiles featured inquisitiveness, preparedness, systematic or orderliness and reserved. The athletes responded to a phrase or statement that best described the behaviour.

Therefore, the DiSC® Classic instrument measured four dimensions of athletes' behaviour profiles namely; Dominance, Steadiness, Influence and Compliance behavioural categories. Dominance behavioural profile contained 15 statements while Influence (Interactive), Steadiness and Compliance (Conscientiousness) profiles contained 14 statements each. The statements described characteristics of each of the behaviour profiles (Appendix 11: Athletes Questionnaire).

3.7 Recruitment and Training of Research Assistants

The researcher recruited two research assistants from the department of Youth affairs and Sports, Nandi County. They were holders of Bachelor of Science in sports science and Diploma in sports administration respectively. The research assistants were trained for two days to familiarize with the research instrument. The training was conducted prior to the data collection exercise. The training featured the recommended way of administering and interpreting data. During training, the researcher explained explicitly the statements or adjectives that described the behavioural profiles (DISC) on the 5 - Point Likert scale. Ultimately, the research assistants were involved in the administration of the questionnaire during pre -testing of the instrument to athletes who were not included in the sample for this study. This was a confirmation that the research assistants gained more experience and correct procedures were adhered to.

3.8 Pre – testing of the Study Instrument

Pre - testing is the process of measuring the effectiveness of the instrument that was developed for the major study. It is a phase in research that is characterised by ensuring that questions or statements in the questionnaire serve the intended purpose, and are understood by potential participants in the research (Hilton, 2017). A pre – test detects misunderstandings, ambiguities or any other challenges participants may experience when responding to the questionnaire (Perneger, Courvoissier, Hudelson & Gayet, 2015). It is significant in measuring the accuracy of the data collection instrument. Further, a pre - test is considered an essential step of research in all social Sciences (Al- Hemayari & Al- Sarmi, 2016). It is prudent to note that pre-testing improves the quality of data (Colins, 2003; Oslo, 2010).

A sample of 30 athletes was drawn from the population that did not participate in the major study. According to this study, 30 participants represented approximately 5% of the total registered population of 600 middle and long distance athletes, who were training at high altitude training centres of Nandi County. This confirms the recommended percentage of a pre – test sample that should range between 1% and 10% of the target population (Mugenda & Magenda, 2003).

After pre – testing, the researcher convened a meeting with the participants for a debrief. The participants gave feedback about the instructions in each section and the statements in the questionnaire. The supervisors as well as experts from the department of Physical Education, Exercise Science and Sport Science of Kenyatta University used the feedback to cross – check substantive aspects of the instrument.

3.9 Validity and Reliability of Research Instrument

Validity is the degree to which a test measures what it is supposed to measure.Validation of the instrument for this study was established so that the measurement tool was consistent with the study variables. Construct validity items were assessed by experts from the department of physical education and sport science as well as the supervisors. Their critique was done and suggestions made to ensure clarity and adequacy of the instrument. All these were incorporated in the final copy of the instrument for data collection. Based on the foregoing, the content validity was achieved.

Reliability is concerned with the degree to which an assessment instrument that gives consistent and dependable results, each time it is used in the same setting with the same type of subjects (Gay, 1992; Downing, 2004; Babbie & Mouton, 2009). This study adopted the DiSC® Classic that was developed by Walter Clark in 1940 (https://www.discprofile.com>history). According to the Validation Report (2008), the most recent validation of the stability of the DiSC® Classic Instrument was established in 1996. The validation process calculated the sub- scales of the instrument separately. It established the scores as follows : D= .95, i= .87, S= .88 and C= .85. These scores were rated as good – excellent. Data from the validation process revealed that all the scores indicated that correlation coefficients were above .70 respectively across the

DISC scales. Correlation coefficients of .70 and above are considered acceptable for any given study (Validation Report, 2008; Simoes et. al, 2017).

Tavakol & Derrick (2011) revealed that researchers should measure alpha each time a test is administered rather than relying on published Cronbach alpha estimates. After pre- testing of the instrument (DiSC® Classic), the sub - scale of dominance with 15 statements or items obtained reliability coefficient score of α=.85. This score is supported by Warrens (2014) who stated that test items of fifteen (15) or more often exhibit high Cronbach's alpha correlation coefficient. In addition, the Validation Report (2008) rated this score as good to excellent. Further, the Influence subscale (α=.77), Steadiness subscale (α=.78) and Conscientiousness subscale (α=. 78) were all considered acceptable and reliable for this study. In conclusion, all the four sub – scales (DISC) exhibited perfect reliability, as scores varied between ≥ 0.7 and ≤ 0.8. This is supported by Al – Hemyari & Al - Sarmi, (2016) who stated that Cronbach' alpha correlation coefficient index that is above 0.7 is considered acceptable for research. Therefore, the reliability of the questionnaire for this study was acceptable and reliable.

3.10 Data Collection

The researcher with the help of the research assistants delivered the questionnaires to the athletes at the training venues after prior arrangements with the managers of the training centers and the coaches. The participants put a tick against the statements that best represented their views. The research assistants ensured that questionnaires were filled and returned upon completion, on the same day. This ensured a high return rate of 98%. The participants were made to understand the importance of the study after filling the questionnaires.

3.11 Data Analysis and Presentation

The Statistical Package for Social Sciences (SPSS- Version 22) was used for data analysis. Descriptive statistics were used to analyse descriptive data which generated frequencies, percentages, mean values and standard deviations. The t – test was used to examine hypotheses that focused on behavioural profiles of the athletes in relation to gender and marital status. One-way Analysis of Variance (ANOVA) examined the hypotheses relating to behavioural profiles of the athletes across their age categories and their type of races. It created room for a difference between two or more sample means to be analysed (Kenton, 2017; Singh, 2018). Data was presented in figures and tables. Ultimately, relevant analysis and discussions were made as per the study objectives and hypotheses.

3.12 Logistical and Ethical Considerations

Permission was sought from Kenyatta University Graduate School, National Council for Science, Technology and Innovation (NACOSTI), Athletics Kenya, the athletes and the coaches of elite middle and distance runners' prior to data collection process. The researcher explained the nature and purpose of the study to the study participants before seeking their consent. The researcher also assured the participants of confidentiality of information as their identity on the questionnaire was made anonymous. This was reflected in the signing of the consent forms (Appendix I) before actual data collection. The researcher promised to share findings of this study with the study participants, managers and coaches of the training centers. After data collection, brief talk was given to the athletes, coaches and managers on the relevance of sports psychology in athletics training and coaching.

CHAPTER FOUR: FINDINGS OF THE STUDY

4.1 The Study Objectives and Hypotheses

This study was guided by the following objectives:

1(a) To establish the demographic characteristics of Kenyan elite middle and long distance runners.

(b) To determine behavioural profiles (DISC) of Kenyan elite distance runners across their age categories.

(c) To ascertain behavioural profiles (DISC) of Kenyan elite distance runners across gender.

(d) To establish the behavioural profiles (DISC) of Kenyan elite m distance runners across the type of race.

(e) To determine behavioural profiles of Kenyan elite distance runners across their marital status.

2. (a) Objective one was guided by the following research question :

What are the demographic characteristics of Kenyan elite middle and long distance runners in relation to their demographic characteristics?

(b) Objective two was guided by question two and hypothesis H_{01} as follows;

(i) Are there significant differences in behavioural profiles of Kenyan elite distance runners across their age categories?

(ii) There would be no significant difference in behavioural profiles (DISC) of Kenyan elite distance runners across their age categories.

(c) Objective three was guided by question three and hypothesis H_{02} as follows;

(i) Are there significant differences in behavioural profiles (DISC) of male and female Kenyan elite distance runners?

(ii) There would be no significant difference in behavioural profiles (DISC) of male and female Kenyan elite distance runners.

(d) Objective four was guided by question four and hypothesis H_{03} as follows;

(i) Are there significant differences in behavioural profiles (DISC) of Kenyan elite distance runners in relation to their varying events?

(ii) There would be no significant differences in behavioural profiles (DISC) of Kenyan elite distance runners in relation to their varying events.

(e) Objective five was guided by question five and hypothesis H_{04} as follows;

(i) Are there significant differences in behavioural profiles (DISC) of Kenyan elite distance runners across their marital status?

(ii) There would be no significant difference in behavioural profiles (DISC) of Kenyan elite distance runners across their marital status.

4.2 Demographic Characteristics of Elite Middle and Long Distance Runners

This study was characterized by a descriptive survey research design. The present study was conducted at the training venues within Kapsabet town and high-altitude training camps situated within Nandi County. This study had used a sample of approximately 235 out of a target population of 600 participants. However, 232 (98.7%) participants responded to the questionnaire.

4.2.1 Distribution of Elite Middle and Long Distance Runners by Age

The ages of the study participants were placed into four categories namely; 21 years and below, 22-30 years, 31-40 years and above 40 years. These age categories were supported by previous researchers whose studies included age as a varible (Smart, 2011; Kruger & Saayman, 2014; Scullard and Baum, 2015). The results are presented in figure 4.1.

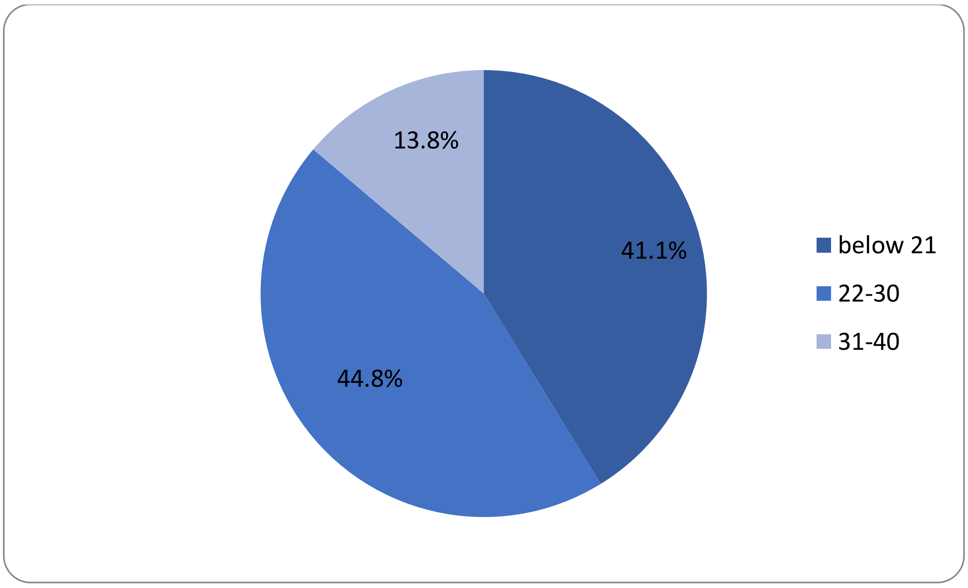

Figure 4.1 Distribution of Elite Middle and Long Distance Runners by Age Categories

From the findings in figure 4.1, 96(41.4%) belonged to the age bracket of 21 years and below, 104(44.8%) indicated they were aged between 22-30 years, 32(13.8 %) were between 31-40 years while no athlete indicated they were aged 40 years and above.

4.2.2 Distribution of Elite Middle and Long Distance Runners Participants by Gender

The study also sought to establish distribution of study participants on the basis of gender. The results are presented in figure 4.2.

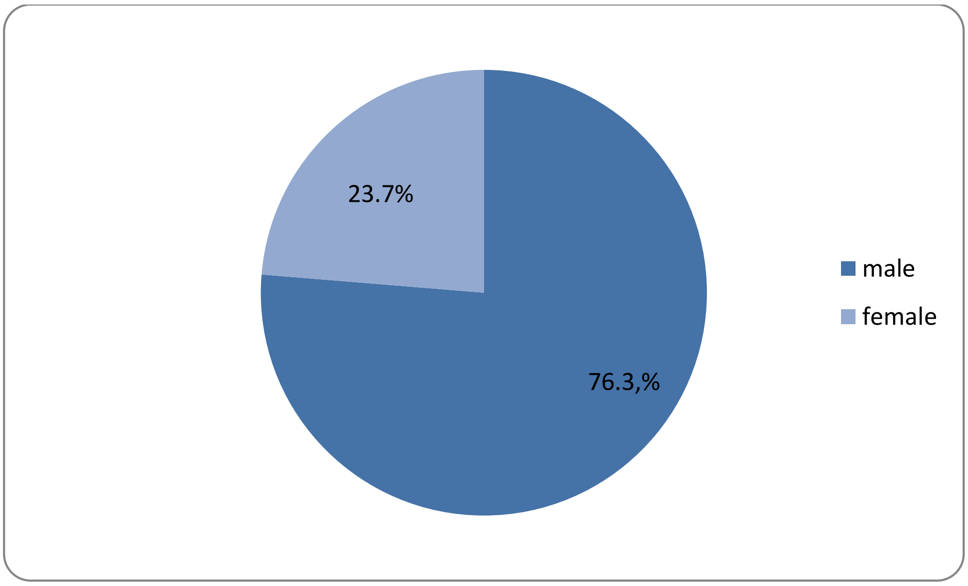

Figure 4.2 Distribution of Elite Middle and Long- Distance Runners by Gender

It is evident from figure 4.2 that a majority177 (76.3%) of the participants were male while 55(23.7%) were female.

4.2.3 Distribution of Elite Middle and Long Distance Runners by Type of Race

Middle and long-distance races included 800 meters, 1,500 meters, 3,000 meters, 3,000 meters Steeple chase, 5,000 meters and 10,000 meters. The results are presented in figure 4. 3.

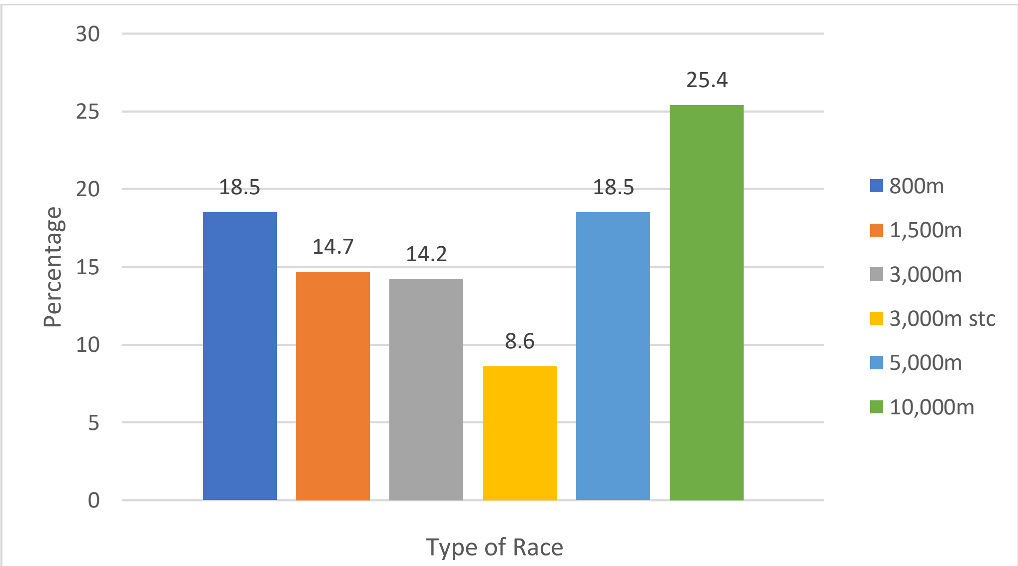

Figure 4.3 Distribution of Elite Middle and Long -Distance Runners by Type of Race

From the study findings in figure 4.3, 43(18.5%) participants responded to 800 meters, 1,500 meters were 34 (14.7%) athletes, 3,000 meters had 33(14,2%), 3,000 meters Steeple Chase were 20 (8.6%) while 43(18.5%) and 59 (25.4%) were training for 5,000 meters and 10,000 meters respectively.

4.2.4 Distribution of Elite Middle and Long Distance Runners by Marital Status

The study sought to establish marital status of participants in middle and long distance races. The results are presented in figure 4.4.

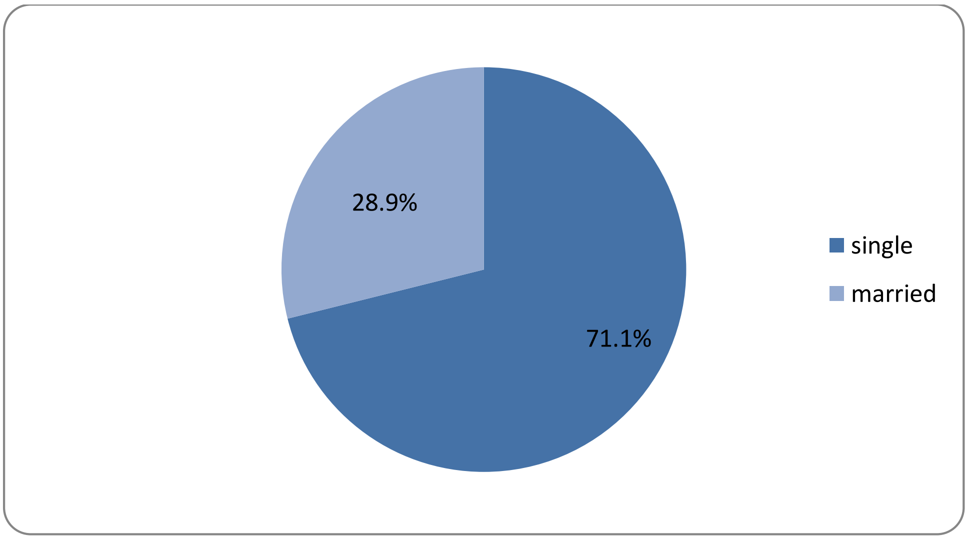

Figure 4.2 Distribution of Elite Middle and Long Distance Runners by Marital Status.

Findings in figure 4.4 have indicated that study participants who were married accounted for 28.9% while 71.1% were single.

4.3 Behavioural Profiles of Elite Middle and Long Distance Runners

The current study sought to establish prevalent behavioural characteristics in each behavioural profile (DISC) of Kenyan elite distance runners. The questionnaire (DiSC® Classic) consisted of statements distributed into four behavioural profiles namely; dominance, influence, steadiness and compliance (conscientiousness). The statements described characteristics of each of the behavioural profiles (DISC). The study participants were expected to respond to the statements that best suited for their perception. The results were expressed in means and standard deviations.

4.3.1 Dominance Behavioural Profile of Elite Middle and Long Distance Runners

The current study established means and standard deviations of behavioural profiles of Kenyan elite distance runners. The Kenyan elite middle and long distance runners completed the questionnaire containing fifteen (15) behavioural characteristics that described the dominant behavioural profile. The results are presented in table 4.5.

Table 4. 1 Dominance Behaviour Profile of Elite Middle and Long Distance Runners

Statements depicting Dominance Behavioural Profile	**Mean**	Std **Dev.**
I need details of my training sessions	4.43	0.90
I do things in an organized manner	4.33	0.80
I usually set goals in my life	4.31	0.94
I am time conscious	4.26	0.90
I prefer getting support for my ideas	4.25	0.80
I am quick and to the point	4.18	0.90
I prefer reading details at my free time	4.16	0.91
I prefer relevant information	4.09	1.04
I am result oriented	4.04	2.80
I prefer rewards for my accomplishments	4.01	2.80
I prefer leading others during training	3.90	1.09
I am comfortable with challenges	3.62	1.32
I do make decisions very fast	3.43	1.34
I talk most of the time	3.02	1.33
I am sensitive to my colleagues	1.16	0.88

The participants responded to the statements describing the dominance behavioural profile as shown in Table 4.1. The larger mean scores were shown in the behavioural characteristics where participants needed details of their training sessions (M=4.43, SD=0.90), did things in an organized manner (M=4.33, SD=0.80) and usually set goals in their lives (M=4.31, SD= 0.94). The interpretation of these mean scores is that the study participants were more inclined to these behavioural characteristics. The findings suggest that these behavioural characteristics were more prevalent under the dominance behavioural category.

However, the smallest mean scores were evident in the behavioural characteristics where participants indicated that they made decisions very fast (M=3.43, SD=1.34), talked most of the time (M=3.04, SD=1.33) and were sensitive to their colleagues (M=1.16, SD=0.88). The implication of these findings is that the participants were less inclined to the three behavioural characteristics. This study suggests that the behavioural characteristics were less prevalent under the dominance behavioural profile.

4.3.2 Influence Behavioral Profile of Elite Middle and Long Distance Runners

The elite distance runners completed the questionnaire that consisted of fourteen (14) behavioural characteristics of the influence behavioural profile. The statements described the features of the influence behavioural profile as inspiring, expressive, persuasive and sociable (figure 1.1). The results are presented in table 4.2.

Table 4.2 Influence Behavioural Profile of Elite Middle and Long Distance Runners

Statements depicting Influence Behavioural Profile	Mean	Std Dev
I talk to others about training	4.30	3.50
I prefer listening to successful stories	4.28	1.09
I ask for support in my training	4.17	1.01
I do engage other people to achieve goals	4.12	1.03
I usually adapt to new approaches	4.00	1.04
I help others in making decisions	3.98	1.04
I prefer jokes and friendly atmosphere	3.81	1.18
I usually persuade others in my team	3.83	1.04
I am usually in a hurry for training	3.80	1.33
I make friends quite easily	3.80	1.18
I prefer a friendly chat before training	3.66	1.24
I have a passion to please people	3.60	1.33
I do seek freedom from routine	3.38	1.26
I am persuaded when under pressure	3.27	1.32

Table 4.2 shows the mean values and standard deviations of the study participants. Largest mean values were evident in the behavioural characteristics where participants talked to others during training (M=4.30, SD=1.30), preferred listening to successful stories (M=4.28, SD=1.09) and asked for support in their training (M=4.17, SD=1.01). The interpretation of these findings is that the study participants were more inclined to these behavioural characteristics, implying that they were more prevalent under the influence behavioural category.

However, behavioural characteristics under the influence category that scored smallest mean values were observed where study participants indicated that they had passion to please people (M=3.60, SD=1.33), sought freedom from routine (M=3.38, SD=1.26) and were persuaded when under pressure (M=3.27, SD=1.32). The implication of these findings is that the participants were less inclined to the three behavioural characteristics suggesting that the behavioural characteristics were less prevalent under the influence behavioural profile.

4.3.3 Steadiness Behavioural Profile of Elite Middle and Long Distance Runners

This study exposed the Kenyan elite distance runners to a questionnaire that consisted of fourteen (14) statements, describing characteristics of the steadiness behavioural profile. The statements in the questionnaire depicted features of the study participants who may exhibit the steadiness behavioural profile. The characteristics of the steadiness behavioural profile are; impatience, unstructured, inconsistence and energetic. The results are presented in table 4.3.

Table 4. 3 Steadiness Behavioural Profile of Elite Middle and Long Distance Runners

Statements depicting Steadiness Behavioural Profile	Mean	Std Dev.
I prefer a friendly training	4.31	0.94
I am optimistic	4.29	1.06
I am a keen listener to my coach	4.29	0.97
I balance studies, training and social	4.25	0.98
I prefer attention from my coach	4.18	1.03
I usually prefer recognition from my coach	4.07	0.97
I prefer a slower and orderly coach	4.05	1.56
I seek opinion from fellow athletes	4.05	1.04
I prefer communicating with my coach	4.01	1.03
I am usually patient with my colleagues	4.00	1.11
I prefer compliments when training	3.70	1.21
I hate arguments and conflicts	3.67	1.48
I am oversensitive to criticisms	3.38	1.32
I do not like listening to facts	2.31	1.35

Table 4.3 shows mean values and standard deviations of the study participants under the steadiness behavioural profile. The largest mean values were evident in behavioural characteristics where participants preferred a friendly training environment (M=4.31, SD=0.90), were optimistic of their success (4.29, SD=1.06), and were keen listeners to their coaches (M=4.29, SD=0.97). The interpretation of these findings is that the study participants were more inclined to these behavioural characteristics. Hence, they were more prevalent under the steadiness behavioural category.

On the contrary, smallest mean values were scored in the behavioural characteristics where participants indicated that they hated arguments and conflicts (M=3.67, SD=1.06), were over sensitive to criticisms (3.38, SD=1.32) and did not like listening to facts (2.31, SD=1.35). The implication of these findings is that the participants were less inclined to the three behavioural characteristics. Again, the present study suggests that the behavioural characteristics were less prevalent under the steadiness behavioural category.

4.3.4 Compliance Behavioural Profile of Elite Middle and Long Distance Runners

The Kenyan elite middle and long distance runners completed a 5-Point Likert scale that consisted of fourteen (14) statements depicting characteristics of the compliance behavioural profile. The compliance or conscientiousness behavioural profile is characterized by inquisitiveness, preparedness, order and composure. The results are presented in table 4.4.

Table 4. 4 Compliance Behavioural Profile of Elite Middle and Long Distance Runners

Statements depicting Compliance Behavioural Profile	Mean	Std Dev.
I am usually punctual for training	4.37	0.88
I follow rules set by the coach	4.34	0.79
I set goals for my training	4.34	0.90
I respect people who honour promises	4.33	0.82
I pay attention to details	4.28	0.90
I am mentored by my coach	4.26	0.89
I am usually organized	4.26	0.91
I expect to be acknowledged	4.12	0.96
I do things in a perfect manner	4.06	1.01
I take time before making decisions	4.03	1.14
I work with guidelines and timelines	3.89	1.04
I prefer opportunity to give instructions	3.89	1.04
I am different from my colleagues	3.05	1.46
I prefer training alone	2.41	1.32

Table 4.4 shows the mean values and standard deviations scored by the study participants under the compliance or conscientiousness behavioural category. Largest mean values were noted where participants were usually punctual for training (M=4.37, SD=0.88), followed rules set by their coaches (M=4.34, SD=0.79) and set goals for training (M=4.34, SD=0.90). These findings imply that the study participants were more inclined to these behavioural characteristics. Hence, they were more prevalent under the compliance behavioural profile.

However, the findings of this study revealed smallest mean values under the compliance category. The study participants preferred opportunities to give suggestions as well as worked with guidelines and timelines (M=3.89, SD=1.04), were different from their colleagues (m=3.05, SD=1.46) and preferred training alone (M=2.42, SD=1.32). The implication of these findings is that the participants were less inclined to the three behavioural characteristics. This study suggests that the behavioural characteristics were less prevalent under the compliance behavioural profile.

In conclusion, from the foregoing, the mean values of the participants were generally high, average and low. This study suggests that middle and long distance runners have tendencies in the four – styled DISC. Table 4.5 shows rankings of the behavioural profiles (DISC) based on the mean values.

Table 4. 5 Ranking of Behavioural Profiles (DISC) as Per Highest Mean Values

Profile	**Mean Value**	**Std Dev.**
Dominance	4.43	0.90
Compliance	4.37	0.88
Steadiness	4.31	0.94
Influence	4.30	3.50

Table 4.5 shows rankings of mean values based on the most prevalent behavioural characteristics. Findings have revealed that the dominance behavioural profile scored the largest (M=4.43, SD=0.90) mean value, followed by compliance or conscientiousness (M=4.37, SD=0.88), Steadiness (M=4.31, SD=0.94) and lastly, the influence (M=4.30, SD=3.50) behavioural profiles. Therefore, the dominant behavioural profile among the study participants was the dominance category. This study suggests that middle and long distance runners prefer doing things in an organized manner, settting goals for their training sessions and provision of details of training.

4.4. Relationship Between Age and Behavioural Profiles of Elite Middle and Long Distance Runners.

This study hypothesized that there would be no significant difference in behavioural profiles (DISC) of Kenyan elite middle and long distance runners across their age categories. One – Way Analysis of Variance (ANOVA) was computed to establish the significant difference in DISC in relation to age categories of the participants. Results are presented in table 4.6.

Table 4. 6 Relationship between Age and Behavioural Profiles of Elite and Long Distance Runners

Behavioural Profile	ANOVA	Sum of Squares	Df	Mean Squares	F	Sig.
Dominance	Between Groups	.595	3	.198	.571	.635
	Within Groups	79.250	228	.348		
	Total	79.845	231			
Influence	Between Groups	.663	3	.221	.469	.704
	Within Groups	107.458	228	.471		
	Total	108.121	231			
Steadiness	Between Groups	.747	3	.249	.659	.578
	Within Groups	86.145	228	.378		
	Total	86.892	231			
Compliance	Between Groups	.077	3	.026	.067	.977
	Within Groups	86.643	228	.380		
	Total	86.720	231			

Results in table 4.6 indicate that there was no significant difference between age and behavioural profiles of dominance ($p \geq .635$), influence ($p \geq .704$) steadiness ($p \geq .578$) and compliance ($p \geq .977$) in relation to the age categories of the participants. This implies that the null hypothesis (Ho_1) that there would be no significant difference in behavioural profiles of Kenyan Elite middle and long distance runners across their age categories was not rejected. The results suggest that age categories are not likely to predict behavioural profiles (DISC) of Kenyan elite middle and long distance runners. This study suggests further research regarding age categories in relation to behavioural profiles (DISC) involving other sports.

4.5 Relationship between Gender and Behavioural Profiles of Elite Middle and Long Distance Runners

This study hypothesized that there would be no significant difference in behavioural profiles (DISC) of male and female Kenyan elite middle and long distance runners. A paired sample t- test was computed to determine the extent of significant difference in the behavioural profiles of the athletes in relation to their gender. Results are presented in table 4.7

Table 4. 7 Relationship between Gender and Behavioural Profiles of Elite Middle and Long Distance Runners

Behavioural Profile	M	Std. Dev.	T-Value	Df	Sig.
Dominance	-2.73	.74	-55.80	2.31	.000
Influence	-2.63	.84	-47.34	231	.000
Steadiness	-2.74	.76	-54.72	231	.000
Compliance	-2.90	.76	-57.32	231	.000

Results in table 4.7 have shown that there was a statistically significant difference in the t-scores for gender and behavioural profiles (DISC) of Kenyan elite middle and long distance runners. The t-test scores indicate that there was a statistically significant difference for gender and behavioural profiles of the study participants. Specifically, the findings have indicated that the behavioural profiles had, dominance ($M=-2.73$, $SD=.74$; t -55.80, $p\leq.000$), influence ($M=-2.63$, $SD=.84$; t -47.34, $p\leq.000$), steadiness

(M=-2.74, SD= .76; t 54.72, p≤.000), and compliance (M=-2.90, SD=.76; t -57.32, p≤.000) respectively. These results suggest that there is a significant difference in behavioural profiles of male and female Kenyan elite middle and long distance runners. Hence, the null hypothesis (H_{02}) was rejected. The current study implies that gender is likely to predict behavioural profiles (DISC) of male and female Kenyan elite distance runners.

4.6 Relationship Between Type of Race and Behavioural Profiles of Elite Middle and Long Distance Runners

The study hypothesized that there would be no significant difference in behavioural profiles (DISC) of Kenyan elite middle and long distance in relation to their varying events. One – Way Analysis of Variance (ANOVA) was computed to determine if there was a significant difference in behavioural profiles of the athletes based on their various athletic events. Results of the findings are presented in table 4.8.

Table 4. 8 Relationship between Type of Race and Behavioural Profiles of Elite Middle and Long Distance Runners

Behavioural Profile	**ANOVA**	**Sum of Squares**	**Df**	**Mean Squares**	**F**	**Sig.**
Dominance	Between Groups	.933	5	.187	.535	.750
	Within Groups	78.911	226	.349		
	Total	79.845	231			
Influence	Between Groups	1.485	5	.297	.629	.678
	Within Groups	106.636	226	.472		
	Total	108.121	231			
Steadiness	Between Groups	1.155	5	.231	.609	.693
	Within Groups	85.737	226	.379		
	Total	86.892	231			
Compliance	Between Groups	1.258	5	.252	.665	.650
	Within Groups Total	86.720	231			

Results in table 4.8 have revealed that there was no statistically significant difference in the behavioural profiles of the athletes in relation to their types of races (800m, 1,500m, 3,000m, 3,000mST C, 5,000m 10,000m). The following are scores for individual behavioural profiles; dominance behavioural profile ($p \geq .750$), the influence behavioural profile ($p \geq .678$), steadiness behavioural profile ($p \geq .693$) and the compliance behavioural profile ($p \geq .650$). These results imply that the type of race which the study participants engaged in was not likely to influence their behavioural profiles. Hence, the null hypothesis that there would be no significant difference in behavioural profiles of elite middle and long distance Kenyan athletes in relation to their type of race (H_{o3}) was not rejected.

4.7 Relationship between Marital Status and Behavioural Profiles of Elite Middle and Long Distance Runners

The study hypothesized that there would be no significant difference in behavioural profiles (DISC) of Kenyan elite middle and long distance Kenyan athletes across their marital status. A paired sample t – test was computed to establish if there was a significant difference in behavioural profiles (DISC) of the married and single elite middle and long distance Kenyan runners. Results are presented in table 4.9.

Table 4. 9 Relationship between Marital Status and Behavioural Profiles of Elite Middle and Long Distance Runners

Behavioural Profile	M	Std. Dev.	T-Value	Df	Sig.
Dominance	-2.68	.70	-57.71	2.31	.000
Influence	-2.58	.80	-49.39	231	.000
Steadiness	-2.68	.74	-55.11	231	.000
Compliance	-2.81	.73	-58.03	231	.000

Based on the results in table 4.9, there was a statistically significant difference in the t – scores for marital status and behavioural profiles (DISC) of Kenyan elite middle and long distance runners. The t-scores for the various behavioural profiles are; the dominance behavioural profile ($M=-2.68$, $SD= .70$; $t -57.71$, $p\leq .000$), the influence behavioural profile ($M=-2.58$, $SD=.80$; $t- -49.39$, $p\leq .000$), the steadiness behavioural profile ($M=-2.68$, $SD=.74$; $t- -55.11$, $p\leq .000$) and the compliance behavioural profile ($M=-2.81$, $SD=.70$, $p\leq.000$. These results imply that the marital status of Kenyan elite middle and long distance athletes was likely to influence the participants' behavioural profiles. The results also serve as evidence that the null hypothesis (H_{04}) was rejected. Hence, suggesting further research regarding marital status and distance running.

CHAPTER FIVE: DISCUSSION

5.1 Objectives of the Study

This chapter presents a discussion of the findings based on chapter four. The discussion is presented under the themes derived from the objectives of the study as follows:

i. To establish the demographic characteristics of Kenyan elite middle and long distance runners.

ii. To determine behavioural profiles (DISC) of Kenyan elite distance runners across their age categories.

iii. To ascertain behavioural profiles (DISC) of Kenyan elite distance runners across their gender.

iv. To establish behavioural profiles (DISC) of Kenyan elite distance runners across their type of race.

v. To determine behavioural profiles of Kenyan elite distance runners across their marital status.

5.2 Age Categories of Elite Middle and Long Distance Runners

Findings of the current study showed that majority (44.8%) of the elite athletes were aged 22-30 years old, followed closely (41.4%) by those participants aged 21 years and below. Research evidence has shown that athletes in these age categories are perhaps the fastest (Zavorsky et. al, (2016). This could be attributed to the fact that a majority of the elite athletes are young, a common factor across the world where top athletes are younger. This is supported by Allen & Laborde (2014) who recommended a more targeted focus on adolescents, as this is the age of greatest change in personality and sport participation. Similarly, a study by Lyk, et. al, (2010) showed no significant age

– related decline in performance before the age of 55. Further, it has also been concluded that aging has minimum negative influence on running performance (Celie et. al, (2010).

It was further concurred by Hallal et. al, (2012) that adolescent is a critical development stage during which greatest changes in levels of physical activity are observed. Through sport participation, adolescents gain confidence, learn new physical capabilities, develop important social relationships, develop leadership skills and gain satisfaction by working towards goals (Gould & Carson, 2008; Mugalla & Wamukoya, 2017).

Based on the studies by Scullard & Baum (2015) and Kruger & Saayman (2014), age is a significant factor in commitment, motivational, loyalty levels and a successful way of categorizing athletes. Further, research conducted by Hollings, Hopkins & Hume (2014) have revealed that track and field athletes should prepare for an age window side of approximately 2.5 years each side of a peaking age of 23 – 28 years depending on event or race. This implies that they are usually extrinsically motivated to maintain their health and socialize with their peers suggesting that structures should be established to identify and nurture talent. Structures usually impact positively on elite athletes. On the contrary, those athletes aged 40 years and above do engage in sport for the pleasure they felt in living exciting experiences. This explains why very few of the study participants were available in the present study in the age category of 40 and above.

Zavorsky et. al, (2016) and Kouthouris (2005) concluded that levels of physical activity participation decrease with age. It is in the interest of the present study to suggest the need for transition programs from active sport participation to either becoming coaches, trainers, mentors or sports administrators. However, if athletes are motivated, increased participation should be realized. This will in turn enable them exploit their talents. In conclusion, the findings of the current study indicate that behavioural profiles of Kenyan elite middle and long distance Kenyan are not likely to be influenced by age – categories.

5.3 Gender of Elite Middle and Long Distance Runners

The current study captured information on the distribution of gender among the participants. Results in table 4.3 show great disparity in the numbers of male and female middle and long-distance elite Kenyan athletes who participated in the study. The current study attracted more male participants than their female counterparts, a scenario that was supported by Arana et. al, (2009) whose findings revealed that women make up 10% of the running population. This revelation is consistent with the study by Frick (2011) who noted that evidence from documented literature has shown a considerable gender gap in competitive distance running. However, he refutes by concluding that gender gap has narrowed over the years.

Further, participation by females was generally low, while men exhibited higher levels of extrinsic motivation to participate in physical activities (Anderson and Wozeclori, 2008); Craft et. al, 2014; Stahil et. al, 2015; Kubaisy, 2015). This was due to the fact that they were more affected when it came to choosing between participating in sport and responsibilities such as child care and household chores. Perhaps this explanation supports the current study where males were more than their female participants(male, 76.3% ; female, 23.7%).

Similarly, a study by Lauderdale et.al, (2015) confirmed a significant gender difference with males responding more positively to intrinsic motivation than the females. This explains why Hands et. al, (2016) concluded that differences in physical activity levels between males and females may be a reflection of a human revolution theory (Darwin). Darwin's theory suggested that men were strong, physically fit and courageous in order to compete favourably with other males. In addition, societal expectations played a powerful role in moulding male and female behaviours, although, both genders differed in their attitudes and motivations towards sport and exercise (Lippa et. al, 2011; Orgega- Smith et. al, 2012). Therefore, there is need to consider different needs across the lifespan since gender differences fluctuate with age. Hence, future studies should focus on encouraging the female to increase participation in physical activity and elite distance running for that matter. This is consistent with Coast, Blevin & Wilson (2004) whose study concluded that gender differences are likely to exist as running distances increase.

Increased gender equality decreases the average number of offspring which allows mothers more time for leisure- time physical activity (Balish et. al, 2016). In addition, Rohan et.al, (2016) concluded that girls' participation was less favourably influenced by socio-ecological factors at individual, family, school and environmental levels; suggesting future intervention strategies to increase physical activity levels. Specifically, the strategies should focus on equality of support and opportunities for both boys and girls. However, it is possible that the gap between boys' and girls' participation levels can be reduced. Similarly, the differences that were observed in the current study suggest a more distinctive approach to boost sports participation by the female athletes. Although equal opportunities are available for both genders to participate in sports in Kenya, findings of this study suggest more advocacy for increased female participation. Again, it is not clear why more males than females participated in the present study. For instance, the data collection tool that incorporates either interviews, focus group discussions or one that is structured may reflect adequate reasons for participation in sports. On the contrary, the data collection tool for the present study was limited in this particular regard since it did not capture reasons for participation in middle and long-distance races.

In an earlier study, Van Uffelen et. al, (2017) revealed that women were more likely to prefer activities that were competitive, vigorous and performed outdoors. Overall, it was concluded that there were marked gender differences suggesting more indoor activities; opportunities that would enable both men and women to participate easily. A similar view was expressed by Coleman et. al, (2008) whose review study, based in the United Kingdom and other westernized nations, concluded that boys were more likely to participate in sports than girls. Based on this revelation, the gap between girls and boys was likely to be more pronounced with advanced age. The study suggested provision of opportunities where young people would access a minimum of two hours per week of physical activity (PA), a view that is shared with the present study that recommends provision of adequate facilities that would attract more female athletes to engage in distance running.

Further, an experimental study on differences between men and women in relation to the DISC showed generally minimal differences between the two genders. For instance, the largest differences were seen on the IS (influence, steadiness) scale whereby gender accounted for 3.7% of the scale variance. Additionally, women tended to score higher after responding to the I (influence), IS (influence, steadiness), S (steadiness) and SC (steadiness, compliance) scales. On the other hand, men tended to score higher on the D (dominance), DI (dominance, I (influence), C (conscientiousness or compliance) and CD (conscientiousness /compliance, dominance) scales (Scullard & Baum, 2015). In conclusion, the current study revealed that gender is likely to influence behavioural profiles (DISC) of elite middle and long distance Kenyan runners.

5.4 Type of Race of Elite Middle and Long Distance Runners Participants

The type of race by the study participants, as displayed in the concept model (figure 1.2) was an independent variable while the DISC behavioural profiles were dependent variables. Results shown in table 4.4 indicate a fairly favourable distribution of athletes across the races that were included in the study. Based on this distribution, 10,000m was the most preferred race (25.4%). The study by Cunningham et. al, (2013) revealed that there has been considerable scientific literature on long distance running. Perhaps this has contributed to the publicity and attention given to 10,000m running. The higher percentage of athletes in the 10,000 meters race may be an indication of this event being more popular, probably because of the higher prospects of winning. Furthermore, it should be noted that many athletes who participate in the 10,000 meters race also double up as competitors in road races and easily transit to half marathon or full marathon as they grow older. Moreover, 10,000 meters is the only race in track events that does not have heats; all the entrants compete in the finals, thus giving them an opportunity to feature at this critical stage of competition.

Training for a 10,000 meters race is also not very taxing tactically, since the most critical strategy is endurance that is built over time, thus making the race more popular than the shorter races. Perhaps the other likely reason for the popularity of the 10,000m race in the present study was due to the fact that the athletes run in packs or groups. Psychologists attribute pack running to moral support, encouragement and motivation. However, the performance of Kenyan Performance (table 1.1) by elite middle and long distance running at IAAF World Championships has been challenged by other countries (IAAF, 2017; IAAF, 2019).

On the other hand, table 4.3 shows that fewer participants had registered to train in the middle distance running (800m – 3,000m) compared to 10,000m). This finding is consistent with a review study by Thompson (2017) who indicated that while running is considered to be the most popular event in the world, middle distance running has received limited documented scientific literature.

Studies have profiled other psychological characteristics in different sporting disciplines such as handball goal keepers. For instance, aggression, anxiety and reaction times are believed to affect performance in the sense that less successful goal keepers experience faster simple reaction times and thus make fewer mistakes (Kajtna et. al, (2012). In another study involving Rugby Union players, the task was to establish the relationship between physical characteristics an on- game behaviours. It was concluded that the rugby players recognized the importance of optimal levels of speed, repeated sprint ability and body composition to perform tasks effectively (Smart, 2011). Hence, the need for this study involving the relationship between the type of race and behavioural profiles.

Again, a study (Duck, 2006) involving Australian football coaches embraced behavioural profiling (DISC) approach. The purpose of the study was to improve their coaching styles. The findings of the accreditation course showed that the coaches were able to behave, interact and give feedback to their athletes' behavioural styles. Second, the coaches realized that communication was a key component in their coaching career.

However, the current study was limited to the use of the descriptive survey research design due to limited studies in this area, in Kenya. Further, Miller (2000) and Arana et. al, (2009) revealed that marathoners embraced a task-oriented approach to life since it motivated them to accomplish their respective goals. In a related study by Coumbe – Lilley et.al, (2015), psychological skills profiling of sub – elite marathon athletes enabled them to complete the race. The marathon athletes realized that their commitment to goals strengthened significantly. Therefore, the current study recommends creation of awareness about the various races among the adolescents as this is a phase when athletes are motivated to perform physical activities and or sports. The Ministry of Sports should structure talent identification in order to increase participants in all the middle and long – distance races. In conclusion, profiling may be used to determine performance of athletes regardless of the type of race or event.

5.5 Marital Status of Elite Middle and Long Distance Runners

Among the factors that affect distance runner performance is the marital status. However, limited research has been conducted on the relationship between marital status and distance running. Smith (2019) has asserted that marital status has significantly affected the performance of middle and long distance running. Single athletes have an advantage over their married counterparts. This is consistent with the view by Mesten & Timerga, (2017) who concluded that single athletes are positively correlated with distance running performance. This is also supported by Kouthouri (2005) whose conclusion was such that more single individuals participated in skiing more frequently than the married ones. It is also believed that running becomes a source of conflict or symptomatic of other problems in a relationship such as lack of adequate time, lack of intimacy and social relationships (Smith, 2015). However, the present study seems to be a solution to married athletes through the use of behavioural profiles (DISC).

On the contrary, a few studies have concluded that marital status does influence participation levels in physical activity (PA). This is supported by Pettee et. al, (2006) whose results revealed that married men reported higher levels (0.008) of exercise participation. The study also highlighted the fact that married women reported higher levels of total ($p < 0.0001$) and non- exercise activity ($p < 0.0001$) with a tendency toward higher exercise participation ($p<0.05$). Therefore, marital status should be one of the determinants for PA participation suggesting that the study agrees with the current study which proposes that strategies should be put in place to motivate married athletes towards participation in distance races.

Similarly, Sobal & Hanson (2010) confirmed that marital status appeared to be an important predictor of the amount of physical activity (PA) and leisure-time physical activity (LTPA). This is supported by Cobb et. al, (2015) whose study concluded that changes in an individual's PA are positively associated with changes in his or her spouses' physical activity. The study also suggested that strategies should be considered which would target married athletes. This is likely to increase their numbers which is consistent with the present study on recommendations for policy, practice and further research.

However, Porch et. al, (2016) provides evidence that marriage was associated with lower levels of physical activity (PA) among African American men compared with white men. The study suggested that there should be an understanding of how responsibilities associated with marriage may contribute to differences in health behaviours. Second, appropriate strategies could be developed to increase PA levels, especially among African American married men.

A few studies seem to hold a different view as far as the influence of marital status on PA levels are concerned. For instance, McCarthy (2017) concludes that perceived effects of pre-event exertion on physical and mental strength among married athletes, would burn too many calories and subsequently impact negatively on the age needed for competition. Elina (2010) concurs by concluding that major life events such as marriage are believed to decrease physical activity levels. Many athletes may not accommodate divided loyalties adequately. Therefore, it is in the interest of this study to recommend the use of behavioural profiles for elite middle and long-distance running in order to address issues concerning communication, cohesiveness and self-awareness. This would motivate more married athletes to take up competitive running; even among elite athletes who may be married or contemplating marrying or getting married, athlete behavioural assessments would enhance communication and improve relationships between couples.

5.6 Behavioral Profiles of Elite Middle and Long Distance Runners

The current study is founded on the conceptual framework (figure 1.1) in chapter one that contains the four-styled behavioural profiles (DISC). Specifically, the acronym, DISC stands for D- dominance, I- influence, S- steadiness, and C- compliance (conscientiousness). Profiles are categories or groups of people that are based on particular characteristics or features such as age or race (Collins Dictionary, 2017). Studies that have been conducted on the DISC behavioural profiles suggest that all people possess these four basic behavioural tendencies to differing or rather, varying degrees (Bonnstetter and Suiter, 2007; Witmann, 2008; Kean, 2016).

5.6.1 Dominance Behavioural Profile of Elite Middle and Long Distance Runners

The current study sought to identify the dominant behavioural profile across the elite Kenyan middle and long-distance runners. Based on the conceptual framework (figure 1.1) in chapter one, the dominance behavioural profile exhibits direct, authoritative, decisive and result- oriented characteristics.

Table 4.5 shows that the dominance behavioural characteristic that had the largest mean value scored in the behavioural characteristic where participants focused on doing things in an organized manner (M= 4.33, SD=0.80). However, the smallest mean was scored where participants involved provision of details of training sessions for the athletes (M=0.43, SD=0.90). This implies that if most of the elite middle and long distance runners value being organized, their training sessions would be planned appropriately according to three distinct phases; pre-training, training and post – training of elite middle and long distance races. This view is supported by Combe-Lilley, Hamstra-Wright & Wedner (2015) whose study placed marathoners on an 18-week program, based on pre-training, training and post-training as independent variables.

Similarly, the smallest mean where participants preferred getting details is also a positive aspect of athletes. Once training in an organized manner is coupled with provision of facts or details, the goals of elite distance running training can easily be achieved. Again, the performances of athletes are likely to be predicted. This is consistent with the study by Arana et. al, *(*2009) whose study confirms that most marathoners embrace a task-oriented approach to life and they are usually motivated to accomplish goals. Results from another study (Scullard and Baum, 2015) revealed that men tended to score higher on the D (dominance) than their female counterparts. It differs slightly from the current study since the analysis did not get the actual differences between male and female study participants. This was a limitation on the present study, thereby recommending further research in behavioural profiles. If the DISC approach is incorporated during training sessions for distance running, athletes are likely to practice diligently and predict the outcome. Overall, the DISC would yield peak and consistent results. Further, effective communication, based on their behaviour preferences improves team performance (Duck, 2006).

5.6.2 Influence Behavioural Profile of Elite Middle and Long Distance Runners

Participants responded to the statements describing characteristics of the influence behavioral profile (Appendix I, Section B- influence Profile). Based on the conceptual framework (figure1.1) in chapter one, the influence behavioural profile is characterized by enthusiasm, action and encourages collaboration. Table 4.6 shows that, the influence behavioural characteristic that had the largest mean was one that focused on talking to others about training (M=3.98, SD=1.04) whereas the one with the lowest mean involved being persuaded when under pressure (M=3.27, SD=1.32). This implies that the participants preferred talking to others about training. This is important as they may share their challenges with others. Usually, athletes feel motivated when they interact among themselves while training.

The results of the current study agree with Dr William Mouton Marston (Kean, 2016) whose study confirmed that human beings are naturally placed in four profiles (DISC). The results also agree with Arana et. al, (2009) and Miller (2000) who confirmed that marathoners tend to connect (influence behavioural profile) with others, suggesting that athletes prefer middle and long-distance races because of running in groups. Pack running accords them an opportunity to interact, connect, collaborate and encourage each other during training and competitions. However, some studies (Scullard & Baum, 2015) have revealed that women tended to perform better on the influence behavioural profile than the men. However, this is not consistent with the purpose of the current study. Future research can focus on comparing behavioural profiles between male and female in elite distance running. The current research also suggests the use of an experimental research design as opposed to the descriptive survey research design which the current study adopted.

On the other hand, the smallest mean was scored in the behavioural characteristic where athletes indicated that they require persuasion when under pressure. This implies that those athletes who are likely to be persuaded may not complete either training sessions or a competitive. Therefore, the current study suggests that their various coaches may behavioural profiles. This view is consistent with research by Coombe-Lilley, Hamstr-Wright & Wedner (2015) whose study concluded that psychological skills such as motivation, goals, mental imagery and anxiety assisted marathoners to complete their race.

5.6.3 Steadiness Behavioural Profile of Elite Middle and Long Distance Runners

Steadiness behavioral profile depicts characteristics of clarity, patience, loyalty and team-focus (Mattern, 2013). Table 4.7 shows that, most of the participants who preferred statements of the steadiness behavioural category were inclined to a friendly training environment (M=4.31, SD=0.90). A friendly training environment is secure and motivates athletes during training. Results also show that fewer athletes disliked listening to facts (M=2.31, SD=1.35). This implies that various coaches can use coaching methods that may motivate athletes to listen to facts. Distance running skills should be taught through giving facts. Facts should be understood before the skills are manipulated through performance.

Further, the results from the current study are a clear indication that most of the participants had tendencies in the steadiness behavioural profile. These results are consistent with the study by Scullard & Baum (2015; Scarbez (2007) which concluded that women tended to score higher in steadiness behavioural profile. Therefore, the current study suggests that behavioural profiles should be incorporated during the training sessions in order to exploit the potential of the Kenyan elite middle and long distance runners. This is likely to motivate both the distance runners and their coaches towards hard work.

5.6.4 Compliance Behavioural Profile of Elite Middle and Long Distance Runners

Compliance or conscientious behavioural profile is characterized by patience, loyalty, team-focus, process-driven, preparedness and dependable (figure 1.1). Table 4.8 shows that the compliance behavioural characteristic that had the largest mean was one that focused on punctuality for training (M=4.37, SD=0.88). In elite distance running, reporting for training sessions is an essential component. This will provide enough time for coaching and training. Overall, punctuality is part and parcel of preparedness and discipline of athletes. Therefore, if the DISC is incorporated into training sessions, elite middle and long distance athletes are likely to excel in World Championships. Therefore, the current study suggests that coaches should appreciate athletes who prefer training alone, but rather, encourage them to learn to interact with others. This will accord them an opportunity to share challenges that may encounter during training. Challenges are likely to hinder appropriate training in readiness for competitions.

The characteristics depicting the compliance behavioural category are consistent with the study by Nettle & Clegg (2008) whose results revealed that marathoners showed strong tendencies to be hard-working, dependable and organized. It also implies that many of the elite middle and long distance athletes are likely to be consistent during training. Overall, their performances are also likely to be predictable. As such, the current study recommends further research involving male and female elite distance athletes with the DISC.

In conclusion, findings of this study have revealed that the dominance behavioural profile scored the largest mean, followed by compliance, steadness and lastly, the influence behavioural profile. Therefore, the dominance behavioural profile was dominant among the study participants. This study suggests that middle and long distance runners prefer doing things in an organized manner, settting goals for their training sssions.

5.7 Relationship between Age and Behavioural Profiles of Elite Middle and Long Distance Runners

One- Way Analysis of Variance (ANOVA) revealed that there was no significant difference between age and behavioural profiles of elite middle and long-distance Kenyan athletes. Hypothesis testing of age and behavioural profiles (DISC) revealed the following values; dominance as $p \geq .635$; influence $p \geq .704$; steadiness as $p \geq .578$; compliance $p \geq .977$. These results imply that the behavioural profiles (DISC) were not determined by the ages of study participants. This is consistent with Lyk et. al, (2010) whose study findings indicated that there was no significant decline in performance based on age before 55 years. Similarly, Celie et. al, (2010) revealed that age had minor negative influences on running performance, suggesting limited documented literature on age and the DISC. They differ from a study conducted on population comprising of adults aged 18 years and older whose responses were distributed across the behavioural profiles, revealed that 81.3% appeared more inclined towards the DISC profiles. It was also noted that the study participants were more likely to choose priorities of those of other profiles (Scullard & Baum, 2015). Therefore, this study suggests further research on the relationship between age and behavioural profiles.

Another study (Kruger & Saaman, 2014) involving triathletes concluded that age is a significant factor in commitment, motivational and loyalty levels. Similarly, age groups are appropriate since they portray different sport and spending behaviour. Zavorsky et.al, (2016) concurs by concluding that there is a decline in performance levels from the age of 35 years old and the rate of participation and performance have been shown to vary by age group. This is inconsistent with the current study which investigated the relationship between age and behavioural profiles of elite middle and long distance Kenyan runners.

However, the present study found no statistical significance between age and behavioural profiles implying that the null hypothesis was not rejected. Clearly, the implication of this finding is that the training of middle and long distance runners should not be segregated on the basis of age since principles of training (overload, reversibility, progression, individualization, periodization and specificity) are basically the same (Gall, 2012). This agrees with previous studies which have confirmed that athletes of different age groups compete together (Kruger & Saayman, 2016; Zavorsky, Tomko & Smoliga, 2016; Bravzo- Sayavera, 2018). Indeed, the current study has also confirmed that different age groups do train together. Therefore, the focus should be on correcting and adjusting techniques and competition structures with track and field events (Brazo- Sayavera et. al, 2018), where applicable.

There is also the need to appreciate the loss of functional capacity in older athletes that may not be overcome by training. Specifically, younger and older athletes experience different physiological needs that may be observed during training yet they portray similar behavioural profiles. For instance, studies have shown that older athletes may be unable to maintain the same volume and load. Older athletes also experience delayed reaction time to the same training load than do the younger athletes (Foster et. al, 2017). Therefore, ageing does affect athletic performances. Clearly, athletes reach the so-called "sweet spot" age or peak-level at mid-20's to early 30's. Similarly, age changes how bodies utilize oxygen since, Vo2 max tends to decline after age 30 and reduces performance by half to 5% per decade, after age 30(Minson, 2015). Hence, strategies should be put in place to maintain exercise intensity among older athletes. This should be done through resistance training in order to prevent sarcopenia, selective loss of type 11 muscle fibres and improve their physical capacity (Foster et. al, 2017).

5.8 Relationship between Gender and Behavioral Profiles of Elite Middle and Long Distance Runners

From the findings of the current study, it is evident that there was a statistically significant difference in behavioural profiles (DISC) of male and female Kenyan elite distance runners. For instance, the t-values scored in the respective behavioural profiles were dominance $t = - 55.80$ $p< .000$, influence - $t = - 47.34$ $p <.000$, steadiness - $t = - 54.72$ $p < .000$, and compliance or conscientious as -$t = - 57.32$ $p< .000$. The negative t-values are considered to be evidence against the null hypothesis. The study by Scullard & Baum (2015) agrees with the current study which concluded minimum differences between male and female participants in relation to the DISC. It is believed that the largest differences were seen on the IS (influence, steadiness) whereby women accounted for 3.7% of the scale variance.

Further, Coast, Blevins & Wilson (2000) have emphasized that gender differences should disappear with increases, especially past the marathon. A study by Frick (2011) concluded that there has been a considerable gender gap in documented scientific literature. However, the same study concluded that the gender gap has considerably reduced in the recent years

On the other hand, the men scored higher on the D (dominance), DI (dominance, influence), C (conscientiousness), and SC (steadiness, compliance) (Scullard & Baum, 2015). In conclusion, the hypothesis stating that there would be no significant difference in behavioural profiles of male and female Kenyan elite middle and long distance runners was not rejected. The implication of this finding is that both men and women use similar training venues and coaches thus no diversity in psychological trainings. Similarly, principles of training (overload, reversibility, progression, individualization, periodization, specificity and recovery) are also the same (Gall, 2012).

Previous studies on gender have supported the conclusion of the current study whereby, males and females either train together during leisure time physical activity(LTPA) or regular physical activity (PA) sessions (Trost et. al, 2002; Pitsavos et. al, 2005; Chachshivili – Lissitsa & Galily, 2010; Foster et.al, 2017). It is also believed that Diana Sigei Chepkemoi (Kenyan) is the only female athlete who trains in a group at the Kaptagat training camp, Uasin Gishu, Kenya. Both male and female athletes are usually accorded the opportunity to show case their talents at all International Championships (Douglas & Nakamura, 2019). For instance, in 10,000 meters, at the IAAF World athletics Championships, Mo Farah (Britain) and Almaz Ayana (Ethiopia) won with 26.49:51 minutes and 30.16:32 minutes respectively.

However, physiological differences between male and female athletes during training should be observed and considered. The coaches should be able to adjust competition structures within track and field where applicable. The physiological differences give men a more competitive edge than women. For instance, studies have documented men having a higher acceleration and speed due to the fact that they have a higher oxygen carrying capacity than women. This enables them reach peak level during training faster than do women (Latham, 2018). Further, the size of the heart and aerobic fitness steadily increases in response to an increase in training intensity and duration (McMahan, 2015). On the other hand, female athletes are more efficient at converting glycogen to energy than their male counterparts (Latham, 2018). Perhaps this explains why female athletes excel in ultra- long distance sports; events that are longer than the half (21.0975km) and full marathon (42.195km) races (I AAF, 2010).

5.9 Relationship between the Type of Race and Behavioural Profiles of Elite Distance Runner

The races that were considered for the current study were middle and long-distance events ranging from 800m to 10,000m. An interplay between the type of race as an independent variable as shown in the conceptual framework (figure 1.1) in chapter one), was expected that it would influence the behavioural profiles (DISC) of distance athletes. However, based on One-Way Analysis of Variance (ANOVA), the findings of the current study have revealed that the null hypothesis was not rejected (dominant $p \geq .750$; influence $p \geq .678$; steadiness $p \geq .693$; compliance $p \geq .650$). This implies that the type of race of elite distance runners is not likely to influence behavioural profiles. Although the findings of the present study have rejected the hypothesis, a study by Cunningham (2013) concluded that there were differences between middle and long distance running. The differences are, increased stride length, and reduced contact time, increased knee flexion during the swing and greater centre of mass oscillation.

Generally, the same principles of training (overload, progression, specificity, reversibility, periodization, individualization and recovery) apply in both middle and long distance running. However, coaches should care to note that while the principles of training in both middle and long distance running are similar, they lead to different adaptations as far as aspects of aerobic fitness are concerned. For instance, long distance runners exhibit higher VO_2 max (maximal oxygen uptake) because the races take longer to complete. On the average, training loads for long distance and middle distance range between 160kms – 180kms while those for middle distance runners vary (LD 160kms-180kms; MD 130kms – 140kms) respectively. However, middle distance runners tend to maximize on aerobic speed (Davis, 2013; Ramadan et. al, 2011).

On the other hand, coaches should observe that training for middle distance running (800m 1500m, 3000m) should be exclusively similar in that they all place energy demands on aerobic system. Therefore, focus should be geared towards aerobic development to create energy from oxygen. Similarly, athletes find it easier, either to perform or compete favourably in all (or two races) the races at elite level in World Championships. For instance, in the 1996 Olympic Games, Svetlana Masterkova won in both 800m and 1,500m, who is apparently the world record holder (4:12.56) of the mile (Atlanta, 1996). So, it is tactically easier to transit from one middle distance race to another due to similarities in training technique and physiological adaptations to training principles (Davis, 2015). Athletes who participate in 5,000m can comfortably advance to 10,000m since long-distance running events follow the same training techniques as well as similar physiological adaptations. For instance, Kenenisa Bekele, an Ethiopian long- distance runner is the current World holder in both 5,000m and 10,000m (IAAF, 1996-2019).

While the results showing the difference between the type of race and the behavioural profiles were not statistically significant, other studies seem to hold a slightly different view. For instance, a study involving marathoners demonstrated that most of them embraced a task- oriented approach to life (Arana et. al, 2009). Another study showed hallmarks of compliance (conscientious), which was characterized by a strong tendency to hard work, reliable and organized (Nettle & Clegg, 2008. Similarly, a study by Miller (2000) and Coumbe – Lilley et.al, (2015) emphasized that marathoners tend to connect (influence behavioural profile) with others. While another study conducted on football coaches at a higher level in Australia concluded that behavioural profiling enabled coaches give an insight into appreciating that athletes have individual differences. The coaches were also able to recognize the importance of communication in performance, suggesting that the results were statistically significant (Coleman, 2004, p. 84; Duck, 2006).

In conclusion, the findings of the current study have indicated that behavioural profiles and type of race did not reject the null hypothesis. It is clear that although middle and long- distance runners use similar principles of training, their techniques have slight variation, such as stride length and posture (Ramadan, 2011). The design used in the current study did not capture physiological characteristics in both middle and long distance runners.

5.10 Relationship between Marital Status and Behavioral Profiles of Elite Middle and Long distance Runners

The results from the current study indicate that there was a statistically significant difference in behavioural profiles of elite middle and long distance runners across their marital status. Based on the t – values from the paired sample t – test, all the behavioural profiles (DISC) scored a $p \leq .000$. Based on these findings, the null hypothesis was rejected. These results imply that the marital status can significantly influence behavioural profiles (DISC). This implication is supported by Smith (2019) whose study concluded that marital status affects the performance of distance running significantly. Further, single status significantly correlates with the performance of distance running.

Further, the current study has been supported by other studies. For instance, a study conducted by Lagat, (2018) on married athletes have cited various benefits accruing from exercising or training together. The couples experience an opportunity to enhance their relationships, they motivate each other to attend training sessions, may learn to save money together and above all, they may form good pictures for branding purposes. Therefore, incorporating behavioural profiles during training sessions would otherwise, enhance relationships of married athletes. This indicates that behavioural profiles is likely to give married athletes a competitive edge over their opponents.

Further, findings of the current study have been confirmed by performances of married athletes in World Championships. For instance, Catherine Ndereba, a married Kenyan athlete, excelled in the 2000 Boston and Chicago marathon. In 2005, she was the first woman to win the Boston marathon four times. Ndereba has also held the women marathon in 2001 and 2002. In 2011, Catherine Ndereba finished 3rd at the Beijing International marathon (sports.esp.go.com, 2018). Similarly, Diana Sigei chepkemoi (also married) earned a silver (52:46mins) in the 10 mile run at Amsterdam in 2011 as well as the 2013, Jarkata marathon (B A A.org, 2016). Research evidence on married couples using the DISC Behavioural assessment indicated that behavioural profiling enhanced relationships between couples through embracing greater levels of communication, encouragement, honour and intimacy. Hence the couples learned to accommodate each other in resolving conflicts (Canadian Comparison Report, 2012).

Therefore, if strategies are put in place to encourage married athletes, the numbers of those enrolled for training in distance running are likely to increase.

A few other studies involving married exercisers have revealed a positive correlation between marriage and participation in physical activity. For instance, Pette et. al, 2006; Sobal & Hanson, (2010) have confirmed that marital status is an important determinant of physical activity participation levels and the amount of leisure -time activity. Indeed, Elina (2010) confirms that major life changes (marriage, divorce, widowhood) seem to affect participation in physical activity.

However, Porch et.al, (2016) disputes the foregoing argument by providing evidence that marriage was associated with lower levels of physical activity, suggesting an understanding of how responsibilities associated with marital status may contribute to differences in health behaviours. Moreover, the differences in health behaviours could help develop strategies to increase physical activity levels which concur with the recommendation of the current study that attracted more (71.1%) single athletes compared to the married (28.9%) ones.

In conclusion, strategies should be established that would encourage potential married athletes to volunteer into training for elite middle and long distance running. Perhaps, due to various cultural obligations, their participation in distance running has been limited. Again, single athletes may also fear to contemplate getting married while still pursuing their running careers. So, both single and married athletes need to be motivated to participate in elite middle and long distance running.

CHAPTER SIX: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary of the Findings

This chapter presents a summary of the study findings, conclusions and recommendations. These are presented based on the themes derived from the objectives of this study.

The summary of the findings established in chapter four is presented in this sub – section.

6.1.1 Demographic Characteristics of Kenyan Elite Middle and Long Distance Runners.

1. (a) Findings from the current study have shown that 41.1% of the participants were aged 21 years and below. A majority (44.8%) were aged between 22 – 30 years while 12.5% were aged between 31 – 40 years.

   (b) There were more male participants (76.3%) than female athletes (23.7%).

   (c) With regard to the type of race, the participants were distributed as follows: 18.5% were 800 meter runners, 14.7% preferred 1,500 meters, 3,000 meters attracted 14.2% of the participants and 8.6% responded to 3, 000m Steeple Chase. Finally, 18.5% and 25.4% of the participants were training for 5, 000 meters 10,000 meters respectively.

   (d) A majority (71.1%) of the study participants were single while 28.9% were married.

6.1.2 Behavioural Profiles of Elite Middle Long Distance Runners

(a) The dominant behavioural characteristic that scored the largest mean value was one that participants needed details of their training sessions(M=4.43,SD=0.90). The smallest means were evident in the behavioural characteristics that involved making decisions very fast (M=3.43, SD=1.34), talked most of the time

(M=3.02, SD=1.33) and they were sensitive to their colleagues (M=1.16, SD=0.88).

(b) The behavioural characteristic that had the largest mean in the influence behavioural profile was one that focused on talking to others about training (M=3.98, SD=1.04). The smallest mean values were evident in behavioural characteristics where participants had passion to please people (M=3.60, SD=1.33), preferred seeking freedom from routine (M=3.38, SD=1.26) and they would be persuaded when they were under pressure (M=3.27, SD=1.32).

(c) With regard to the steadiness behavioural profile, the characteristic that scored the largest mean was one that focused on a friendly training environment (M=4.31, SD=0.90). Those behavioural characteristics that scored the smallest mean values were those where participants indicated that they hated arguments and conflicts (M=3.67, SD=1.48), they were over sensitive to criticisms (M=3.38, SD, SD=1.32) and did not like listening to facts (M=2.31, SD=1.35).

(d) As for the compliance or conscientious behavioural profile, the characteristic that scored the largest mean was one that depicted punctuality for training (M=4.37, SD=0.88). The behavioural characteristics that scored the smallest mean values included athletes' preference to working with guidelines and timelines (M=3.89, SD=1.04), opportunity to give suggestions (M= 3.89, SD=1.04) and preferred training alone (M=2.41, SD=1.32).

(e) Overall, the behavioural profile that had the largest mean value (M=4.33, SD=0.80) was the dominance behavioural category.

6.1.3 Behavioural Profiles (DISC) of Kenyan Elite Middle Distance Runners across their age categories

One - Way Analysis of Variance (ANOVA) revealed that there was no statistically significant difference in the behavioural profiles and the age categories. Specifically, the p values were as follows: dominance $p \geq .635$, influence $p \geq .704$, steadiness $p \geq .578$ and compliance or conscientious $p \geq .977$.

6.1.4 Behavioural profiles (DISC) of Kenyan Elite Distance Runners across their gender.

There was a statistically significant difference in behavioural profiles (DISC) of male and female Kenyan elite distance runners. Specifically, the t-values in the respective behavioural profiles were as follows: dominance $t = -55.80$ $p \leq .000$, influence - $t = -47.34$ $p \leq .000$, steadiness - $t = -54.72$ $p \leq .000$, and compliance as -$t = -57.32$ $p \leq .000$.

6.1.5 Behavioural Profiles (DISC) of Kenyan Elite Distance Runners across their Type of Race.

There was no statistically significant difference in behavioural profiles of the type of races of elite middle and long distance Kenyan runners. Specifically, based on One – Way ANOVA, results showed the p values for behavioural profiles as follows: dominance $p \geq .750$, influence $p \geq .678$, steadiness $p \geq .693$ and and compliance. $p \geq .650$.

6.1.6 Behavioural Profiles of Kenyan Elite Distance Runners across their Marital Status.

There was a statistically significant difference in behavioural profiles of elite middle and long distance runners across their marital status. Based on the t – values from the paired sample t – test, all the behavioural profiles (DISC) had $p \leq .000$.

6.2 Conclusion

Conclusions of the findings established in chapter four are presented in this sub – section;

1. (a) More (44.8%) study participants were aged between 22 – 30 years.

   (b) There were more (76.3%) male study participants than their female counterparts.

   (c) The most (25.4%) popular race was 10,000 metres.

   (d) There were more (71.1%) married study participants than their single counterparts.

2. (a) The most prevalent behavioural characteristic under the dominance category was athletes' inclination to preferring details of their training sessions.

   (b) The most prevalent behavioural characteristic under the influence category was the participants' inclination to talking to others about traini

   (c) With regard to the steadiness category, the behavioural characteristic that was mostly preferred by the study participants was their inclination to a friendly training environment

   (d) The most prevalent behavioural characteristic under the compliance or conscientiousness category was one that focused on punctuality for training.

   (e) Overall, the behavioural profile that scored the largest mean value was the dominance behavioural category

3. Based on Hypothesis Testing by One – Way ANOVA and Paired t test, the study made the following conclusions:

   (a) The null hypothesis (H_{01}) that was tested by One – Way ANOVA was not rejected, implying that age is not likely to influence behavioural profiles (DISC) of the study participants.

(b) The null hypothesis (H_{02}) that was tested by a paired sample t-test was rejected, implying that gender is likely to influence the behavioural profiles (DISC) of the study participants.

(c) The null hypothesis (H_{03}) that was tested by One – Way ANOVA was not rejected, implying that the behavioural profiles (DISC) were not likely to influence the various events of the study participants.

(d) The null hypothesis (H_{04}) that was tested by a paired sample t – test was rejected, implying that the marital status was not likely to influence behavioural profiles of the study participants.

6.3 Recommendations

The findings of the current study have made recommendations for practice, policy and further research.

6.3.1 Recommendations for Practice

1. **Determining the demographic characteristics of Kenyan elite middle and long distance runners.**

i. Athletics Kenya (AK) should put strategies in place in order to identify talent in each of the age categories that participated in this study so that the numbers may be increased and sustained.

ii. Athletics Kenya (AK) should put strategies in order to motivate potential athletes in each of the age categories investigated in the current study.

iii. Athletics Kenya (AK) should design strategies that would motivate more female participants to enrol for participation in middle and long distance running.

iv. Athletics Kenya (AK) should collaborate with government and non – governmental agencies to establish High Altitude Training Centres in order to train athletes in middle and long distance running.

v. Athletics Kenya (AK) should put measures in place to encourage more married athletes to enrol for distance running that was the case in the current study.

vi. Athletics Kenya (AK) should incorporate behavioural profiles (DISC) during coaching clinics since the current study observed that the study participants had tendencies in all the four categories (dominance, influence, steadiness and compliance).

vii. This study also recommends strategies to be put in place for inducting coaches on the importance of behavioural profiles (DISC) during training of athletes.

2. Determining Behavioural profiles (DISC) of Kenyan elite distance runners in relation to their age categories.

i. Based on the findings, the study recommends that Athletics Kenya (AK) should put in place strategies to increase numbers in all the age categories.

ii. Athletics Kenya (AK) should incorporate behavioural profiles (DISC) when training coaches.

3. Ascertaining Behavioural profiles (DISC) of Kenyan elite distance runners in relation to their gender.

Based on the findings of the study, the following are recommendations:

i. There should be a delibrate attempt by athleteics Kenya (AK) to design a distinctive approach to boost participation in distance running for both male and female athletes.

ii. The current study indicated low numbers of elite female middle and long distance athletes.Strategies should be put in place in order to create awareness about the importance of becoming an elite sports person.

iii. Atheletics Kenya (AK) should incorporate behavioural profiles (DISC) during training of distance running athletes as gender is likely to have an impact on the DISC.

iv. The current study indicated low numbers of elite female middle and long distance athletes. Strategies should be put in place in order to create awareness about the importance of becoming an elite sports person.

4. **Determining Behavioural profiles (DISC) of Kenyan elite distance runners in relation to their type of race.**

Findings from the current study have revealed that more study participants were 10,000 meter runners. Therefore, it is recommended that Athletics Kenya (AK) should focus on increasing numbers of participants in 800 meters, 1,500 meters, 3,000 meters, 3,000 meters steeple chase as well as 5,000 meters.

5. **Determining behavioural profiles of Kenyan elite distance runners based on their marital status.**

The current study recommends that Athletics Kenya (AK) should design structures to boost participation of married athletes in elite middle and long distance running.

6.3.2 Recommendations for Policy

Based on the findings of this study, recommendations are made for policy formulation. The recommendations have been made in conjunction with the objectives of the current study.

1. **Demographic Characteristics of Kenyan Elite Middle and Long Distance Runners.**

i. It is recommended that both County and National Governments should establish training camps for different age categories. This may address the different physiological needs of athletes adequately.

ii. County and National Governments should put structures in place to encourage more female athletes to enrol for elite distance running. Participants throughout the country.

iii. It is also recommended that the County and National Governments should put strategies in place for talent recruitment in all middle and long distance races.

iv. The County and National Governments should set up training camps for married athletes. First, this approach may encourage them to enrol for training sessions. Second, this approach may cater for their different physiological needs as well as their obligations during training sessions.

v. Athletics Kenya (AK) should initiate programs where sports administrators, coaches and athletes are trained on how to use behavioural profiling (DISC) during training. Behavioural profiling gives insights into each person's strengths and weaknesses, developmental areas, communication styles and motivation.

2. Establishing Behavioural profiles (DISC) of Kenyan elite distance runners in relation to their age categories

The findings of the current study revealed that the elite distance runners had tendencies in all the four behavioural profiles (DISC). Therefore, the Government of Kenya should develop a curriculum that would incorporate behavioural profiles (DISC) for coaches to use during training. This is likely to enable more athletes to have a competitive advantage over their counterparts in International Championships.

3. **Ascertaining Behavioural profiles (DISC) of Kenyan elite distance runners in relation to their gender.**

   The current study recommends the following:

   i. The Government of Kenya should establish more centres of excellence for girls. This will tap talent among the female gender.

   ii. There is need for the government of Kenya to establish more centres of excellence for boys. This will motivate more male athletes to enrol for training especially in 800 metres.

4. **Establishing behavioural profiles (DISC) of Kenyan elite distance runners in relation to their type of race.**

This study recommends the following:

The Government of Kenya should establish High Altitude Training centres in order to motivate more potential distance runners to enrol for traning. This is likely to increase the numbers in middle and long distance running

5.Determining behavioural profiles of Kenyan elite distance runners based on their marital status.

This study recommends the following:

The Government of Kenya should establish High Altitude training Centres for married athletes. This will motivate more married persons to enrol for participation and competitive running.

6.3.3 Recommendations for Further Study

The recommendations for further research are based on the objectives and findings of the study.

1. **Determining the demographic characteristics of Kenyan elite middle and long distance runners.**

The current study focused on age, gender, type of race and marital status as demographic characteristics. There is need to investigate other variables, such as level of education, experience and socio-economic status in relation to behavioural profiles (DISC).

2. **Determining behavioral profiles (DISC) of Kenyan elite distance runners in relation to their age categories.**

Further research should be conducted on the age categories as in the current study, but using an experimental research design.

3. **Ascertaining behavioural profiles (DISC) of Kenyan elite distance runners in relation to their gender.**

   i. There is need for further research to be conducted on gender and behavioural profiles in other sports.
   ii. Further research should also be conducted on gender and behavioural profiles (DISC) using an experimental research design.

4. **Determining behavioural profiles (DISC) of Kenyan elite distance runners in relation to their type of race.**

   i. There is need to conduct further research on the type of races as used in the current study guided by an experimental research design.
   ii. There is also need to conduct research on other track events in relation to behavioural profiles (DISC).

5. **Determining behavioural profiles of Kenyan elite distance runners based on their marital status.**

   i. Apparently, there is limited or scanty information on married elite middle and long-distance runners. Further investigation should be conducted on married distance-runner athletes in Kenya in relation to behavioural profiles (DISC) in other sport disciplines.

ii. Further investigation should be conducted on married elite middle and long distance runners in relation to behavioural profiles (DISC) using an experimental research design.

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APPENDICES

APPENDIX I : INFORMED CONSENT

My name is Mse Elizabeth. I am a PhD student from Kenyatta University. I am conducting a study on “behavioural profiles of elite Middle and Long- Distance athletes in relation to their demographic characteristic at a selected high altitude training centre in Kenya” The information will be used by the ministry of youth and sports to develop middle and long- distance running.

Procedure to be followed

Participation in this study will require that you respond to statements contained in the questionnaire.

Please remember that participation in this study is voluntary. You have the right to refuse participation in this study. You may ask questions related to the study at any time.

You may refuse to respond or stop to respond to the statements. You may also stop being in the study at any time without any consequences.

Discomfort and Risks

If you feel some of the statements may be embarrassing or make you uncomfortable, you may refuse to respond to them.

Benefits

If you participate in this study, you will become aware of your behaviours as well as other people’s behaviour. You will also be coached according to your behavioural profiles.

Confidentiality

The questionnaire will be administered at the training venues of the athletes. Your name will not be recorded on the questionnaire. The questionnaires will be kept private.

Contact Information

If you have any questions, you may contact Dr Andanje Mwisukha on 0722936588 or Dr Mugalla Bulinda on 0722677266 or the Kenyatta University Ethical Review Committee Chairman. kuerc@ku.ac.ke, secretary. kuercku.ac.ke, ercku2008@gmail.com

Participant's Statement

The above information regarding my participation in the study is clear to me. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will get the same treatment whether I decide to leave the study or not.

Name of Participant………………………………………………………………

……………………………………………………………………………………

Signature or Thumbprint Date……………..

Investigator's Statement

I, the undersigned, have explained to the volunteer in a language she/he understands the procedures to be followed in the study and the benefits involved.

Name of Researcher……………………………………………………….

Signature or Thumbprint Date………………..

APPENDIX II: ATHLETES' QUESTIONNAIRE

SECTION A - DEMOGAPHIC INFORMATION FOR DISTANCE ATHLETES

For each of the items below, indicate by ticking in the spaces provided for the response or reaction:

Indicate your gender

Male ☐

Female ☐

2 Indicate your age from the following

A. 21 years and below ☐

B. 22 – 30 years ☐

C. 31 – 40 years ☐

D. 40 above years ☐

3 Marital status

A. Single ☐

B. Married ☐

4. Which event do you compete in?

A. 800 M ☐

B. 1500M ☐

C. 3000M ☐

D. 3000M St ☐

E. 5000M ☐

F 10000m ☐

SECTION B: QUESTIONNAIRE FOR DISTANCE RUNNERS

Instructions: Using the rating scales below, indicate (by ticking) the degree to which you agree with each of the following statements. Please remember to use the full range of response options to ensure most accurate feedback. SD= Strongly Disagree (5), D=Disagree (4), U=Undecided (3), A= Agree (2) SA= Strongly Agree (1),

DOMINANT PROFILE

	SD	D	U	A	SA
I need details of my training sessions					
I do things in an organized manner.					
I am quick and to the point.					
I am time conscious.					
I prefer relevant information.					
I prefer reading details at my free time.					
I usually set goals in my life.					
I prefer getting support for my ideas.					
I prefer leading others during training.					
I am always comfortable with challenges.					
I prefer rewards for my accomplishments.					
I am result-oriented					
I talk most of the time.					
I do make decisions very fast.					
I am sensitive to my colleagues.					

Instructions: Using the rating scales below, indicate (by ticking) the degree to which you agree with each of the following statements. Please remember to use the full range of response options to ensure most accurate feedback. SD= Strongly Disagree (5), D=Disagree (4), U=Undecided (3), A= Agree (2), SA= Strongly Agree (1

INFLUENCE PROFILE

	SD	D	U	A	SA
I am persuaded when under pressure.					
I am usually in a hurry for training.					
I have a passion to please people.					
I make friends quite easily.					
I do engage other people to achieve goals					
I usually adapt to new approaches.					
I usually persuade others in my team.					
I do seek freedom from routine.					
I ask for support in my training.					
I help others in making decisions.					
I prefer a friendly chat before training.					
I talk to others about training					
I prefer jokes and friendly atmosphere.					
I prefer listening to success stories.					

Instructions: Using the rating scales below, indicate (by ticking) the degree to which you agree with each of the following statements. Please remember to use the full range of response options to ensure most accurate feedback. SD= Strongly Disagree (5), D=Disagree (4) U=Undecided (30, A= Agree (2), SA= Strongly Agree (1)

STEADINESS PROFILE

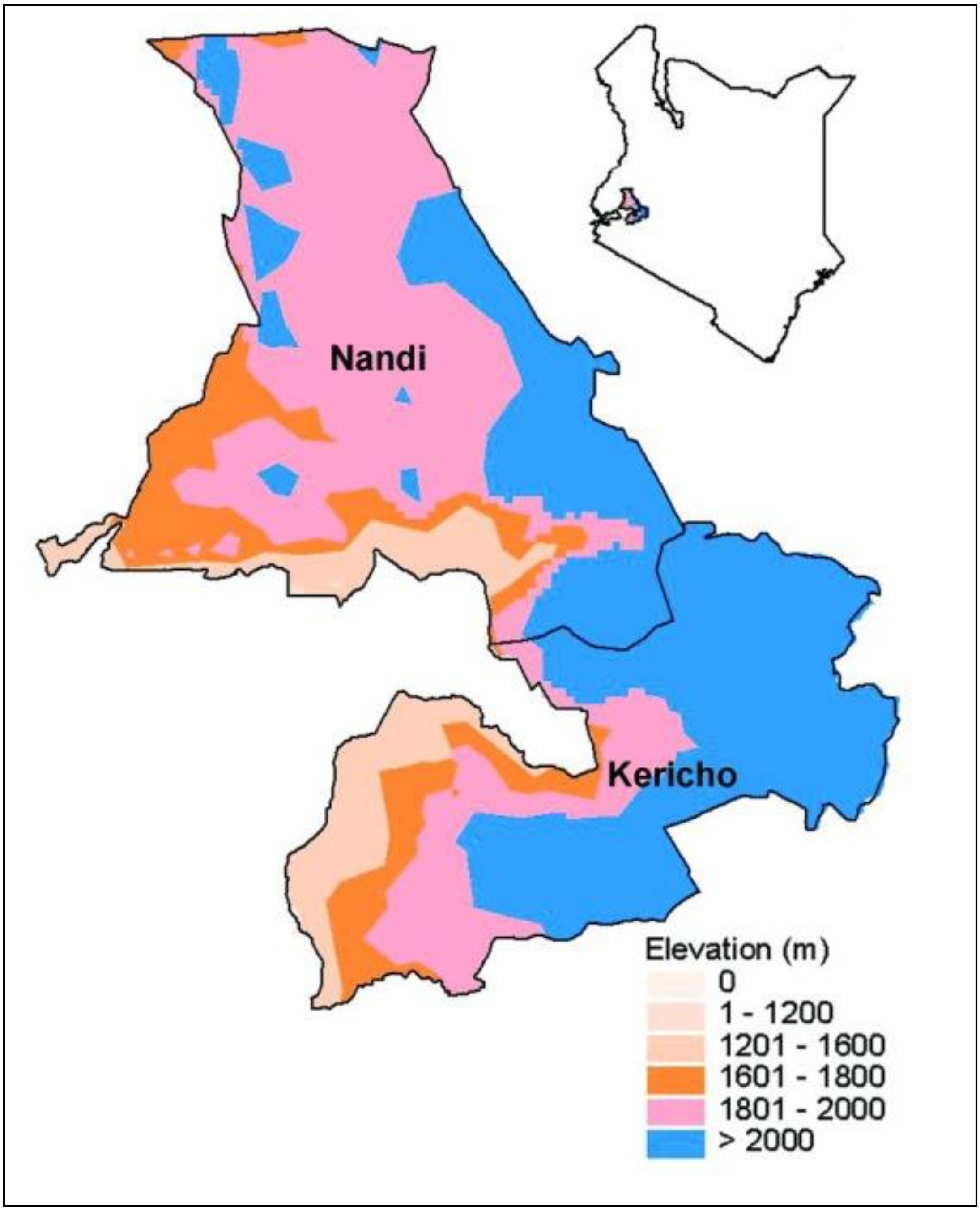
	SD	**D**	**U**	**A**	**SA**
I prefer a friendly training environment.					
I prefer a slower and orderly coach.					
I prefer attention from my coach					
I do not like listening to facts.					
I prefer compliments when training					
I seek opinion from fellow athletes.					
I usually prefer recognition from my coach.					
I prefer communicating with my coach.					
I hate arguments and conflicts.					
I am optimistic of my success.					
I am usually patient with my colleagues.					
I am oversensitive to criticisms.					
I am a keen listener to my coach.					
I balance studies, training and social life.					

Instructions: Using the rating scales below, indicate (by ticking) the degree to which you agree with each of the following statements. Please remember to use the full range of response options to ensure most accurate feedback. SD= Strongly Disagree (5), D=Disagree (4), U=Undecided (3), A= Agree (2), SA= Strongly Agree (1)

COMPLIANT PROFILE

	SD	**D**	**U**	**A**	**SA**
I am usually punctual for training.					
I pay attention to details.					
I follow rules set by the coach.					
I set goals for my training.					
I am usually organized.					
I take time before making decisions.					
I prefer training alone.					
I prefer an opportunity to give suggestions.					
I work with guidelines and timelines.					
I expect to be acknowledged.					
I respect people who honour promises.					
I am mentored by my coach.					
I do things in a perfect manner.					
I am different from my colleagues.					

APPENDIX III: MAP SHOWING ALTITUDE OF NANDI COUNTY



APPENDIX IV: RESEARCH APPROVAL(Graduate School).

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 57530

Internal Memo

FROM: Dean, Graduate School

DATE: 16th January, 2018

TO: Ms. Elizabeth Mse
C/o Rec. Mngt. & Exer. Scie. Dept.
Kenyatta University

REF: H87/13395/09

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that Graduate School Board at its meeting of 10th **January, 2018** approved your Research Proposal for the Ph.D. Degree, **entitled "Behavioural Profiles of Elite Middle and Long Distance Kenyan Athletes in Relation to Their Demographic Characteristics".**

You may now proceed with your Data collection, subject to clearance with the Director General, National commission for Science & Technology.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking Forms per semester. The form has been developed to replace the progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

By copy of this letter, the Registrar (Academic) is hereby requested to grant you substantive registration for your Ph.D. studies.

Thank you.

JACKSON LUVUSI
FOR: DEAN, GRADUATE SCHOOL

c.c. Registrar (Academic) Att. Mr. Likam
Chairman, Department of Recreation Management & Exercise Science

Supervisors:

1. Dr. Andanje Mwisukha
   C/o Dept. Rec. Mngt. & Exer. Science
   KENYATTA UNIVERSITY
2. Dr. Mugala Hannington
   C/o Dept. Physical & Health Education
   KENYATTA UNIVERSITY

JL/cao

APPENDIX V: RESEARCH AUTHORIZATION

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

OUR REF: H87/13395/09

Date:16th January, 2018

The Director, General,
National Commission for Science & Technology
P.O. Box 30623-00100,
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MS. ELIZABETH MSE REG. NO H87/13395/09

I write to introduce **Ms. Mse** who is a Postgraduate Student of this University. She is registered for Ph.D. Degree programme in the **Department of Recreation Management & Exercise Science in the School of Applied Human Sciences.**

Ms. Mse intends to conduct research for a Ph.D. thesis entitled, **"Behavioural Profiles of Elite Middle and Long Distance Kenyan Athletes in Relation to Their Demographic Characteristics".**

Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

AM/cao

APPENDIX V: RESEARCH AUTHORIZATION NACOSTI

NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/18/20855/21016**

Date: **2nd February, 2018**

Elizabeth Mse
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Behavioral profiles of elite middle and long distance Kenyan athletes in relation to their demographic characteristics,"*** I am pleased to inform you that you have been authorized to undertake research in **Nandi County** for the period ending **1st February, 2019.**

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

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

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

Copy to:

The County Commissioner
Nandi County.

The County Director of Education
Nandi County.

National Commission for Science, Technology and Innovation is ISO9001:2008 Certified

APPENDIX VI: RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
MS. ELIZABETH MSE
of KENYATTA UNIVERSITY, 0-50100
Kakamega,has been permitted to
conduct research in *Nandi County*

on the topic: *BEHAVIORAL PROFILES OF ELITE MIDDLE AND LONG DISTANCE KENYAN ATHLETES IN RELATION TO THEIR DEMOGRAPHIC CHARACTERISTICS*

for the period ending:
1st February,2019

Permit No : NACOSTI/P/18/65904/21135
Date Of Issue : 2nd February,2018
Fee Recieved :Ksh 2000

....
Applicant's Signature

....
Director General
National Commission for Science, Technology & Innovation

CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No.A 17357

CONDITIONS: see back page

APPENDIX VII: RESEARCH AUTHORIZATION(Nandi County Government)

THE PRESIDENCY

MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Tel: 053 52621, 52003, Kapsabet
Fax No. 053 – 52503
E-mail:
nandicountycommissioner@gmail.com
When replying, please quote

Ref: No. NC.EDU.4/I VOL.IV/(170)

HARAMBEE

County Commissioner's Office,
Nandi County
P.O. Box 30,
KAPSABET.

4th April, 2018

Elizabeth Mse
Kenyatta University
P.O. Box 43844 - 00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

This is in reference to letter No. NACOSTI/P/18/20855/21016 dated 2nd February, 2018 from the Director General/CEO, National Commission for Science, Technology and Innovation on the above subject matter.

You are hereby authorized to conduct a research on **"Behavioral profiles of elite middle and long distance Kenyan athletes in relation to their demographic characteristics"** in Nandi County for the period ending 1st February, 2019.

Wishing you all the best.

THE COUNTY COMMISSIONER
NANDI.

M.M. BARRE, OGW
COUNTY COMMISSIONER
NANDI.

APPENDIX VIII: RESEARCH AUTHORIZATION(Ministry of Education)

REPUBLIC OF KENYA

MINISTRY OF EDUCATION
STATE DEPARTMENT FOR BASIC EDUCATION

Email: cdenandicounty@yahoo.com
Telephone: 0773044624
When replying please quote

COUNTY DIRECTOR OF EDUCATION,
NANDI
P.O BOX 36 – 30300,
KAPSABET.
4th April, 2018

Ref:NDI/CDE/RESEARCH/1/VOL.II/72

Elizabeth Mse
Kenyatta University,
P.O Box 43844-00100,
NAIROBI.

RE: RESEARCH AUTHORISATION

The above named person has been granted permission by the County Director of Education to carry out research on ***"Behavioral profiles of elite middle and long distance Kenyan athletes in relation to their demographic characteristics,"*** in Nandi County, Kenya for the period ending **1st February, 2019.**

Kindly provide her all necessary support she requires.

For: County Director of Education NANDI COUNTY

Evans Ondara,
For: County Director of Education,
NANDI COUNTY.