

DETERMINANTS OF PARTICIPATION IN PHYSICAL ACTIVITY IN ON-SITE FITNESS CENTRES: THE CASE OF EMPLOYEES AT KENYATTA UNIVERSITY AND AFRICA NAZARENE UNIVERSITY, 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 thesis to my husband Brian Kambizi, my daughter, Mia Anotida Kambizi and my son Kye Anodiwa Kambizi as well as my mother Mrs Locadia Mukaro: the fountain of my inspiration.

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ABBREVIATIONS AND ACRONYMS

ANU:	Africa Nazarene University
CVDs:	Cardiovascular Disease s
HBM:	Health Belief Model
HDL:	High Density Lipoprotein
IPAQ:	International Physical Activity Questionnaire
JKUAT:	Jomo Kenyatta University of Agriculture and Technology
KU:	Kenyatta University
KSh:	Kenyan Shillings
LDL:	Low Density Lipoprotein
NACOSTI:	National Council for Science and Technology
NCDs:	Non-communicable Diseases
PA:	Physical Activity
SDGs:	Sustainable Development Goals
SES:	Socio-Economic Status
SPSS:	Statistical Packages for Social Sciences
UNESCO:	United Nations Educational, Scientific and Cultural Organization.
WHO:	World Health Organization
WHPP:	Workplace Health Promotion Programme

OPERATIONAL DEFINITION OF TERMS

A Casual Employee

A member of staff who is engaged to work for a period of one to three months and whose remuneration is calculated on a wage basis, there is no consistent in the hours of work and is not entitled to notice of termination or redundancy.

A Contract Worker

A worker who has been engaged to work in an institution of higher learning for a period of time, usually one to three years. The contract can be renewed upon the worker performing his or her duties satisfactorily.

A Permanent Employee

A member of staff who has a full set of work entitlements and responsibilities such as housing and transport allowances, medical cover, paid vacations, contribution to a retirement plan, and availability of check off system of payment to subscribe to the on-site fitness centre.

Determinants of Participation

Those factors or aspects that hinder or promote participation in physical activity by staff members in a work site exercise facility.

Exercise

Physical activity that is structured, planned, deliberate and repetitive whose main aim is to achieve fitness and overall body health.

On-site Corporate Fitness Centre

A facility within work station designed to promote health and fitness of the workers through participation in physical activity.

Physical Activity

Any body movement deliberately conducted by members of staff as per the exercise programme or schedule provided at their worksite exercise facility.

Physical Activity Status

An indication of whether one participates in the on-site fitness centre activities or not as per WHO physical activity recommendations or guidelines. Adults aged 18–64 are recommended to do either at least 150 minutes of moderate-intensity aerobic physical activity throughout the week or do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week or an equivalent combination of moderate- and vigorous-intensity activity.

ABSTRACT

Many institutions have invested in health and fitness facilities with the aim of promoting productivity and reducing escalating healthcare cost associated with conditions that result from physical inactivity amongst employees. However, the reported uptake of these services is quite low. This study analysed the determinants of participation in physical activity in on-site fitness centres among employees of Kenyatta University and Africa Nazarene University in Kenya. A cross-sectional analytical design was used to guide the study that targeted 3516 members of staff employed on a permanent or contract basis in the two institutions. A sample of 537 respondents was calculated using Krejcie and Morgan's formula and 10% was added to cater for attrition and unforeseen response. The two institutions were purposively selected to represent institutions with well-equipped fitness centres which render services to their staff members, students and the surrounding communities, as well as to represent public and private institutions. Stratified random sampling was used to come up with three strata (management, teaching staff and non-teaching staff) since the population did not constitute a homogeneous group. Systematic sampling was used to sample the participants in the different strata. A closed-ended questionnaire, an interview guide and observation checklist were used for data collection. The content validity of the questionnaire was validated by the experts from the department of Recreation Management and Exercise Science of Kenyatta University. Statistical Package for Social Sciences (SPSS) version 20.0 was used for data coding and analysis. Descriptive statistics, Mann-Whitney U test and the Kruskal-Wallis one-way analysis of variance were used to analyse data at .05 level of significance. Kruskal Wallis Post hoc test was used to test any significant differences after significant H-tests. The study found that some university employees (25%) were physically active and 75% were less physically active ($M = 38.20$). There was a significant difference in the status of participation in PA between the two universities ($p < 0.001$). The Mann-Whitney U test results showed that there were significant differences in the psychological ($p < .001$), environmental ($p < .001$), health ($p = .001$), employment ($p = .001$) and operational ($p < .001$) determinants of participation in PA in on-site fitness centres in the two universities. The Kruskal Wallis test showed significant differences in the emotional ($p = .023$), psychological ($p = .021$), environmental ($p = .004$) and operational ($p = .001$) determinants of participation in PA in on-site fitness centres across different job categories. The Binary Logistics Regression analysis showed the self-rating ($p = .001$), health ($p = .001$) and the operational ($p = .007$) determinants to be the significant predictor variables. Based on the study findings, this study concluded that majority of employees are not physically active in the on-site fitness centres and that self-rating, health and operational determinants made a significant contribution in predicting participation in PA. It was, therefore, recommended that the on-site fitness centres should have a system of compensating for unused days one would have paid for but missed. The university employees should be educated to be concerned about their wellbeing and the need of spending some time engaging in physical activity, and that fitness packages should be equally available for all employees.

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

Humanity world-over is dealing with all kinds of non-communicable diseases (NCDs) such as obesity, diabetes, cardiovascular diseases, and cancer (Mason & McGinnis, 1990); (Lee et al., 2012). More than 50% of all deaths globally are as a result of NCDs, which present a higher risk to health in most developing countries (Yach, Kellogg, & Voute, 2005). In developing countries, the mortality rate from cardiovascular diseases (CVDs) is twice as much as in developed countries (Yach et al., 2005). As a result, the economy in these developing countries is drastically crumbling as the working age population is being incapacitated and exterminated thus compromising productivity and consequently debilitating economic growth (Leeder, Raymond, Greenberg, Liu, & Esson, 2004).

In Sub-Saharan Africa, factors such as increasing urbanisation, globalisation, poverty, changing lifestyle and absence of government interventions for the prevention of CVD attributes to the NCDs burden (de-Graft Aikins et al., 2010). Among many causes of NCDs, are four modifiable ones which include smoking, excessive alcohol consumption, low physical activity (PA) and poor diet (de-Graft Aikins et al., 2010).

Non-communicable diseases are costly and debilitating, and they result in unhealthy employees who may be unproductive, more absent, and may retire early (Scotland, n.d.). As a result, institutions have to set apart money to take care of their ailing employees under the staff medical cover. On the contrary, physically active

employees are more energetic, healthier, cheerful and more inspired to serve their institutions (Joubert, 2012).

Quitting the use of alcohol and smoking is usually difficult for individuals who are addicted to them as they end up experiencing physical withdrawal symptoms, causing the person to want to smoke or drink alcohol again (Borland, Partos, Yong, Cummings, & Hyland, 2012). According to Seguin, Connor, Nelson, La Croix and Eldridge (2014), the unhealthy food is so readily available such that getting healthy food is viewed as time-consuming and expensive by most people. Low PA is the dominant chronic disease risk factor and the most crucial amendable factor (Esteghamati et al., 2011; Farrell, Hollingsworth, Propper, & Shields, 2013; Scarborough et al., 2011). To maintain a healthy body even after eating a healthy meal and staying away from smoking and excess alcohol consumption, the consumed calories need to be expended through participating in PA. More so, engaging in physical activity is not expensive especially when it is done outdoors, for instance, walking.

The increase in employees' participation in PA would help mitigate on the number of deaths that are due to ailments related to physical inactivity (Allender, Foster, Scarborough, & Rayner, 2007; WHO, 2002). Physical inactivity has negative financial implications for the national economy and humanity (Scherrer, Sheridan, Sibson, Ryan, & Henley, 2010). To address the anticipated challenges globally, the United Nations set the Sustainable Development Goals, and the third goal is to ensure good health and wellbeing for everyone in the world. At the corporate level, there has been provision of well-equipped fitness centres for the staff, students and

the community as a whole, all in an attempt to increase PA as a way of preventing and managing health conditions related to physical inactivity.

Regular participation in PA has rehabilitative and preventative effects on many NCDs and other health disorders (Joubert & Grobler, 2015). For instance, participation in regular PA causes the vascular smooth muscles to become strong, consequently increasing their capacity to withstand any amount of force exerted upon them thus efficiently reducing high blood pressure (Newcomer, Thijssen, & Green, 2011). A considerable amount of PA lowers systemic vascular resistance, which will result in the reduction of chances of getting CVDs (Fagard & Cornelissen, 2007). In addition, PA increases insulin sensitivity, reduces glucose intolerance and postprandial hyperglycaemia, thus reducing the likelihood of developing type II diabetes mellitus to individuals who are prone to it (Turcotte & Fisher, 2008). To maintain cardiovascular health, PA considerably reduces the amount of low-density lipoprotein (LDL) cholesterol and boosts high-density lipoprotein (HDL) cholesterol, thus displaying a primary positive result on blood lipid concentration (Buttar, Li, & Ravi, 2005).

Higher income is believed to have a negative correlation with PA. In most cases, highly paid workers trade-off their leisure time with work because they earn higher hourly wages, leading to physical inactivity (Cheah & Poh, 2014; Humphreys & Ruseski, 2011). However, other studies have reported that those people from a higher socio-economic status (SES) have a higher chance of participating in PA than those from a lower socio-economic status (Eime, Harvey, Craike, Symons, & Payne, 2013; Federico, Falese, Marandola, & Capelli, 2013). Education has also been

shown to have an inverse relationship with the amount of time individuals spend engaging in PA.

As the level of education increases, there is an increase in the reduction in time participating in PA due to fixed work programmes (Cheah & Poh, 2014; Mayer, Nuzzo, & Dagenais, 2013).

Kenyatta University (KU) is a state or public university with a staff complement of 3281 permanent and contractual employees (Kenya University Human Resources Records, 2017). According to Kenya University Gymnasium membership attendance register (2016), out of 3281 employees, 13 of them use the two fitness centres which translate to about 0.4% and a few members of staff in the sport related Departments. At Africa Nazarene University (ANU) out of 235 permanent and contractual employees, 15 (6.4%) of them utilise the fitness centre (membership attendance register, 2016). This low number of employees who subscribe to participate in PA programmes in the on-site fitness facilities points to a general underutilization of the facilities. Therefore, this inquiry sought to identify the factors that affect participation in PA at workplace fitness centres to help design necessary interventions for future programs.

1.2 Problem Statement

Lack of physical activity predisposes individuals to NCDs, yet PA is among the common modifiable risk factors. To reverse the effects of physical inactivity, private and public institutions are providing on-site fitness centres to their employees to motivate them to participate in PA in the comfort of their working stations. Institutions of higher learning where we have the greatest concentration of

intellectual assets of a nation with the examples of Kenyatta and Africa Nazarene universities have not been left behind in this endeavour. These intellectuals are there to drive the economy, for development agenda as well as to realise the sustainable development goals thus enhancing their participation in PA would essentially curb the economic and intellectual loss to the nation as a result of NCDs due to physical inactivity (Pinto et al, 2014: UNESCO, 2006).

Data from Kenyatta and Africa Nazarene university onsite fitness centres' records pointed towards reduced physical activity whereby only 0.4% and 6.4% from KU and ANU respectively were using the on-site fitness centres. This indicated that perhaps 99.6% of employees from Kenyatta University and 93.6% of employees from Africa Nazarene are physically inactive in the on-site fitness centres hence they could be at risk of suffering from NCDs if they are not using alternative physical activity facilities outside the university. Therefore, it was against this background that this study was carried out to identify factors that hindered the full utilisation of the on-site fitness centres. This may provide opportunities to promote participation in PA by employees at onsite fitness centres with the aim of preventing and or managing NCDs for those who may be affected or are already affected. This may in the long run enhance productivity and reduce the escalated health cost at the institutional level. The university sector was also chosen for the study because in Africa and specifically in Kenya literature on university employees' status and determinants of participation in PA is limited (Onywera et al, 2012). More so, institutions of higher education tend to pay much attention to the well-being of their students and less focus is put on the welfare of the employees (Hanson, 2013).

1.3 Purpose of the study

The purpose of this study was to analyse the factors that influence employee participation in physical activity at the fitness centres established within their workstations. The identified workstations for this study were Kenyatta University and Africa Nazarene University.

1.4 Objectives of the study

The study was guided by the following objectives:

- i. To ascertain the status of employees' participation in physical activity in on-site fitness centres in the two universities as per the recommendations of the World Health Organisation.
- ii. To compare the status of employees' participation in physical activity in on-site fitness centres in the two universities.
- iii. To identify the determinants of employees' participation in physical activity in on-site fitness centres in the two universities.
- iv. To compare the determinants of participation in physical activity in on-site fitness centres by employees between the two universities.
- v. To compare the determinants of participation in physical activity in on-site fitness centres across different job categories of the university employees.
- vi. To compare the influence of each of the determinants of participation in physical activity in on-site fitness centres on university employees.

1.5 Research Questions

1. What is the status of employees' participation in physical activity at the on-site fitness centres in the two universities?

2. What are the determinants of employees' participation in physical activity at the on-site fitness centres in the two universities?

1.6 Hypotheses

- H₀₁ There is no significant difference in the status of employees' participation in physical activity at the on-site fitness centres between the two universities.
- H₀₂ There is no significant difference in the determinants of employees' participation in physical activity at the on-site fitness centres between the two universities.
- H₀₃ There is no significant difference in the determinants of employees' participation in physical activity at the on-site fitness centres among different job categories.
- H₀₄ There is no significant difference in the influence of each of the determinants of participation in PA in on-site fitness centres on university employees

1.7 Significance of the study

Research on the status and determinants of participation in PA particularly within the workplace setting is limited especially in Africa (Edmunds, Hurst, & Harvey, 2013; Onywera et al., 2012). Most of the available literature focuses on Western setting hence portraying a wrong African context, and this study sought to bridge that gap. The findings of the current study may help the employers to understand the different barriers faced by employees on the use of on-site fitness centres, and the employer will be able to adjust or develop strategies that enhance and or promote participation in physical fitness programmes provided within the work settings.

Findings on determinants of participation in PA by employees will help the employer in designing appropriate interventions geared towards promoting participation in PA using fitness facilities provided within worksites.

1.8 Delimitations

This study was delimited to Kenyatta University and Africa Nazarene University permanent and contractual employees only and shall not be generalised to other institutions. The study was also delimited to on-site participation in PA, yet some employees might have been attending community fitness centres or other facilities available to them for PA.

1.9 Limitations

The focus of this study was on permanently and contractually employed individuals only, yet the casual employees form the main workforce, and their health may be at risk thus compromising their productivity also. More so, the data collection was exclusively by self-reports of PA by employees hence there was a likelihood of the participants either under-reporting or over-reporting on their participation in PA in the on-site fitness centre. In addition, most respondents reported that they engage in PA outside the campus, which was not verifiable since there was no mechanism to follow them up while outside the institution.

1.10 Theoretical Framework

The Health Belief Model (HBM) is an intellectual model which tends to justify human behaviour as an action controlled by how much one believes their well-being is endangered (Becker, 1974; Hochbaum, 1958; Rosenstock 1966; Sharma & Romas, 2012).

The HBM was selected for it sheds light on the rationale that some people may choose to participate in PA for the improvement of their wellbeing or protection opportunities if they:

1. Feel that there is a way to evade an adverse health condition like NCDs.
2. Are hopeful that by engaging in advised action they will circumvent an adverse health condition, for instance by engaging in PA they may delay the onset of NCDs.
3. Believe that they can effectively embark on a recommended health action like participating in on-site fitness programmes.

Participation in PA is a behaviour which is determined by certain beliefs such as the health benefits attained; reducing health-related risks, as a pass time hobby or as a way to spend excess money. The resolution and enthusiasm to engage in PA can be influenced by socio-economic, psychological, environmental, job and operational factors such as one's gender, age, time, policies, service quality and self-perceived health status. Hence the individual knows that either way, their income will have to be used for hospital bills or other charges related to PA.

1.11 Conceptual framework

The conceptual framework posits that there are six independent variables of which three of them emanated from the demand side while the other three emanated from the supply side. The university employees are in demand of the services which are supplied by the university fitness centres. However, even if the employees are demanding for the use of the on-site fitness centres there are some factors such as the psychological, social, environmental and operational factors that either facilitate

or hinder one's participation in PA. As a result it affects one's status of participation in PA. These independent variables influenced an individuals' participation in physical activity in on-site fitness centres.

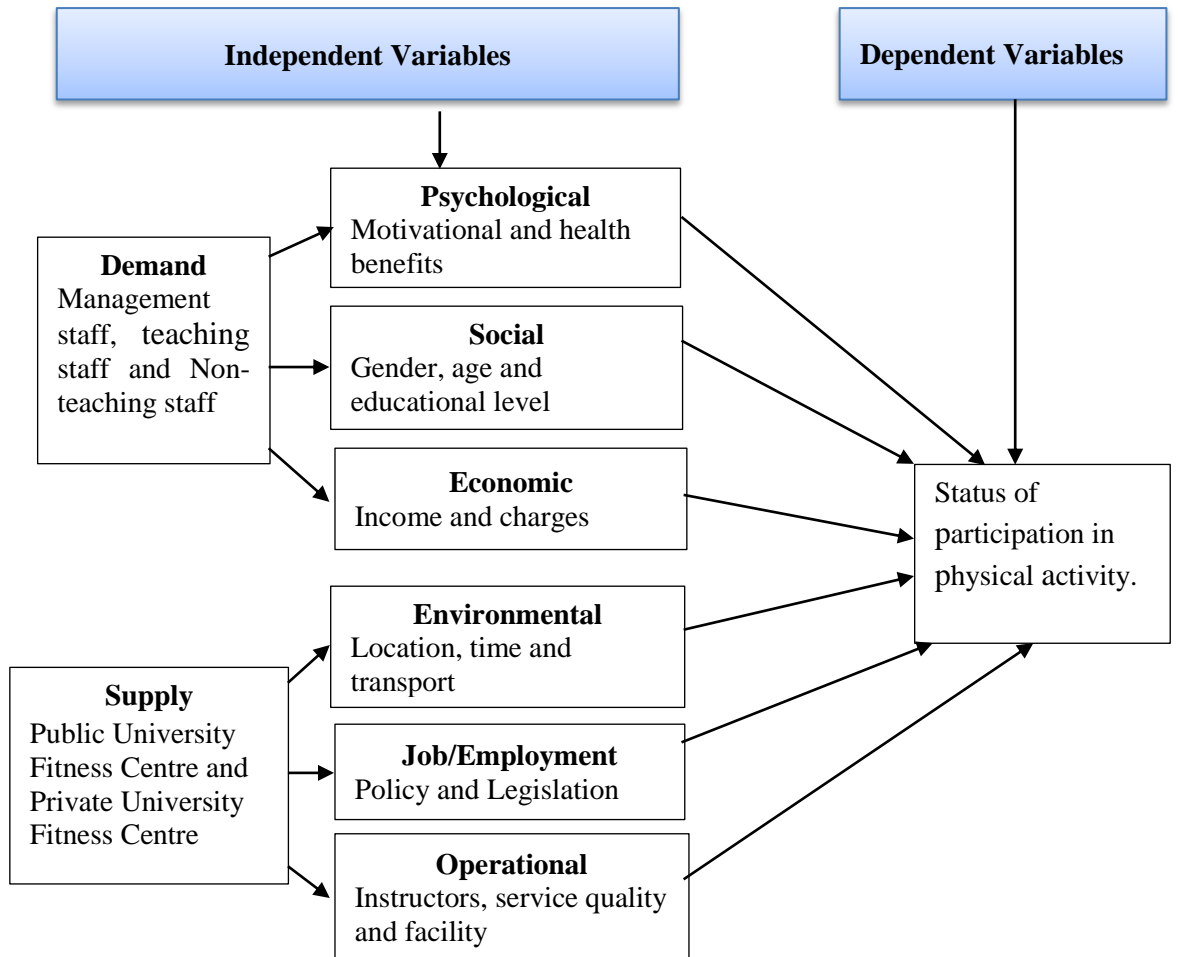


Figure 1.1: Conceptual Framework Model on the Relationship between Determinants and the Status of Participation in Physical Activity.

The model is researcher's own position on the issues based on information from Ajibua, et al., (2012), Edmunds, et al., (2013) and Idowu, et al., (2015).

CHAPTER TWO: LITERATURE REVIEW

2.1 Physical Activity for Adult Population

The adult population does have a need to engage in PA so as to prevent or manage health-related illnesses. According to the American College of Sports Medicine (Haskell et al., 2007), the recommended physical activity for an adult individual is at least 150 minutes a week of moderate activity. However, Sparling et al (2015) opine that PA for an adult population of more than sixty-four years of age finds it difficult to accomplish this level of activity. Hence, they are encouraged to increase their level of activity by small amounts rather than focus on the recommended levels.

2.2 On-site Fitness Centres

World over there is a growing trend for employers offering health-related facilities and programmes to their employees as a way of helping them to overcome the affliction of lifestyle-related illness and increase worker productivity (Badland & Schofield, 2003). According to Brown et al., (2014) on-site fitness centres may facilitate PA engagement by offering convenience and reduced employee membership costs. However, Hunter et al.,(2018) opine that the effectiveness of university-specific workplace interventions to develop long-term employee PA participation and health is not known. The university on-site fitness centres programmes play an important role in exposing students, the employees and health care consumers, to positive health modelling (Das, Rinaldi-miles, & Evans, 2013).

2.3 Status of Participation in Physical Activity

The environment, social-economic, psychological and job set up influence an individual's level of involvement in PA, thus resulting in one being inactive, less-active, moderately active or highly active depending on the intensity and frequency of PA. In a study by Cooper and Barton (2016), on PA and well-being of 502 university employees in the UK males were found to be more active than females although the difference was not statistically significant.

Biernat (2015) studied 373 employees from randomly selected institutions and used the short version of International Physical Activity Questionnaire (IPAQ) to collect data. The results of his study showed that one's level of education had no assurance on one's ability to take care of him or herself. Thus the level of education was found not to be a determinant of participation in physical activity. The study also reported that manual labourers had a higher level of physical activity followed by administrators and the technicians had a very low level of physical activity. This implies that being better educated does not guarantee one's engagement in PA to avoid an adverse health condition.

Cooper and Barton (2016) used a survey and focus group methods on a sample size of 502, to examine the PA levels and mental wellbeing of particular UK university employees as well as the hindrances and motivations for engaging in workplace PA through staff e-mails. The study found out that non-teaching staff were more active than teaching staff.

This was contrary to what Agha and Al-Dabbagh (2010) found in their research on 539 respondents in Iraq, in which they used the short form of IPAQ. The members of the teaching staff recorded higher levels of participation in PA than the support staff. However, the sample included teaching staff from various institutions such as the primary and secondary schools and one university. Thus the results cannot be relied on because of the diversified nature of the sample. These results may be biased given the job description of school teachers especially the primary school teachers, whose mandate in most cases is to teach physical education at least once a week.

Umeifekwem and Onyechi (2014) conducted a descriptive study on 600 university employees in Nigeria to evaluate the prevalence of PA readiness and their participation behaviours. The results showed that regardless of gender and staff categories most staff members were at the pre-adoption or pre-action stages, meaning that most employees were either not participating in PA at all or not frequently participating in PA.

In a study by Samson-Akpan, Eyo and Joshua (2013) whose aim was to establish the perception of teaching staff on the importance of physical activity for healthy living, as well as to find out how much PA they were involved in. The study was conducted in two universities in Cross River State, Nigeria with 400 teaching staff. Although the participants showed a high opinion that PA improves healthy living, the actual status of participation in PA by all the 400 teaching staff was extremely low.

Mwangi and Rintaugu (2017) conducted a cross-sectional study on 237 employees from a Kenyan public university. The study focused on the physical activity and health-related physical fitness attributes of the university employees. The results revealed that 40.08% of employees were either moderately or vigorously physically active. Of the 40.08% who were physically active 26.16% of them were active inside the university, and 28.27% were active outside the university.

2.4 Factors that Determine Participation in Physical Activity by Employees

Some factors such as social, economic, psychological, environmental, and operational and employment policies determine one's participation in PA. These factors may either hinder or facilitate one's involvement in PA (Deliens, Deforche, De Bourdeaudhuij, & Clarys, 2015).

2.4.1 The Socio-Demographic Determinants that Affect Employee Participation

An individual's PA status is most likely to be influenced by one's age, gender, marital status, income, job characteristics and education. According to Cheah and Poh (2014), the status of participation in PA by the intellectuals, highly paid employees, females, single parents, the unemployed and those people without hypercholesterolemia is usually lower than that of their counterparts.

Income is assumed to be a significant contributing factor to participation in PA and sport (Humphreys & Ruseski, 2007). High income is believed to have a negative correlation with PA. Cheah and Poh (2014) and Humphreys and Ruseski (2011) agree that in most cases highly paid workers trade-off their leisure time with work because they earn higher hourly wages, leading to physical inactivity. More so, education has an inverse relationship with the number of time individuals spend

engaging in PA because as the level of education increases the amount of time one spends participating in physical activity decreases (Cheah & Poh, 2014).

Edmunds et al. (2013) investigated the causes for non-participation in PA intervention programmes by employees at a call centre in the United Kingdom. The study involved only 16 participants out of 700 and the grounded theory approach to analyse the transcripts was used. The investigation revealed that though having been offered a free gym facility at the workplace, employees failed to utilise it due to low self-efficacy for exercise. The study used a small number of participants which made it a non-representative sample. However, the current study used a sample size of 499 which is representative of the entire population.

In 2013, Ajibua, Olorunsola and Alla assessed the factors that make participation in PA by employees from a higher institution of learning in Nigeria difficult. The observed challenges included irrelevant programmes and lack of interest from the employers. The study established that an environment which is conducive and encouragement from the employer would motivate employees to engage in regular and beneficial PA activities. The population of the above study was assumed to be the same as of the present study and the conclusion was the basis of the current study.

Frantz and Ngambare (2013) assessed the PA levels and PA health promotion strategies of 102 physiotherapists in Rwanda. Data were collected using questionnaires and focus group discussion. The results showed that the PA status of the participants was affected by cultural orientation.

Mailey, Huberty, Dinkel and McAuley (2014) explored factors that affect participation in PA among working parents in America and the results indicated that family obligations, remorse and lack of support were some of the barriers that hindered their participation in PA. The study concluded that despite gender, working parents are hampered by the same barriers to being physically active. This study shared the similar population group with the current study and it used both qualitative and quantitative methods.

Eime, Charity, Harvey and Payne (2015) conducted a survey to study the association of participation in PA with socio-economic status and geographical remoteness. The findings revealed that a positive association existed between higher SES and higher participation in PA. The current study was a case of two universities which offer the same environment for participating in PA for their staff members.

Keegan, Middleton, Henderson and Girling (2016) audited the social factors leading to participating in PA or sedentariness in work-aged adults. Work aged adults were motivated by family members, friends, colleagues, health care professionals and employers to participate in PA. The study used stratified sampling technique and the current study also used the same sampling method. The study only pursued to find out socio-environmental factors while the present study sought to investigate a wide range of these factors, which include psychological, operational, social, health environmental and job/legal factors.

2.4.2 The Health Determinants that Affect Employee Participation

The health condition of an individual also plays an important role in one's decision to participate in PA. According to Das et al (2013), in most cases once an individual believes that they have a risk of suffering from a non-communicable disease, they are prompted to participate in PA.

Health also influences the amount of time put aside for physical activity. An individual in better health condition is most likely to spend more time participating in physical activity (Humphreys & Ruseski, 2011). The current study assessed the determinants of participation in PA and across different categories of university employees between the two universities.

Bethancourt, Rosenberg, Beatty and Arterburn (2014) randomly selected fifty- two participants for focus group interviews, on hindrances and catalysts of PA programme among the elderly population. The results indicated that poor health condition and lack of adequate information hindered the elderly population from engaging in PA. Enthusiasm to sustain the physical and mental health and access to inexpensive, appropriate, and exciting PA options were reported to be the catalysts for PA. Even though, the current study used randomly selected participants from different strata, they represented the population.

2.4.3 The Psychological Determinants that Affect Employee Participation

Several modifiable and non-modifiable mental aspects such as self-efficacy, social encouragement, supposed obstacles, advantages and satisfaction, perceived health,

health anxiety, and perceived value of health also influence participation in PA (Nishida, Suzuki, Wangi, & Kira, 2003).

Siddiqi, Tiro and Shuval (2011) reviewed factors hindering participation in PA among African-American adults. The results indicated that exhaustion, inadequate inspiration or self-efficacy affected participation in physical activity. The study concluded that interventions should focus on the multiple obstructions that are being faced by African Americans. This study was secondary research because it was a systematic review of articles while the current study was primary research because data was freshly gathered for this study.

Mayer et al. (2013) investigated the role of psychological factors on participation in PA by fire-fighters from the United States of America. The study purpose was to explore the possible causes for fire-fighters not fully adhering to exercise therapy provided to them at work for refining trunk endurance. The sample size was twenty seven (27). The study employed qualitative research design, and the findings revealed that fire-fighters lacked self-motivation and support from colleagues to participate in PA. The study concluded that future research should highlight the advantages of exercising to the participants and award those who would have fully adhered to the activities.

Borodulin et al., (2015) carried out a cross-sectional study on 9581 working-aged adults in Finland. The study aimed to have a better appreciation on the reasons behind the barriers of leisure-time physical activity using quantitative methods. Lack of motivation was one of the findings from the study. The study concluded that differences between demographic subgroups are essential when planning and

implementing strategies to encourage PA in the general populace. The current study used both quantitative and qualitative methods.

2.4.4 The Operational Determinants that Affect Employee Participation

The appearance of the training facility and the quality of service one receives from the service provider influences an individual's choice to participate in PA. Ajibua et al. (2013) used purposive random sampling to select 400 participants, to analyse the challenges that are encountered by employees of higher institutions when they are participation in PA at the workplace. Unavailability of competent leisure service managers and unappealing facilities were some of the findings. The study concluded that the environment conducive and encouragement from the employer would motivate employees to engage in regular and beneficial PA.

Keegan et al., (2016) also assessed the environmental factors that result in one participating in PA or sedentariness in fifteen work-aged adults in the United Kingdom. The state of the gym facility and the instructors either motivated or demotivated one to engage in PA. Cooper & Barton (2016) investigated PA status and mental wellbeing as well as factors that influence workplace PA of 502 university employees at one United Kingdom University. The study found that most participants indicated that they are not interested in using the workplace facility because of high charges (26.5%), unappealing showering facilities (14.6%) and not enjoying the workouts (6.2%).

Das et al (2013) conducted a pilot study on ten (10) university employees in the United States of America, to find out their perceptions of barriers and advantages of workplace PA. The Nominal Group Technique and HBM were used for the focus

group discussion with ten staff members of both sexes. One of the barriers identified in this study was lack of access to and choices in facilities.

2.4.5 The Environmental Determinants that Affect Employee Participation

Individuals do not live in isolation, but in an environment that both shape behaviour and personal understanding, therefore, participation in PA can be profoundly influenced by this environment. Before engaging in PA, most individuals look at certain environmental aspects such as aesthetic features, safety, facility availability, weather conditions and time. According to Humpel, Owen, and Leslie (2002), PA behaviour was found to be considerably linked with the accessibility of the venue, opportunities and aesthetic attributes.

Siddiqi et al. (2011) also found that the individuals were restricted to be physically active due to time shortage, fixed work programme. Apart from psychological barriers Mayer et al. (2013) also qualitatively examined environmental aspects that are harmful to participation in PA. The results included inadequate time for training during working hours. The study concluded that future studies should consider scheduling exercise during each work shift. However, this study was done in an entirely different location using mixed methodology.

Apart from analysing the role of socio-economic and psychological factors affecting PA Edmunds et al. (2013), also examined the environmental factors. The results showed that there were environmental barriers that affect PA. For instance, lack of time, the gym's physical layout, the gym equipment being not state of the art and limited room for exercise classes. The study concluded that cutting-edge equipment

leads to increased attendance. The fitness centre managers are encouraged to think innovatively of distinctive and engrossing activities to attract more people.

Bardus, Blake, Lloyd, and Suggs (2014), examined the environmental barriers that affect PA and the results showed that many respondents reported lack of time as an obstacle. The conclusion was that programme registration procedures should not be time-consuming so that there is reduced burden on participants and early attrition is minimised and also that the employer should find ways to actively promote Workplace Health Promotion Programmes (WHPPs) to their staff while also maintaining confidentiality and individual rights on employees so that larger segments of the workforce can be reached.

Different studies were reviewed by Kelly et al. (2016) and the results revealed inadequate time due to other commitments, inaccessibility of the facilities and restrictions in the physical environment as barriers to healthy behaviour. The conclusion was that the recognised barriers could influence the designed interventions. However, all the evidence from the reports was from developed countries and nothing from developing countries. Hence the current study seeks to find the barriers in an African perspective using primary data.

George et al. (2014) sought to seek male perception on PA and sedentary time on 15 male university workers ranging between the age of 35 to 65 years in Australia. They found out that the male university employees cited lack of time due to work pressure, long commutes as well as family commitments as a hindrance to their participation in PA. The sample size of this study was not a true representative of the

entire study population. Das et al., (2013) also analysed environmental barriers to participation in PA. The results revealed that both teaching and non-teaching staff reported lack of time and inflexible work schedules as the main barriers to participating in PA.

Cooper and Barton (2016) also analysed environmental determinants and found out that majority of the research participants (64.9%) reported having no time for PA during the working day due to the same reasons as indicated in the report by George et al. (2014). Das et al. (2014) also found out that university employees reported inadequate time and fixed work programmes as some of the barriers to their participation in PA.

2.4.6 Job/Employment Policy Determinants

According to Ajibua et al. (2013), a new policy in Nigeria requires that government approval will only be given to those tertiary institutions with modern sporting facilities. A mandatory sports day that the employer observes for staff and students to engage in PA for the betterment of the community was also enforced in the country. Participants were drawn from five public institutions. However, this study intends to bring participants from both government and privately owned institutions.

Matson-Koffman, Brownstein, Neiner, and Greaney (2005) reviewed experimental and quasi-experimental studies and found interventions such as encouragement to increase staircase use, the offering of physical education in schools with qualified teachers and increased time for physical activities. Inclusive worksite methods

comprising training, employee and peer encouragement for PA and motivations provide the most reliable evidence for influencing PA.

2.5 Summary of Literature Review

Grounded on the literature review, it is apparent that a lot of people have a low PA status as they do not meet the WHO recommendations of at least 150 minutes workout for five days a week. The gathered evidence reveals that there are a lot of factors that hinder employee participation in PA.

The focus of this study was on the gaps that were identified from the literature review. The literature review revealed that much documentation had not been done on participation in PA in Africa (Onywera et al., 2012). Moreover, most literature was from short-term physical activity programmes. Therefore there is a need to fill these gaps in determining the factors that influence employee participation status in PA. This study aims to assess PA status and determinants of participation in PA among employees of a public university and a private university and compare these determinants.

CHAPTER THREE: METHODOLOGY

3.1 Research Design

The study used a cross-sectional analytical design to analyse the factors that influence employee participation in physical activity in fitness centres established within their workstations. A cross-sectional analytical design is a study that scrutinises data from either a population or a representative sample at a specific point in time (Schoenbach, 1999). The study design was chosen because it can be used to study the entire population or a representative sample and it also has a greater generalizability.

3.2 Measurement of Variables

The independent variables of the study were the determinants of participation in physical activity such as socio-economic, psychological, environmental, operational and employment policies. The dependent variable was participation in PA.

3.3 Study Area

The study was conducted in two different universities namely Kenyatta University and Africa Nazarene University in Kenya.

3.3.1 Kenyatta University

Kenyatta University was chosen for the study because of the top rankings in terms of student sports participation, the study wanted to find out if engaging in PA and exercise was a culture at the institution. More so, the institution has well-established fitness centres for both the employees, students and the community at large. Kenyatta University is a public university located along Thika Road in Kiambu

County about 18 kilometres northeast of Nairobi city centre, the capital of Kenya along the Nairobi-Thika superhighway, with a total area of 445 hectares of land. The university has a total of 3,281 permanent and contractual employees. The university has 2,189 non-teaching employees and 1,092 teaching employees. The top management has ten employees who are part of the teaching staff and one who is a part of the non-teaching staff.

The university has eighteen schools, and one of these schools has two departments whose mandate is to deal with physical activity and exercise, which are the Recreation Management and Exercise Science department and the Physical Education and Health department. The university has many sporting facilities and infrastructure. These include; football, netball, rugby pitches, tennis and basketball courts, a swimming pool as well as four gymnasiums within the main campus. There is the management gymnasium, the alumni gymnasium, the student gymnasium and the staff gymnasium.

3.3.2 Africa Nazarene University

Africa Nazarene University was also chosen for the study because it has well established fitness centre which is open to the employees, students and the community. Africa Nazarene University is an American private Christian institution found next to the Nairobi National Park in the Masai savannah, off Magadi Road near Ongata Rongai Town, approximately 24km south of Nairobi. There are 235 employees in total with 176 non-teaching employees and 59 teaching employees. The university has two campuses the main campus near Rongai Town and the Nairobi Central Business Campus and three schools namely Law school, Business

school and Governance, Peace and Security school. The university has basketball, volleyball, netball and handball courts, football, softball and rugby fields as well as a gymnasium.

3.4 Target Population

The target population in this study was 3516 male and female members of staff employed either on permanent or contractual basis across all levels of designation (managerial, teaching and clerical). The participants were stratified according to their level of employment and then selected using simple random sampling method from the two universities. The study used these employees because of the assumption that they would remain at the institution for a long time while casual employees may change their job location from time to time. More so, it is this category of employees that the employer focuses regarding health, providing them with medical aid cover for both inpatient and outpatient. Thus institutions spend a lot of money on their health which is related to physical inactivity, unlike the casual workers who are not covered in any way on the above benefits. Therefore, if barriers for participation in PA can be identified, and addressed they may, in the long run, have positive implications on health and well-being of the employees, consequently reducing the institutional expenditure on health (Bright et al., 2012).

3.4.1 Inclusion criteria

The study included both male and female permanent and contract members of staff who had worked at the institution for at least one year.

3.4.2 Exclusion Criteria

Those employees who had been on extended leave six months before the study, who had injuries or disability were not included in the study. Furthermore, employees with chronic medical conditions and undergoing clinical management such as renal dialysis, chemotherapy or radiotherapy were excluded from the study as the treatment might have impaired their ability to do physical activity due to fatigue. To eliminate those employees who were undergoing clinical management after having explained the nature of the study participants were asked if they had the doctor's referral letter or some contraindications to participation in PA. If their response was positive then they were excluded from participating in the study.

3.5 Sample Size

The sample size representative of the university employees in this study was 489. The sample size was drawn proportionally from each stratum using Krejcie and Morgan's (1970) formula as follows:

$$S = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

Where:

S = required sample size.

X = the table value of chi-square for 1 degree of freedom at the desired confidence level (0.05 = 3.841).

N = the population size.

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (0.05).

Sample size calculation for Kenyatta University;

$$S = \frac{(1.96)^2(3281)(0.5)(1-0.5)}{(0.05)^2(3281-1) + (1.96)^2(0.5)(1-0.5)}$$

$$= 343$$

Sample size calculation for Africa Nazarene University;

$$S = \frac{(1.96)^2(235)(0.5)(1-0.5)}{(0.05)^2(235-1) + (1.96)^2(0.5)(1-0.5)}$$

$$= 146$$

Each university had its sample size calculated using the same formula, and 10% was added to the sample to cater for attrition and unforeseen nonresponse. The sample size totalled to 537 participants/ respondents. Out of this number, 376 were from Kenyatta University while 161 were from Africa Nazarene University. Krejcie and Morgan (1970) stated that as the population increases the sample size increases at a diminishing rate and remains relatively constant at slightly more than 380 cases.

3.6 Sampling Techniques

The study employed several sampling methods; purposive sampling, stratified random sampling, systematic random sampling and simple random sampling techniques to select the participants.

3.6.1 Purposive Sampling

Purposive sampling was used to select the two institutions (public and private) with well-established on-site fitness centres which render services to their staff members. The choice of a public and a private university helps to deal with the differences inherent in the two governance systems as well as managing biases inherent where a single institution is selected.

3.6.2 Stratified Random Sampling

This sampling method was used because the population did not constitute a homogeneous group. There were three strata which included university management, teaching and non-teaching employees (administrators, technical and clericals). The non-teaching strata constituted 69% of the sample size, while the teaching strata composed of 30% and the non-teaching strata constituted one (1) per cent as shown in table 3.1.

Table 3. 1: Number of Respondents by Stratum

Stratum	University		Total
	KU	ANU	
Management	4	3	7
Teaching	113	48	161
Non-Teaching	259	110	369
Total	376	161	537

3.6.3 Systematic Random Sampling

Systematic random sampling was used in the study because the study population was relatively large. After stratifying the study population into three, systematic random sampling was then used.

Having obtained a list of the names of employees from the Human Resources departments of the two universities the skip numbers for the universities were calculated and obtained. This was achieved by dividing the sample size number from the population number. The skip number for the three strata from Kenyatta University was ninth while the skip number for Africa Nazarene University strata was two. The first respondents from KU management, teaching and non-teaching staff were randomly chosen between one and the skip number nine and five was chosen. The first respondent from ANU for all the three categories was chosen between one and two and two was chosen. The researcher, having the list had to go from department to department following up on the sampled employees. For those employees who were not found a star was put on their corresponding number and were skipped. After having gone to the end of the list without having reached the sample size the sampling continued following the same procedure from the last sampled participant.

3.6.4 Simple Random Sampling

On-site fitness centre trainers were in the Non-Teaching stratum and were part of the sample. Simple random sampling was used because the fitness trainers were few and everyone had to have an equal chance of being selected to participate in the study. The trainers were made to pick papers from a container. Those who picked a paper written 'yes' were recruited for the study while those who picked the paper written 'no' were not. Five fitness trainers were sampled; three were from KU while two were from ANU. However, for ethical reasons, it was explained to non-participants

that the information gathered and recommendations made were going to be beneficial to them too.

3.7 Research Instruments

The study used questionnaires, interviews and observation as instruments for data collection.

3.7.1 Questionnaires

In this study, a questionnaire was used to gather data from management, teaching and non-teaching staff members (Appendix E) to find out their level of participation in PA and to determine factors that influence their participation.

Close-ended questions were asked using a five-point Likert scale. The questionnaire had five sections including demographic data, the status of participation in physical activity, socio-economic, health, psychological, environmental, operational and legal/job policy determinants.

3.7.2 Questionnaire-Based Interviews

The interview schedule as shown in Appendix F and Appendix G generated comprehensive information. The facility managers and the trainers were interviewed so as to elicit more information about the day to day operations of the facility such as the number and qualifications of trainers, if the facility offer privacy to those who do need it and if the facility's rates were subsidized.

Some of the information obtained from the interview was the amount of the money the staff members were supposed to pay in order for them to use the on-site fitness centres, the time the fitness centres open, the adequacy of the manpower and space.

The interviews also sought for clarifications on who is supposed and who is not supposed to pay the subscription fee. Responses from the interviews helped the researcher to understand how the two facilities operate from the management's perspective.

3.7.3 Observation

An observation checklist (Appendix H) was formulated and to be observed was the physical layout of the facilities such as the space for exercise sessions, type of equipment, if the instructors had an interest in their clients, to observe if there is privacy for the clients.

The purpose of the observation was to see how the facilities function and to determine the quality of their services through the interaction of the staff member and the fitness centre instructors.

3.8 Pre-Testing

The pre-test was done at Jomo Kenyatta University of Agriculture and Technology (JKUAT). The purpose of the pre-test was to reveal questionnaire errors before the commencement of the study, thus determining the validity and reliability of the data collection instruments. A sample of fifteen (15) respondents (two managers, five teaching and eight non-teaching staff) who knew that they were taking part in a pre-test was used. The study questionnaire was refined by rephrasing some of the items to improve clarity.

3.9 Validity and Reliability

Content validation was done by the supervisors and experts in the field. The researcher created a list of what she intended to measure. Then the supervisors and

experts checked the items on the list against the contents of the questionnaire, interview guide and the check-list. The questionnaire's dependability was established employing test-retest technique and the results were correlated. The questionnaire for university employees was administered to Jomo Kenyatta University employees and re-administered after two weeks. The test-retest result of the correlation from Cronbach was an alpha of 0.83 which was above the normally accepted one of 0.69

3.10 Data collection

3.10.1 Questionnaires

Structured questionnaires were hand delivered to both Kenyatta and Africa Nazarene Universities. Four (4) research assistants were used to help administer the questionnaires. These research assistants were briefed on the purpose of the study so as to be able to respond to questions on completion of the questionnaire. The research assistants were trained by the researcher for 2 days on the 29th and 30th of March 2017.

The selected respondents were called to book an appointment with them. The researchers introduced themselves to the respondents using the introductory letters obtained from both KU and ANU. The questionnaires were first administered to the respondents from the KU then a week later they were also administered to the respondents from ANU and eventually they ended up running concurrently because of the huge numbers from KU. However, before the questionnaire was administered to each participant, the participants were asked to fill in the informed consent first.

After filling in the informed consent, either the researcher or the research assistant had to cautiously explain the contents of the questionnaire to the respondents.

3.10.2 Interviews

After having administered the questionnaires at ANU the researcher interviewed the manager and the two fitness trainers. The researcher then went to KU two days later to interview the manager and the three fitness trainers after. The interviews were conducted at the fitness centres. The interviewees were asked to sign the consent form before the beginning of the interview. The interview lasted for a maximum of thirty minutes per session.

3.10.3 Observation

The researcher visited the fitness centres in both Kenyatta and Africa Nazarene University and observed the training sessions of those staff members who were registered with the facility. The overt observations were used due to ethical considerations related to concealing observation (covert). The researcher made use of the recording sheets and checklist for collecting observable data as shown in Appendix H. These observations were done after working hours for a week.

3.11 Data Analysis and Presentation

The Statistical Package for Social Sciences (SPSS) version 20.0 was used to analyse data obtained from the questionnaire and to calculate descriptive statistics of the interviews. Descriptive statistics were used to examine the status of employees' participation in PA. Percentages of maximum possible scores were analysed using Mann-Whitney U test and Kruskal Wallis test. Binary Logistics Regression was employed to establish the most influential determinants. The hypotheses were tested

at a $p < 0.05$ level of significance. The data obtained were presented using frequency distribution tables, percentages, tabulations and graphs.

3.12 Logistical and Ethical Considerations

Ethical clearance was sought from the Kenyatta University Ethics and Research Committee after approval of the research proposal by the Graduate school of Kenyatta University.

A research permit was then obtained from the National Council for Science and Technology (NACOSTI). The researcher also sought permission from both the Deputy Vice Chancellor Research, Innovation and Outreach (KU) and Deputy Vice Chancellor Academic Affairs (ANU). Participants were not coerced into taking part in the study. They had to fill in the informed consent forms. The first thing to be done was for the research assistants to establish rapport with the respondents and outline the purpose and significance of the study. The contents of the questionnaire were cautiously explained and reviewed with the respondents. Confidentiality was highly practised, and no information was available to anyone else who did not take part in the research. The researcher made sure that participants were not exposed to any risk of harm both physically and psychologically. All participants were treated equally.

CHAPTER FOUR: RESULTS AND INTERPRETATION

4.0 Introduction

This chapter exhibits the outcomes of the structured questionnaire, structured interview and observations. The first section of this chapter presents employee demographics. Section two presents the status of employees' participation in physical activity. Section three compares the status of employees' participation in physical activity in the two universities. Section four discusses the determinants of employees' participation in physical activity in the two universities. The fifth section compares the determinants of participation in physical activity by employees between the two universities. Section six compares the determinants of participation in physical activity across different categories of university employees.

4.1 Response Rate

Five hundred and thirty seven (537) questionnaires were administered to the employees of Kenyatta and Africa Nazarene universities. A total of 509 questionnaires were returned, yielding 94.7 % response rate from both institutions. Ten (10) questionnaires (two from ANU and eight from KU) were not analysed because some of the questions were not answered. Hence, a total of 499 questionnaires were analysed. Out of this, 351 were from Kenyatta University constituting 70% of the analysed questionnaires, while 148 questionnaires were from Nazarene University constituting 30% of the analysed questionnaires.

4.2 Demographic Characteristics of the Respondents

This section presents employee demographics including age, gender, marital status, academic qualification and job category.

4.2.1 Respondents' Age profiles

Participants were asked to indicate their age range. The age of the respondents was presented according to university as shown in figure 4.1.

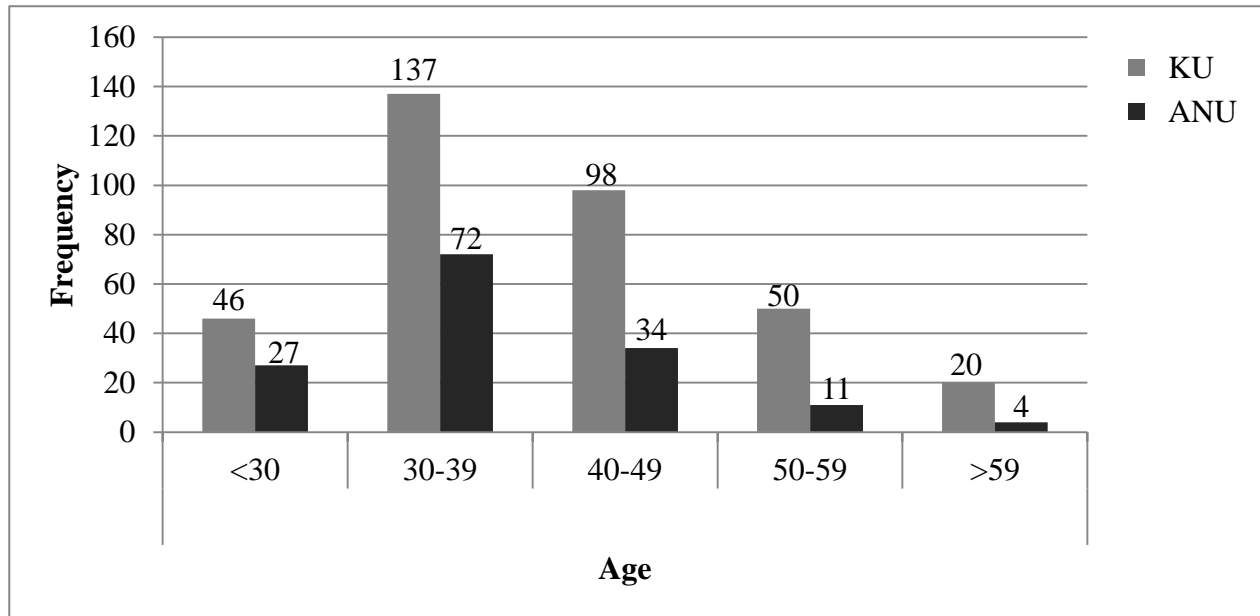


Figure 4.1: Distribution of the Respondents by Age

Figure 4.1 shows that 73 (14.6%) of the respondents were below the age of 30. Out of the total of 73 employees, 46 (9.2%) were from KU and 27 (5.4%) were from ANU. The dominant age group was 30-39 with a total of 209 (41.9%) employees (137 [27.5%] from KU and 72 [14.4%] from ANU). The age range 40-49 was second highest with 132 (26.5%) people (98 [19.6%] from KU and 34 [6.8%] from ANU). The 50-59 age range had 61 (12.2%) people, (50 [10%] from KU and 11 [2.2%] from ANU). Those employees above 60 years old were 24 (4.8%), (20 [4%] from KU and four [0.8%] from ANU). These results imply that the two universities should pay much attention to the employees who are in the age group 30-39 where the majority are and if they are physically active; their work productivity will not be compromised.

4.2.2 Respondents' Gender and Marital Status

A cross-tabulation was used to establish the gender and marital status of the respondents, as presented in Table 4.1.

Table 4.1: Gender and Marital Status of the Respondents

Gender	Marital Status				Total
	Single	Married	Divorced	Widowed	
Male	43	186	12	4	245
Female	88	140	6	20	254
Total	131	326	18	24	499

The results in table 4.1 show that, out of 245 males, 43 of them were single. There were 186 married men while 12 were divorced and four of them were widowed. On the other hand, the results show that a total of 254 females participated in the study. From the results, 88 of them were single, 140 were married, six were divorced and 20 were widowed. The respondents were further asked if they had children and 79% (393) had children while 21% (106) reported that they did not have children.

4.2.3 Respondents' Educational Qualification and Job Category

Respondents were asked to indicate their highest academic qualification and their job category. The results are shown in Table 4.2.

Table 4.2: Qualification and Job Category Cross Tabulation

Qualification	Job Category			Total
	Management	Teaching staff	Non-teaching staff	
Certificate	0	0	45	45
Diploma	0	0	88	88
First degree	0	2	129	131
Master's	3	57	81	141
Doctorate	4	79	6	89
Post Doctorate	0	5	0	5
Total	7	143	349	499

The results in table 4.2 show that there were only seven employees in the management category, three of whom were holders of a master's degree (ANU) while the other four were holders of a doctoral degree (KU). The teaching category had a total of 143 employees, two (1.4%) of the teaching staff were first degree holders, 57 (39.9%) were master's holders, 79 (55.2%) were PhD holders and five (3.5%) had a post-doctorate. Non-teaching staff totalled to 349, and those staff members with certificate were 45 (12.9%). Diploma holders were 88 (25.2%), first-degree holders were 129 (37%), Master's holders were 81 (23.2%), and PhD holders were six (17%).

4.3 Respondents' Participation in Physical Activity in On-site Fitness Centres

The respondents were asked to indicate if they were using the on-site fitness centres for their physical activity. The results are as presented in figure 4.2.

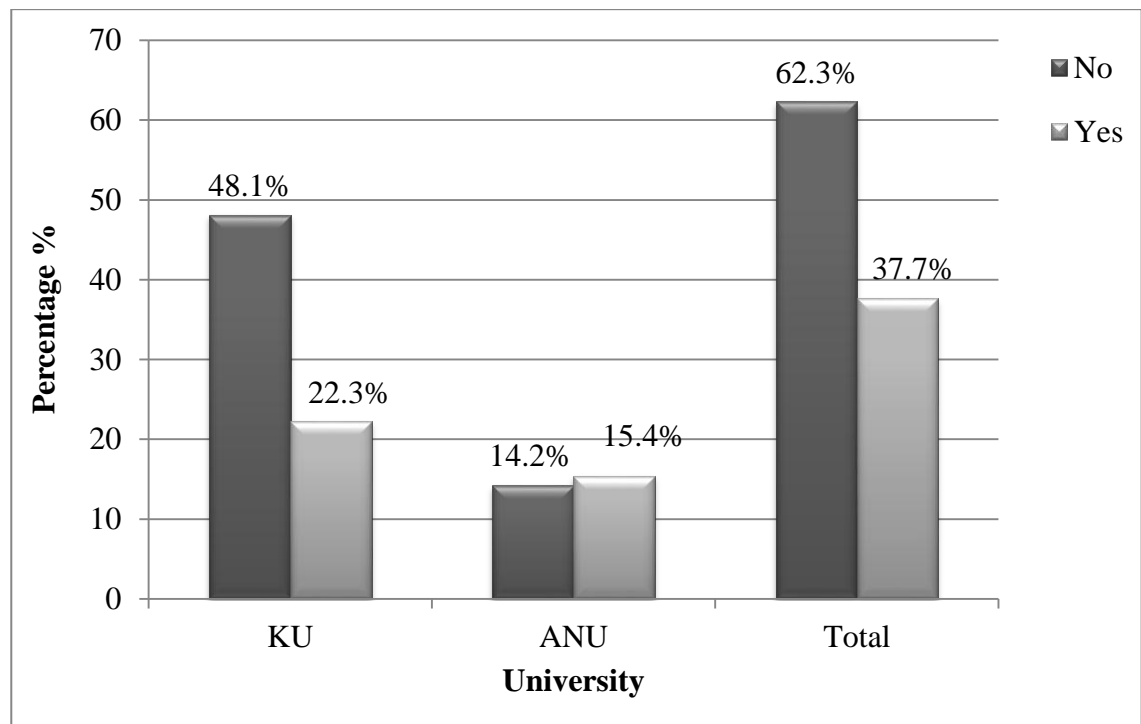


Figure 4.2: Respondents' Participation in Physical Activity in On-Site Fitness Centres.

Figure 4.2 indicates that 37.7% (188) employees use the on-site fitness centres (22.3% [111] from KU and 15.4% [77] from ANU). On the other hand, 62.3% (311) employees indicated that they do not use the on-site fitness centres (48.1% [240] from KU and 14.2% [71] from ANU).

4.3.1 Reasons for not using the On-site Fitness Centres

The respondents who indicated that they do not use onsite fitness facilities for their physical activity were followed up to obtain the most important reasons for not utilising the facility and the responses are reported in figure 4.3.

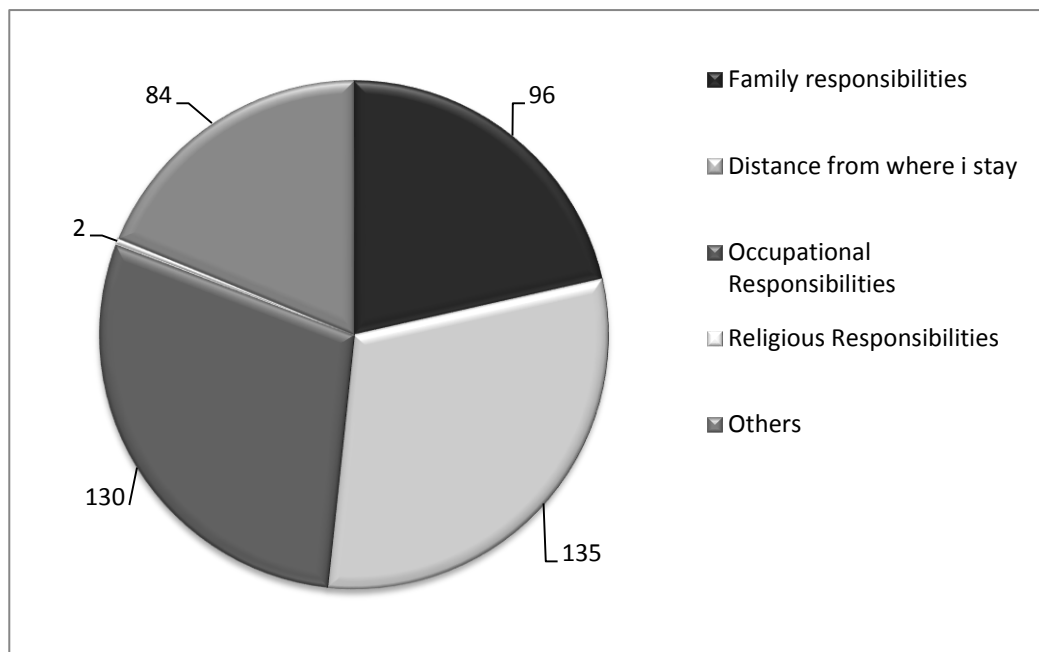


Figure 4.3: Respondents' Reasons for not using the On-site Fitness Centres

The results show that 96 (21.5%) employees did not use the on-site fitness centre because of family responsibilities, distance from the workplace (135, 30.2%), professional (occupational) responsibilities (130, 29.1%) and religious responsibilities (2, 0.004%) and 84 had other reasons which included high subscription charges as well as not being interested and preferring to use other facilities.

4.4 Respondents' Participation in Physical Activity in Off-Site Facilities

To determine whether the respondents used the facilities outside their workstation, the responses were grouped and presented according to university.

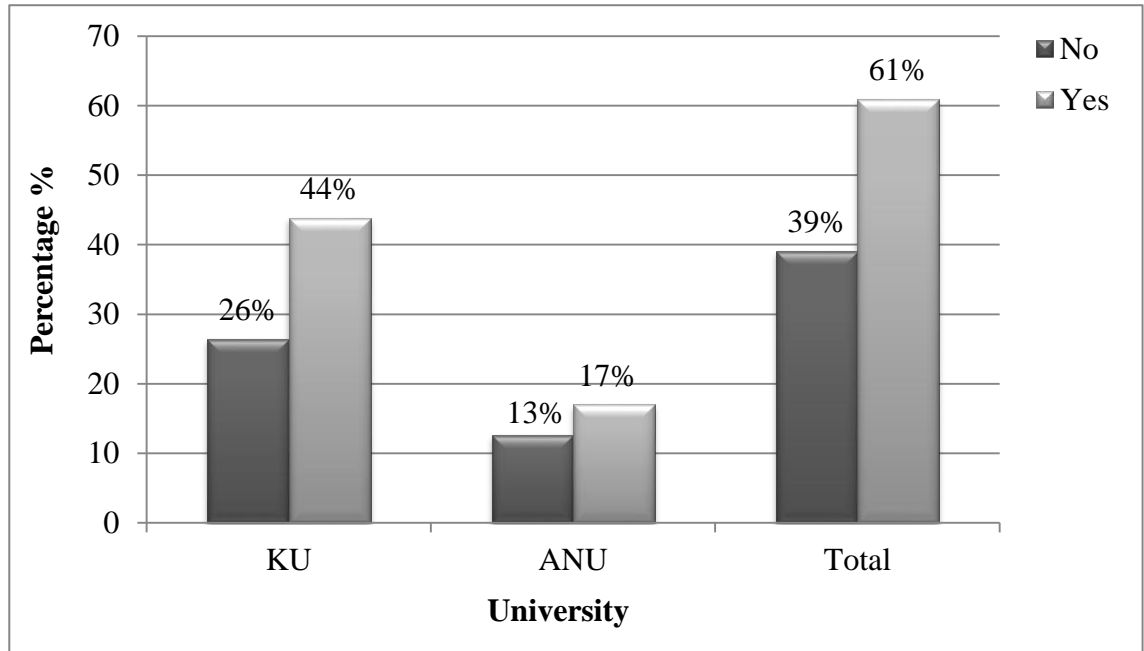


Figure 4.4: Respondents' Participation in Physical Activity outside Campus

Figure 4.4 shows that 61% (304) employees were physically active outside the campus (44% [219] from KU and 17% [85] from ANU). On the contrary, 39% (195) employees reported not to be physically active outside campus (26% [132] from KU and 13% [63] from ANU).

4.5 Physical Activity Status of Respondents in On-site Fitness Centres

In order to establish the status of physical activity of university employees, respondents were asked to rate the frequency (number of days per week), intensity (light, moderate or vigorous) and duration (time) of the physical activity they engaged in within the institution. The benchmark was set to be greater than or equal to 2.5 mean score (Likert scale) and higher than or equal to 50% (Percentage of

Maximum Possible score). Anyone whose score was above or equal to the benchmark was considered to be active while those with a score less than the benchmark was considered as not active.

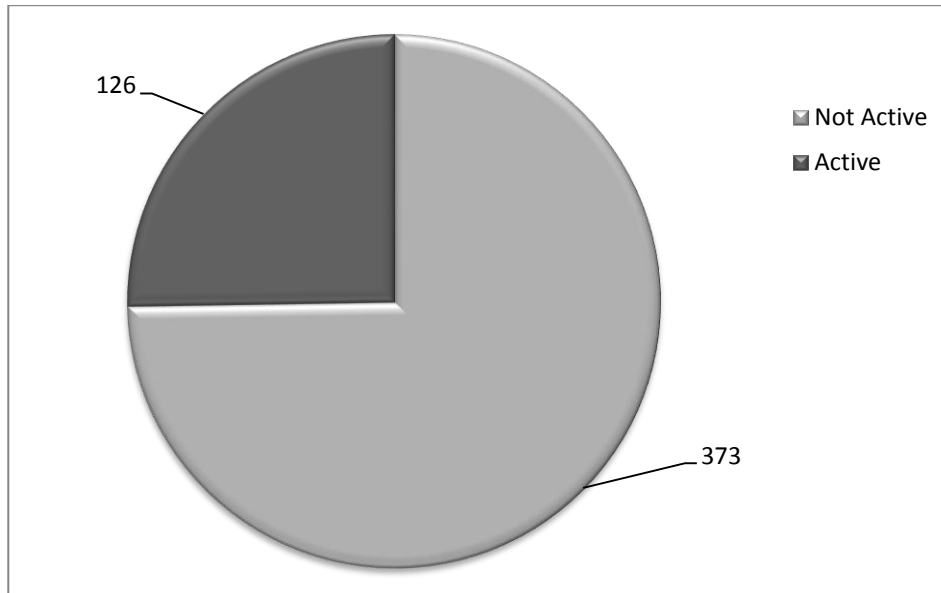


Figure 4.5: Physical Activity Status of Respondents in On-Site Fitness Centres.

Figure 4.5 shows that out of 499 respondents, 126 (25%) reported that they utilise the on-site fitness centre effectively hence physically active while 373 (75%) indicated that they are not physically active when it comes to using the on-site fitness centres.

Table 4. 3: Descriptive Statistics on the Respondents' PA Status

	Range	Minimum	Maximum	Mean	SD	Variance
PA Status	80	20	100	38.20	19.7	389.1

N = 499

Table 4.3 shows that employees from the two institutions had a low physical activity status (Mean = 38.2, SD = 19.7). This mean was lower than the benchmark of 50%.

Meaning that more employees were inactive (373 [75%]) compared to those that are active (126 [25%]).

The results in table 4.4 show that among the people who were below the age of thirty, 24 of them were active and 49 were not active. The age group 30-39 had 56 employees who were physically active while 153 were not physically active. Thirty-eight employees were active in the age group 40-49 while 94 of them were not active. Out of 61 employees in the age range of 50-59, nine were active while 52 were not active. For those employees above the age of 59, two were active whereas 22 were not active. However, for those employees who were active, 66 were males while 63 were females and for those who were not active, 179 were males while 191 were females.

Table 4.4: Physical Activity Status of Respondents in On-site Fitness Centres by Demographics.

Demographics	On-site PA status		Total
	Not Active	Active	
Age			
<30	49	24	73
30-39	153	56	209
40-49	94	38	132
50-59	52	9	61
>59	22	2	24
Gender			
Male	179	66	245
Female	191	63	254
Job Category			
Management	3	4	7
Teaching Staff	108	35	143
Non-Teaching Staff	262	87	349
University			
KU	273	78	351
ANU	100	48	148
TOTAL	373	126	499

Table 4.4 shows that four management staff members from the two universities were active while three were not active. Out of 143 teaching staff, only 35 made use of the on-site fitness centres while 108 were inactive. For non-teaching employees, 87 of them were active, and 262 were inactive. In overall, with 351 employees from KU, only 78 of them were active and the rest 273 were not active. Out of 148 employees from ANU, 48 of them were active, and 100 of them were not active.

4.6 Comparison of the Status of Employees' Participation in Physical Activity in the Two Universities

The status of physical activity of employees was tested and compared between employees of the two universities. Data were analysed using descriptive statistics and Manny-Whitney U test. The null hypothesis was that there is no significant difference in the status of participation in physical activity by the employees between the two universities.

Table 4.5: Cross Tabulation Result of Physical Activity Status of Respondents by University Job Category

University	Job Category	PA Status verdict		Total
		Not Active	Active	
KU	Management	3	1	4
	Teaching Staff	75	26	101
	Non-Teaching Staff	195	51	246
	Total	273	78	351
ANU	Management	0	3	3
	Teaching Staff	33	9	42
	Non-Teaching Staff	67	36	103
	Total	100	48	148
Total	Management	3	4	7
	Teaching Staff	108	35	143
	Non-Teaching Staff	262	87	349
	Total	373	126	499

The results shown in table 4.5 indicates that, out of 351 respondents from KU, 78 (22.2%) were active and 273 (77.8%) were inactive. Respondents from ANU who were active were 48 (32.4%), and those who were inactive were 100 (67.6%).

Table 4.6: *Manny-Whitney U test on the Physical Activity Status of Respondents*

	University	N	M-Rank	Z	Sig. (2-tailed)
PA Status	KU	351	231.76	-4.512	.000
	ANU	148	293.25		

The results in table 4.6 show that there was a significant difference in the status of participation in PA between the two universities (KU [M -Rank = 231.76] and ANU [M -Rank = 293.25], $Z = -4.512$, $p < 0.001$). These results were based on the percentage of the maximum possible score (converted from the Likert scale). Therefore the null hypothesis was rejected.

4.7 Determinants of Employees' Participation in Physical Activity in Kenyatta and Africa Nazarene Universities

The third objective of the study was to establish the determinants of employees' participation in physical activity in the two universities. The results are summarised in table 4.7

Table 4.7: *Descriptive Statistics of the Determinants of Participation in PA in On-site Fitness Centres.*

	Range	Minimum	Maximum	Mean	SD	Variance
Social life	80	20	100	77.18	15.63	244.20
Emotional	73	27	100	86.59	15.86	251.49
Motivational	68	32	100	80.29	15.92	253.54
Self-rating	80	20	100	92.37	14.03	196.84
Psychological	71.67	28.33	100	86.40	12.62	159.30
Environmental	100	0	100	49.05	39.10	1528.95
Operational	100	0	100	45.51	36.62	1341.30
Health	1	1	2	1.49	.50	.25
Job	2	1	3	2.69	.49	.24

Table 4.7 shows that social life, emotional, motivational, self-rating and psychological determinants had a maximum of 100 and a minimum between 20 and 32 and a mean of greater than 77. However, although environmental and operational determinants had a maximum of 100, some respondents scored zero hence the minimum of zero and a mean of 49.05 and 45.51 respectively. The health ($M = 1.49$) and job ($M = 2.69$) determinants had a maximum of two and three respectively with a minimum of one.

4.7.1 Monthly Net Income of Respondents

Respondents were asked to report on their approximate monthly net income in Kenyan Shillings, and the results are as shown in figure 4.6

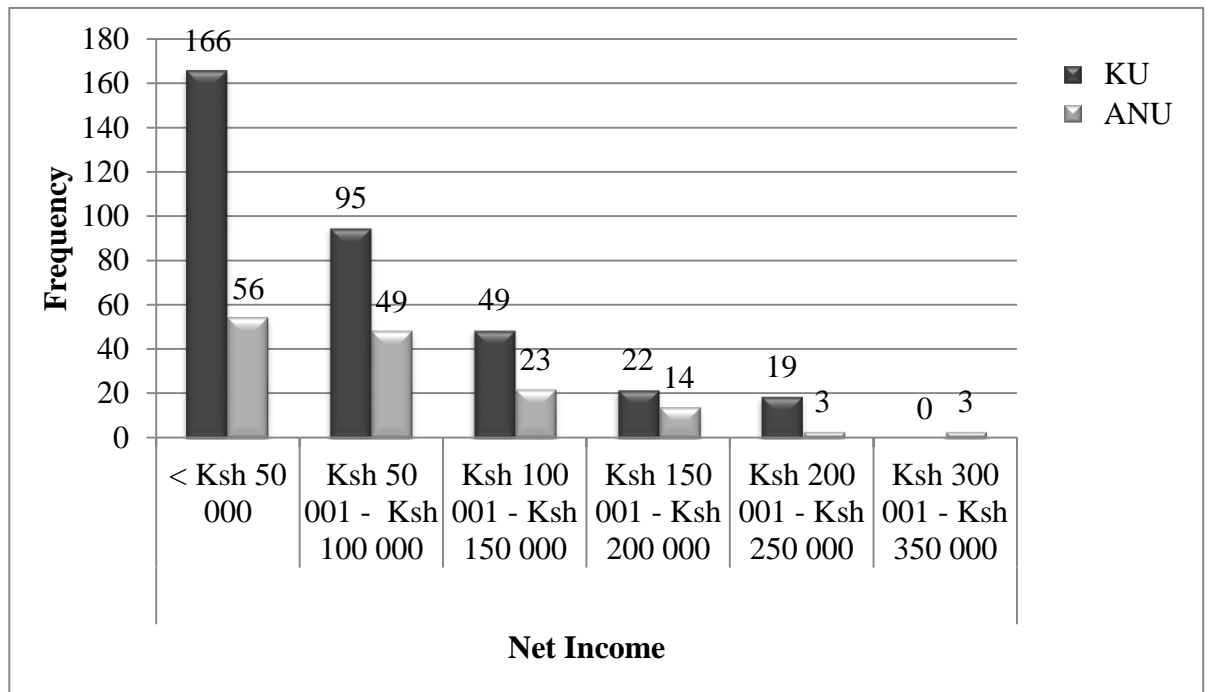


Figure 4. 6: Respondents’ Distribution by Net Income

From Figure 4.6, 166 employees from Kenyatta University and 56 from Africa Nazarene University indicated that their net income ranged below 50 000 Kenyan

Shillings. A total of 144 respondents from the two institutions reported that their monthly net income ranged between Ksh 50 001 to Ksh 100 000. Seventy-two employees jointly from KU and ANU had a monthly income which varied between Ksh 100 001 to Ksh 150 000. Those employees whose monthly income was between Ksh 150 001 to Ksh 200 000 were 36 in number. Twenty-two employees had a monthly net income which ranged between Ksh 200 001 to Ksh 250 000. There were three respondents from Africa Nazarene University whose net income varied between Ksh 300 001 to Ksh 350 000.

4.7.2 Payment for the Use of the On-site Fitness Centres

The study also sought to find out if the university employees were supposed to pay a subscription fee for the use of the on-site fitness centres and if they did, they were supposed to state how much. Also, they were to rate the subscription fee on a scale of low, average and high.

Table 4.8: Payment for the Use of the On-site Fitness Centres

University			Job Category			Total
			Management	Teaching Staff	Non-Teaching Staff	
KU	Are you expected to pay subscription fee for the use of the on-site fitness centre	No	3	19	18	40
		Yes	1	82	228	311
	Total		4	101	246	351
ANU	Are you expected to pay subscription fee for the use of the on-site fitness centre	No	3	42	97	142
		Yes	0	0	6	6
	Total		3	42	103	148
Total	Are you expected to pay subscription fee for the use of the on-site fitness centre	No	6	61	115	182
		Yes	1	82	234	317
	Total		7	143	349	499

Table 4.8 shows that 40 employees (3 management, 19 teaching staff and 18 non-teaching staff) from Kenyatta University have free access to the fitness facility while 311 are expected to pay for them to use the facility. On the contrary, the majority of the employees (142) from Africa Nazarene University reported having free access to the on-site fitness centres except for six non-teaching staff who indicated that they are expected to subscribe if they wish to use the facilities.

The above information was followed up with an in-depth interview conducted with the on-site fitness centre managers. The manager from KU reported that employees at KU are supposed to pay a subscription fee for them to use the facility.

They explained as follows:

“What you need to realise is that currently what we charge is KSh 18,000.00 per year that is if you take the full year rate. With that our staff members have the opportunity to pay the subscription fee via the check-off system, so they pay KSh 1,500.00 per month as opposed to the monthly payment of KSh 3,000.00. So they pay KSh 1,500.00 per month if you compare it to other gyms around you won’t find any gym that is charging KSh 1,500.00 per month.” (Respondent KU 1)

On the contrary, the manager from ANU reported that employees from ANU are not supposed to pay any fee for the use of the facility. The manager had the following to say:

“The gym is free for all the staff members as long as they can identify themselves as Africa Nazarene University staff members.” (Respondent ANU 1)

The employees were further asked if the subscription fee influenced their decision to use the facility or not. One hundred and sixty-two employees from KU indicated that the subscription fee influenced their use of the facility and four employees from ANU echoed the same sentiments. The other two from ANU reported that subscription fee did not affect their use of the facility.

4.7.3 On-site Fitness Centre Membership Package

The study sought to find out if university employees received any membership package from the employer and the results are as indicated in Figure 4.7.

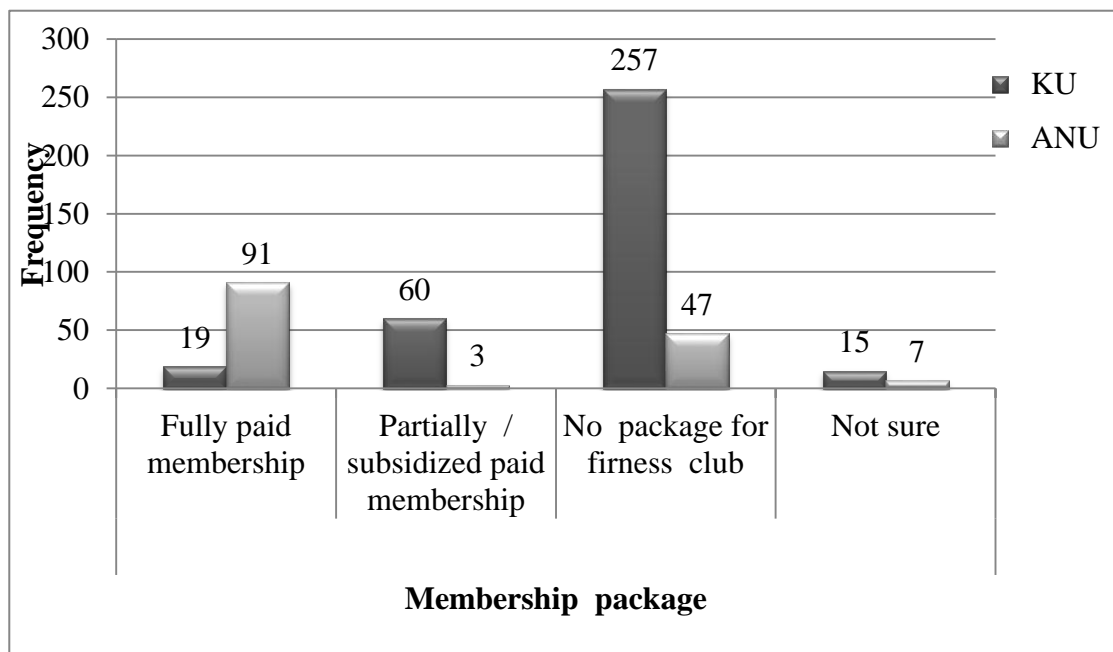


Figure 4. 7 On-Site Fitness Centre Membership Package from the Employer

Figure 4.7 shows that 19 employees (three teaching and 16 non-teaching) from KU and 91 employees from ANU received fully paid membership package from their employer. The Subsidized or partially paid membership package was received by 60 employees (three management, 13 teaching and 44 non-teaching staff) from KU and three employees (non-teaching) from ANU. However, 257 employees from KU indicated that they received no package for fitness centre/facility from the employer and 47 employees (18 teaching and 29 non-teaching staff) from ANU concurred that there was no package for on-site fitness centre membership. However, 22 employees (15 from KU and seven from ANU) were not sure if the employer offers fitness membership package. The employees from ANU who indicated that they received no package for the on-site fitness centre/facility did not realise that the fully paid membership package meant the free access to the facility they were enjoying. The reason as to why only 19 employees from KU get fully paid membership could not be determined as the questionnaire did not probe for further information. However, these 19 employees were believed to be members of staff from the sport related disciplines or departments. In essence, the results reveal that for KU no significant subsidies were offered at 5.4 %, and for ANU it was quite significant at 61.5 %.

Table 4.9: Rating of the Subscription Fee for the On-site Fitness Centre by Respondents

	Rating	University		Total
		KU	ANU	
Do you consider the subscription to be low or high?	Low	36	4	40
	Average	139	0	139
	High	140	2	142
Total		315	6	321

Table 4.9 shows a total of 40 employees (36 from KU and four from ANU) reported that the subscription fee for the on-site fitness centre was low. One hundred and

thirty-nine employees from KU stated that the subscription fee was average and none from ANU. Those employees who reported that the subscription fee was high were 142 in total, 140 of them were from KU and two were from ANU. Despite the confirmation that ANU employees had free access to the on-site fitness centre, there was contradictory information from the six employees who reported that they pay a subscription fee. So non-participation in PA could be attributed to the high subscription charges at KU than ANU.

4.8 Comparison of the Determinants of Participation in Physical Activity by Employees Between the two Universities

The fourth objective was to compare the determinants of participation in PA between employees at Kenyatta University and Africa Nazarene University. The null hypothesis stated that there is no significant difference in the determinants of employees' participation in physical activity PA at the on-site fitness centres between the two universities. Mann Whitney U test was used, and the results are presented in table 4.10.

The results in table 4.10 show that there was no significant difference in the social life scores of employees from KU (M -Rank =249.89) and ANU (M -Rank =250.27), $Z = -.207$, $p = .978$. The mean depicts that the social life of the employees influences their participation in PA in on-site fitness centres, in both institutions. There was no significant difference in emotional influence of employees from KU (M -Rank =257.82) and ANU (M -Rank =231.46), $Z = -1.946$, $p = .052$. The findings indicate that the influence of emotions on one's decision to participate in PA in the on-site fitness centre was not different amongst the employees in both institutions. There

was a significant difference in the motivational level to participate in on-site fitness centres between employees from KU (M -Rank =266.91) and ANU (M -Rank =209.90), $Z = -4.066$, $p < .001$. The results also showed that there was a significant difference in self-rating between employees from KU (M -Rank =264.47) and those from ANU (M -Rank =215.68), $Z = -4.099$, $p < .001$. These findings indicate that the university employees' self-rating influenced employees from the two institutions regarding their participation in PA at the onsite fitness centres.

Table 4.10: Mann-Whitney U-test Results on the Determinants of Participation in PA in On-site Fitness Centres

Determinant	University	N	M Rank	Z	Sig (2-tailed)
Health Condition	KU	351	237.89	-3.337	.001
	ANU	148	278.72		
Social	KU	351	249.89	-.027	.978
	ANU	148	250.27		
Emotional	KU	351	257.82	-1.946	.052
	ANU	148	231.46		
Motivational	KU	351	266.91	-4.066	.000
	ANU	148	209.90		
Self-rating	KU	351	264.47	-4.099	.000
	ANU	148	215.68		
Psychological	KU	351	266.44	-3.928	.000
	ANU	148	211.02		
Environmental	KU	351	230.57	-4.647	.000
	ANU	148	294.71		
Operational	KU	351	230.87	-4.679	.000
	ANU	148	295.38		
Employment	KU	351	236.10	-3.360	.001
	ANU	148	282.96		

The results also showed that there was a significant difference in the psychological scores between employees from KU (M -Rank =266.44) and those from ANU (M -Rank =211.02), $Z = -3.928$, $p < .001$. The results indicated that employees from KU were in better control of their emotions, they were highly motivated and had better

self-esteem compared to those from ANU. Also, there was a significant difference in the health scores of employees from ANU (M -Rank =278.72) and those from KU (M -Rank =237.89), $Z = -3.337$, $p = .001$. The results show that employees from ANU were more affected by the pre-existing health conditions than KU employees. More so, most employees from ANU had health problems or conditions such as organ diseases, injuries and other NCDs (high blood pressure, asthma, diabetes et cetera) that are hindering them from participating in PA.

There was a significant difference in the employment or job policy determinant between employees from ANU (M -Rank =282.96) and those from KU (M -Rank =236.10), $Z = -3.360$, $p = .001$. The findings depict that the policies at ANU are more supportive of the employees' participation in PA within the institution than the policies at KU. The results also show that there was a significant difference in environmental scores between employees from ANU (M -Rank =294.71) and those from KU (M -Rank =230.57), $Z = -4.647$, $p < 0.001$. The results indicate that the environmental features of the onsite fitness centre at ANU had a better appeal to the employees than the fitness centre at KU. The operational scores for employees from ANU (M -Rank =295.38) were significantly higher than those of employees from KU (M -Rank =230.87), $Z = -4.679$, $p < 0.001$. These findings reveal that the employees from ANU appreciated the operations of their on-site fitness centre better than those from KU. Therefore the null hypothesis there is no significant difference in the determinants of employees' participation in physical activity at the on-site fitness centres between the two universities was accepted for the social an emotional

determinants. The hypothesis was rejected for the health condition, motivational, self-rating psychological, environmental, operational and employment determinants.

4.9 Comparing the Determinants of Participation in Physical Activity across Different Categories of University Employees.

To achieve the fifth objective of comparing the determinants of participation in PA across different job categories the Kruskal Wallis tests were used. The null hypothesis was that there is no significant difference in the determinants of employees' participation in PA at the on-site fitness centres among different job categories. The results are presented in table 4.11.

Table 4.11: Determinants of participation in PA by employees by their job category

Determinant	Job category	N	Mean Rank	H	df	Sig
Health Condition	Management	7	269.57	1.437	2	.488
	Teaching Staff	143	259.60			
	Non-Teaching Staff	349	245.67			
Socio	Management	7	172.71	2.427	2	.297
	Teaching Staff	143	244.88			
	Non-Teaching Staff	349	253.65			
Emotional	Management	7	289.00	7.524	2	.023
	Teaching Staff	143	275.12			
	Non-Teaching Staff	349	238.92			
Motivational	Management	7	335.57	5.572	2	.062
	Teaching Staff	143	266.32			
	Non-Teaching Staff	349	241.60			
Self-rating	Management	7	334.50	3.478	2	.176
	Teaching Staff	143	250.53			
	Non-Teaching Staff	349	248.09			
Psychological	Management	7	332.00	7.683	2	.021
	Teaching Staff	143	272.35			
	Non-Teaching Staff	349	239.20			
Environmental	Management	7	410.29	11.060	2	.004
	Teaching Staff	143	234.00			
	Non-Teaching Staff	349	252.58			
Operational	Management	7	416.57	14.146	2	.001
	Teaching Staff	143	227.35			
	Non-Teaching Staff	349	255.94			
Employment	Management	7	293.79	4.319	2	.115
	Teaching Staff	143	268.52			
	Non-Teaching Staff	349	241.53			

The results in table 4.11 show a significant difference in the emotional determinant of participation in PA by employees in different job categories ($H(2) = 7.524, p = .023$) with a mean rank of 289.00 for employees in management, 275.12 for teaching staff and 238.92 for non-teaching staff. The environmental determinant was also significantly different, ($H(2) = 11.060, p = .004$) with a mean rank of 410.29 for employees in management, 234.00 for teaching staff and 252.58 for non-teaching staff. There was a significant difference on operational determinants, ($H(2) = 14.146, p = .001$) with a mean rank of 416.57 for employees in management, 227.35 for teaching staff and 255.94 for non-teaching staff. There was a significant difference on psychological determinants ($H(2) = 7.683, p = .021$) with a mean rank of 3329.00 for employees in management, 272.35 for teaching staff and 239.20 for non-teaching staff. There are other determinants which were not significantly different, such as the health condition ($p = .488$), social determinant ($p = .297$), motivation determinant ($p = .062$), self-rating ($p = .176$) and legal or job determinant ($p = .115$).

Therefore the null hypothesis there is no significant difference in the determinants of employees' participation in physical activity at the on-site fitness centres among different job categories was accepted for the health condition, socio, motivational, self-rating and the employment determinants. However, the null hypothesis was rejected for the emotional, psychological, environmental and operational determinants.

Table 4. 12: The Kruskal Wallis Post Hoc Tests

Determinants	Source of Difference	Sig
Emotional	Teaching vs Non-Teaching	.008
Psychological	Teaching vs Non-Teaching	.021
Environmental	Management vs Teaching	.002
	Management vs Non-Teaching	.003
Operational	Management vs Teaching	.001
	Management vs Non-Teaching	.003
	Teaching vs Non-Teaching	.040

The Kruskal Wallis post hoc tests were conducted to ascertain which job categories resulted to the significant differences. The results in table 4.12 showed that there was a significant difference in the emotional determinant between teaching and non-teaching staff ($p = .008$), but there was no significant difference in emotional determinant between management and teaching staff ($p = .778$), management and non-teaching staff ($p = .350$). For the environmental determinant, significant differences were found between management and teaching staff ($p = .002$) and management and non-teaching staff and ($p = .003$). However, there was no significant difference between teaching staff and non-teaching staff ($p = .180$). The results also showed that the operational determinant was significantly different in all the job categories, (management and teaching staff [$p = .001$], management and non-teaching staff [$p = .003$] and teaching staff and non-teaching staff [$p = .040$]). For the psychological determinant, there was a significant difference between teaching staff and non-teaching staff ($p = .021$), and there was no significant difference between management and teaching staff ($p = .318$) and management and non-teaching staff ($p = .086$).

4.10 Comparing the Contribution of each of the Determinants of Participation in Physical Activity in On-Site Fitness Centres on University Employees.

To achieve the sixth objective which was to compare the influence of each of the determinants of participation in physical activity in on-site fitness centres on university employees, binary logistics regression was used. The null hypothesis was there is no significant difference in the influence of each of the determinants of participation in PA in the on-site fitness centres on university employees. On-site physical activity status was entered as the dependent variable while the scores for social life, emotional, motivational, self-rating, environmental, operational and health determinants were entered in the regression model as the covariates

Table 4.13: Classification Table

	Observed	Predicted		Percentage Correct
		On-site Physical Activity Status		
		Not Active	Active	
On-site Physical Activity Status	Not Active	372	0	100.0
	Active	127	0	.0
Overall %				74.5

Table 4.13 shows that regardless of the independent variables it can be correctly assumed (74.5% of the time) that the university employees are not active. The results mean that even if one does not know anything about a respondent's social life, emotions, motivations, health condition, operational and environmental influences, one would be 74.5% correct to pass the above assumption. The variables that are not in the equation table above indicate whether each independent variable improves the participation in on-site PA or not.

Table 4.14: Variables in the Equation (Binary logistic regression analysis)

	B	Wald	df	Sig	Exp(B)
Social life Score	-.277	3.305	1	.069	.758
Emotional Score	.272	1.569	1	.210	1.313
Motivational Score	.290	2.050	1	.152	1.336
Self-rating Score	-.739	11.994	1	.001	.478
Operational Score	.417	7.182	1	.007	1.517
Environmental Score	.267	3.269	1	.071	1.306
Health Score	.818	11.768	1	.001	2.265
Constant	-2.235	5.339	1	.021	.107

From the results in table 4.14, the Wald criterion demonstrated that self-rating ($p = .001$), health ($p = .001$) and operational ($p = .007$) made a significant contribution in predicting participation in PA. Social life, emotions, motivation and environmental were not significant predictors of participation in PA. Exp (B) values indicate that when independent variables (emotions [1.313], motivation [1.336], operational [1.517] and environmental [1.306]) scores are raised by one unit the odds ratio are one times as large, and therefore university employees are times one likely to be active.

More so, once health determinant scores (2.265) are raised by one unit, the odds ratio is two times larger, and therefore university employees are two times likely to be active. These results imply that a change in the independent variables is most likely to result in employees participating one or two times more causing an increase in the dependent variable (participation in physical activity). The social and self-rating determinants had exponentiation of .758 and .478 respectively, which shows that a change in the influence of social life and self-rating did not result in any change in employee's participation in PA. On overall, the results showed that the most influential determinants were the health condition and self-rating ($p = .001$),

followed by the operational ($p = .007$), social ($p = .069$), environmental ($p = .071$), motivational ($p = .152$) and lastly the emotional ($p = .210$).

Therefore the null hypothesis there is no significant difference in the influence of each of the determinants of participation in PA in on-site fitness centres on university employees was accepted for the social, emotional, motivational and the environmental determinants. However the null hypothesis was rejected for the self-rating, health and the operational determinants.

Table 4.15: Classification Table with the Constant Model

Observed		Predicted			
		On-site Physical Activity Status		Percentage Correct	
		Not Active	Active		
On-site Physical Activity Status	Not Active	343	29	92.2	
	Active	83	44	34.6	
Overall Percentage				77.6	

The results in table 4.15 show that 34.6% of the participants were correctly classified for the active group and 92.2% for the inactive group resulting in an overall correct classification of 77.6%. The results show that when determinants of participation in PA are factored in, there is an improvement on the 74.5% correct classification. The results show that some of the independent variables such as self-rating, operational and the health determinants were responsible for the increase. The study also considered other relationships that might affect an employees' participation in PA in on-site fitness centres and the results presented in table 4.16.

Table 4.16: Respondents' PA Status by Gender

	<i>Gender</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>Sig</i> <i>(2-tailed)</i>
PA status	Male	245	38.54	19.80	.378	497	.706
	Female	254	37.87	19.69			

The results in Table 4.16 show that there was no significant difference in the PA status of employees by gender, male ($M = 38.54$, $SD = 19.80$) and female ($M = 37.87$, $SD = 19.69$); $t(497) = .378$, $p = .706$. The results imply that both male and female employees were not physically active when it comes to the use of the on-site fitness centres.

4.11 Interview Responses by On-Site Fitness Centre Managers

Interviews were done with the on-site fitness centre managers from the two universities. The manager for ANU on-site fitness centre was a female while that from KU was a male, and both of them have a first degree. The interview schedule indicated that there are ten gymnasium trainers in KU and five in ANU.

After having been asked if they offer personal training to their clients, the manager from KU gym reported that they do not provide personal training.

“We do not offer personal training, but we try and assist those clients who are referred for rehabilitation to the fitness centre by drafting a programme for them to follow, and the instructors will not be solely concentrating on them as what personal trainers would do. Here we have gym instructors, not personal trainers”. (Respondent KU1)

On the contrary, the manager of ANU gym reported that they offer personal training to their clients.

“Yes, we do offer personal training services to those who are in dire need of it and would have requested for it. They will have to make arrangements with the instructors, and they do not pay for that service. However, we do not encourage personal training because the gym is not yet fully grown and we pay our instructors based on the specific hours in their contract”.

(Respondent ANU1)

4.12 Interview Responses by On-Site Fitness Centre Trainers

The on-site fitness trainers from both KU and ANU were interviewed to get more information about the operations of the on-site fitness centres. The two trainers who were interviewed from ANU reported a diploma to be their highest qualification; however, one of these trainers had taken the initiative to advance academically by enrolling for a degree. From KU, one female trainer is a master’s degree holder, and the other two trainers reported that they are first degree holders with the male trainer almost completing his master’s degree.

Table 4.16 shows that a total of five trainers were interviewed, two from ANU and three from KU. There were two female trainers and one male trainer from KU and from ANU the two were all males. Three of the trainers were below the age of 30, and two were in the age range of 30-39. The results show that the job of fitness training is no longer male-dominated. The age of the trainers indicates that this job is dominated by the young adults who are still energetic and ready for challenges.

Table 4.17: Gender, University and Age Cross-Tabulation of Trainers

Gender	University	Age		Total
		<30	30-39	
Male	KU	1	0	1
	ANU	1	1	2
	Total	2	1	3
Female	KU	1	1	1
	ANU	0	0	0
	Total	1	1	2
Total		3	2	5

Out of the five trainers who were interviewed from the two universities, four of them keep their fitness knowledge up to date through reading and researching while the other one trainer use consultation as a strategy for updating knowledge. Fitness trainers from ANU indicated that they had worked at the university for one and half years and two years respectively and their concentration is only in the fitness centre. As for KU trainers, two trainers had worked for more than three years and the other one reported to have worked for the institution for a year.

4.13 Observation Results from the Checklist

The researcher observed the operations of the on-site fitness centres. In terms of equipment, it was observed that for the two institutions the facilities had treadmills, yoga mats, the multi-gymnasium equipment, barbells, and dumbbells. The changing rooms had toilets, showers and changing areas. The instructors seemed to have an interest in the progress of their clients. The two fitness centres did not cater for the privacy of the clients. It was observed that few employees from the two universities were coming to use the on-site fitness centres. During a two hour session, the employees could be as few as four people. It was also observed that for ANU the free space was there and it was noticed that it was mostly as a result of not having much equipment in the room.

CHAPTER FIVE: DISCUSSION

5.0 Introduction

This chapter presents a discussion of the findings based on the objectives of the study as well as the available literature. The section discussed the status of participation in PA by employees in on-site fitness centres and the factors that determine their participation in PA in on-site fitness centres. The chapter has also compared the determinants of participation in physical activity by employees between the two universities and between job categories.

5.1 Demographic Characteristics of the Respondents

The results showed most respondents were below the age of 30. The dominant age group was 30-39 years which constituted 209 (41.9%) of the study group from the two institutions. These findings imply that the majority of employees are young adults; it is from this group of employees where physical activity is supposed to be concentrated as it is a child-bearing age group, especially for females they end up having excess fat and body weight which is a risk factor for NCDs including hypertension and diabetes.

On the other hand, the male counterparts in the same age range would be dealing with blood pressure regulation as research has indicated that the men's blood pressure is higher than that of their female counterparts through middle age (Kasner, Hunter, & Kariko, 2013; Maranon & Reckelhoff, 2013). In addition, this group should be the most productive age at work. The next dominant age group was 40-49 years which constituted 132 (26.5%) of the study sample from the two institutions.

The age range of 50 years and above had the least respondents 15 (3%) most probably because this is the retirement age for most of the employees especially those in the non-teaching category.

The results showed that in the teaching job category, 79 employees were doctoral holders, and 57 were tutorial fellows or graduate assistants with a master's degree. On the other hand, 129 non-teaching staffs were degree holders, 88 were diploma holders, and 81 were master's holders. For the teaching staff category, the probability of participation in PA may be balanced because majority hold at least master's degree. Hence some may be pursuing their doctoral studies or pursuing their research studies soon after work late into the night. It was expected that the level of education would positively influence participation in PA given the level of knowledge and understanding of the health benefits of participating in PA. These findings are the same as those found by Das et al (2013) where the study had participants with doctoral degrees, master's degrees, bachelor's degree and an associate's degree.

The majority of the respondents indicated that they are parents and from the findings, this might have influenced their PA status. It is assumed that for female employees who are nursing they go home early and concentrate on motherly duties and chances of them coming back to the workplace for the use of the on-site fitness centres are very low.

Although most respondents reported that they engage in PA outside the campus, this was not verifiable because there was no mechanism to follow them up while outside

the institution. Some of the reasons that were cited by those employees who do not use the on-site fitness centres included; professional (occupational) responsibilities, distance from where they live, family responsibilities, high subscription charges as well as not being interested.

5.2 The Status of Employees' Participation in Physical Activity in On-site Fitness Centres.

The first objective was to find out the physical activity status of employees from the two universities. For an individual to be classified as physically active, they should meet the recommended amount of PA. It should be either 30 minutes or more a day of moderate to vigorous activity, for five or more days a week, or 20 or more minutes a day of vigorous PA for three or more days a week or a combination of the two (Haskel, 2007; Sparling, Howard, Dunstan & Owen, 2015).

The results of this investigation concluded that three quarters of university employees from both Kenyatta University and Africa Nazarene University were less or not active especially within their work environment. These results are similar to those of Mwangi and Rintaugu (2017) and Umeifekwem and Onyechi (2014), which revealed that 60% of university employees were not physically active in Kenya and Nigeria respectively. This implies that most people are not adhering to the recommended amount of physical activity, and thus they are at risk of suffering from NCDs.

5.3 Comparison of the Status of Employees' Participation in Physical Activity in the Two Universities

The second objective of the study was to compare the status of employees' participation in physical activity in the two universities. The overall results showed that the management staff had a higher level of participation in PA than non-teaching staff and teaching staff.

In Kenyatta University, non-teaching staff recorded a higher percentage for being physically inactive in on-site fitness centres, followed by management then lastly the teaching staff. These findings were in contrast to the situation in Africa Nazarene University where teaching staff members recorded the highest percentage of inactivity in the on-site fitness centre, followed by non-teaching and management. These findings reveal that the management category from ANU was more active than the other job categories. These findings contradicted with Biernat (2015) who stated that one's higher education had no assurance on one's ability to take care of themselves. The findings reveal that the top management of a private institution (ANU) prioritise their health as compared to their counterparts from KU. This could be because the ANU top management does not have to pay for the gym services as opposed to KU where they subscribe.

Findings from KU showed that teaching staff were more active than both the management staff and non-teaching staff. These findings are similar to those by Agha and Al-Dabbagh (2010), where teaching staff reported higher levels of physical activity than support staff. However, the results from ANU showed that the employees in the management category were more active than those in the non-

teaching and teaching category. These results are similar to those by Cooper and Barton (2016) where non-teaching staff were more active than teaching staff. Umeifekwem and Onyechi (2014) found that there was no significant difference in participation in PA by staff categories.

5.4 The Determinants of Employees' Participation in Physical Activity in the Two Universities.

The results in table 4.8 showed that Kenyatta University employees are supposed to pay for the use of the on-site fitness centre. The findings also revealed that the employees were required to pay a subscription fee of KSh 1,500.00 per month (which will amount to KSh18,000.00 annually) if the payment is made once annually or KSh 3,000.00 per month if they subscribe monthly. However, other respondents reported that they do not pay the subscription fee to access the on-site fitness centre.

This report implies that very few individuals have free access to the facility in KU and these are three management staff, 19 teaching staff members and 18 non-teaching staff. Of the 40 employees who do not pay subscription fee, only 14 of them use the fitness centre. Paying for access to the on-site fitness centre, whether subsidised or not is a barrier to usage of the facility. It is for this reason that employees from KU could be opting to use off-site fitness facilities, as the perception is that using either the on-site fitness centre or the off-site fitness centre is the same as either way one has to pay for access.

Most employees reported that as they are supposed to pay the subscription fee for the use of the on-site fitness centre, the likelihood of them opting to pay for the same services outside campus and somewhere close to home is high. Hence this could have resulted in the reduced attendance rate by employees. These results are consistent with those of Cooper and Barton (2016) and George et al.,(2014) who indicated that high charges were barriers to participation in PA for university employees.

The study also showed that a majority of ANU employees were not expected to pay for access to the on-site fitness centre, and this might have positively impacted on the employees' motivation to participate in PA. Out of 142 employees who indicated that they are not supposed to pay a subscription fee, more than half of them reported that they do physical activities at the on-site fitness centre. The results show that employees are motivated by the employer to participate in PA. This observation is similar to that by Keegan et al., (2016) who also observed that employers do motivate employees by providing easy access to the gym. Once employees get free access to the gym, it will be easier for them to access the facility.

However, there were very few non-teaching employees who are supposed to pay for the use of the facilities in ANU. Since the respondents reported that they are expected to pay a subscription fee on the questionnaire, a face-to-face interview with the facility manager was conducted for clarification on the issue. The fitness centre manager from ANU clarified that bonafide university employees are not supposed to pay a subscription. The assumption is that for those not using the on-site fitness centre for PA is lack of awareness of the free usage of the facility.

The Sport and Recreation department in ANU should be responsible for creating the awareness.

According to Humphreys and Ruseski (2007), there is an assumption that income is a significant determinant which somehow aids participation in physical activity and sport. These assumptions could be the case in this study as the findings show that almost half of the respondents indicated that their monthly net income was below KSh 50 000.00. The low net salary could have been a contributing factor for them not using the on-site fitness centre as the little money that is left after all the expenses might not be enough for them to pay for the use of the on-site fitness centre.

Descriptive statistics were used to achieve objective three. The results showed that participation in PA by university employees was influenced by the psychological state of the respondents as shown in table 4.7. These findings are similar to those of Mayer et al. (2013), where psychological determinants such as self-motivation and support from colleagues were found to be barriers to participation in PA. The social life of respondents was also found to be a determinant of one's participation in PA. Some respondents indicated that friends' support played a role in their use of the onsite fitness centres. The report implies that having a companion to do physical activity motivates the employees to engage in PA. Mailey et al. (2014) observed that family obligations and lack of support hindered the participation in PA of working parents.

Another factor that determined participation in PA by university employees was the environmental set up of the on-site fitness centre. The findings showed that the convenience, physical layout, location, accessibility and the type of the equipment in the fitness centre contributed to one's decision to use the facility. From the findings, the on-site fitness centre should strive to attract employees who are inactive to use the on-site fitness centres. Edmunds et al. (2013) also found out that physical activity was also hindered or facilitated by the gym's physical layout, the state of the gym equipment and the availability of enough room for exercise classes. Although the KU gym has modern equipment, it needs to be expanded to create space for more equipment and floor exercises. As for ANU, even though there is space, there is need for more equipment.

The study also found out that the way the on-site fitness centre operates contributes to an individual's choice to either being physically active or not. The kind of service one gets from the fitness instructors as well as what the facility offers do attract clients. These findings are similar to those found by Cooper and Barton (2016), where employees reported that if the charges to use the fitness facilities were expensive, they would not use the facility.

The employment policies were also found to play a role in the employees' physical activity behaviour. Most respondents from the two universities reported that their employers allow dress down days or casual dress code to encourage active transportation and physical activity at the workplace.

5.5 Comparison of the Determinants of Participation in Physical Activity by Employees between the Two Universities.

The study found out that the social life of the employees from both institutions had no significant difference (table 4.10). Instead, it had a positive influence on their participation in PA in on-site fitness centres. It was established that among university employees, family obligations, work responsibilities and lack of support were some of the barriers that hindered their participation in PA in on-site fitness centres. These findings are similar to those by the Mailey et al. (2014) who found that family responsibilities, guilt, lack of support were some of the barriers for the working parents to participate in PA.

The findings revealed that psychological state does play an essential role in influencing the employees' decision to use the on-site fitness centres. There was a significant difference in the psychological scores of employees from the two institutions. KU employees had higher psychological scores than ANU employees. Although there was no significant difference in emotional influences of employees between the two institutions, they influenced the employees' participation in PA in on-site fitness centres. These results are similar to those by Idowu et al. (2015) who found (94.2%) stroke survivors to be embarrassed to engage in workouts and the belief that training clothes look peculiar on them. Stults-Kolehmainen and Sinha (2014) also found that stressed employees ended up being less physically active.

The findings of the current study indicated that the employees' motivation levels affected their participation in PA. The motivational levels of employees from KU were significantly different from that of employees from ANU. The findings

indicate that the employees had some motivation to engage in PA in the on-site fitness centre.

The self-rating of employees from KU was significantly different from that of employees from ANU). These results showed that the employees from the two universities had a higher self-efficacy and it positively influenced their participation in PA. Edmunds et al. (2013) also found self-efficacy for exercise to be a barrier towards participation in PA at a workplace.

The health condition of employees from ANU as shown in table 4.10 was significantly different from that of employees from KU. Some employees from ANU indicated that their poor health conditions hindered their participation in PA in on-site fitness centres. In general, the health problems that were faced by employees from the two institutions included injury, blood and immune system diseases, organ disease and others conditions. These findings show that the health of employees from ANU influenced their participation in PA while the health of employees from KU reveals that it did not influence their participation in PA. Very few respondents indicated that their health hinders them from using the on-site fitness centre for physical activity. The outcome on employees from ANU is similar with those of Bethancourt et al. (2014) who found out that poor health conditions hindered adult population from engaging in PA.

There was a significant difference in the employment or job policy between employees from ANU and employees from KU. The legal or job policies were the

terms and conditions of the contract signed by employees which either contributed or hindered the employees' participation in physical activity.

A significant difference was found in the environmental scores between employees from ANU and employees from KU. These results imply that for employees from ANU the spacious environment of the facility, convenience of the location, easy accessibility and the availability of modern equipment of the on-site fitness centre had a positive impact on the employees' participation in PA hence their use of the fitness centre.

However, for KU, the environmental aspects of the on-site fitness centre affected the employees. Some employees reported that where the facility is located is not convenient for them and some reported that the facility is not spacious enough. Although there is modern equipment in the gym, it is not adequate to cater for employees because there is no room for them as the facility itself is small. As a result, the facility accommodates few employees at a time. The responses of KU employees who either use or do not use the on-site fitness centre indicated that the fitness centre has no adequate space for them to exercise. The fitness centre manager from KU also reiterated to these complaints in an interview.

He also reported that there are some machines in the storeroom which could not be fitted in the gym because of space. It was also discovered that some employees preferred to go home soon after work to beat the traffic jam; as a result, they do not have any idea on the environmental aspect of the on-site fitness centre. It was because of these environmental reasons that KU employees were not able to use the

on-site fitness centre. These results agree with those by Bardus (2014) and Edmunds et al. (2013), whose findings such as lack of time and limited room for exercise classes were some of the barriers that affect physical activity.

The study also found that the operational mean rank scores for ANU employees (295.38) were higher than that of KU employees (230.87). These findings indicate that the way the on-site fitness centre in ANU operates contributes to motivating employees to use the facility. On the contrary, the on-site fitness centre's operations in KU had no contributory effect on the employees' participation in PA in on-site fitness centres.

From the findings of the study, those employees from KU who did not use the on-site fitness centre were mainly concerned by the failure of the fitness centre to give individual attention to its members, offer affordable membership as well as providing private working areas for their members. The issue of lack of personal attention and private working areas was confirmed by the fitness centre manager during an interview. Hence it can be concluded that these are some of the operational barriers that are hindering KU employees from using the on-site fitness centre. For those employees who are using the facility in the two institutions, their primary concern was that there is no private working area for them to use. This lack of private working space mostly affect those employees whose religion does not allow them to mix with the opposite sex and is very particular about specific dressing.

Cooper and Barton (2016) also observed that most respondents were not interested in using the workplace facility because of high charges. Similar findings reported by Ajibua (2013) cited lack of qualified leisure service managers and unattractive facilities as some of the challenges that employees from higher institutions encountered. One reason that could have affected the mean for both the environmental and operational scores could have been because some respondents had indicated that they had not been to the institutional on-site fitness centre hence were not aware of the operational services and environmental features of the centre.

The wellness directorate, health services department and the physical education and health department are the responsible departments to create the environmental and operational awareness of the on-site fitness centres. This lack of knowledge by employees pointed to the need for the on-site fitness centre managers to among other strategies market the fitness centres to the employees within the institutions.

5.6 Comparison of the Determinants of Participation in Physical Activity across Different Job Categories of University Employees.

The current study compared the determinants of participation in PA across different job categories of university employees. The results indicated significant differences in the emotional, environmental, operational and psychological determinants of participation in PA. However, the study did not find any significant differences in the health, legal, social, motivation and self-rating of employees in different job categories.

The psychological state of the teaching staff was higher than that of the non-teaching staff. The results indicate that the teaching staffs were much better in control of their mental health than the non-teaching staff. The reasons being that the teaching staff was found to have higher emotional, motivational and self-rating scores compared to their non-teaching counterparts.

The emotional level of teaching staff was higher than that of non-teaching staff. The findings depict that the teaching staff are in better control of their emotions , the reason being that their daily life is not stressful and do not have negative emotions to participate in PA. One might say the reason why non-teaching staff have a low emotional score is that they do a lot of administrative work. However, this could not be the reason because some teaching staff are doubling up their teaching work with administrative work, but they were found to be coping well emotionally. Maybe, it could be because non-teaching staff are confined in the office from morning until evening and spend most of the day seated. On the other hand, teaching staff have flexible work schedules and have time to stretch and relieve stress as they move around from one lecture hall to another.

The management had a high mean rank followed by the non-teaching staff then the teaching staff on environmental features or aspects of the on-site fitness centre. Some of the reasons for a higher mean rank was because the management rated high most of the environmental aspects of the facility. For instance, that the physical layout of the on-site fitness centre was quite appealing, that the centre was easily accessible and that the location is convenient. Having enough space, modern looking equipment and that it is easier to travel home after hours spend at the centre were

also rated high by management. These findings are the same with those by Akbar et al (2016) where it was found that environmental factors play a role in staff's participation in PA. However, the teaching staff did not agree with these claims. These assertions by the management members could have been influenced by the fact that the management staff from KU has a different fitness facility from the other members of staff. Hence, the teaching staffs' decision to use the on-site fitness centre was not primarily influenced by what the environment offered.

The study also found out that the operational scores for management was higher than that of the non-teaching staff and teaching staff. These results imply that the teaching staff was the last group to be contented with the way the on-site fitness centre operates. Some of their reasons included not getting individual attention, the centre being small and not offering private working areas. This lack of contentment could explain the reasons most of them use the off-campus facility.

5.7 Comparison of the Contribution of each of the Determinants of Participation in Physical Activity in On-Site Fitness Centres on University Employees.

The sixth objective was to compare the determinants of participation in physical activity in on-site fitness centres by employees between the two universities. The study findings showed that the self-rating, health conditions and the operational determinants were the significant predictors of participation in PA. This means that the way in which one rates him or herself contributed to one's participation in PA. The health condition of an individual their role as both an obstruction to and a promoter for participation in PA at the on-site fitness centres.

The way the on-site fitness centre operates had an influence on one's decision to participate in PA. Bethancourt et al (2014) and Bauman (2012) also found health to be a strong predictor of physical activity levels.

CHAPTER SIX: SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter presents a summary of the key findings, conclusions and recommendations for practice, policy and further studies.

6.1 Summary of Findings

6.1.1 Status of Employees' Participation in Physical Activity

The first objective of the study was to ascertain the status of employees' participation in physical activity in the two universities. Hence, the study found that most university employees from both KU and ANU were not physically active in on-site fitness centres.

6.1.2 Comparison of Employees' Physical Activity Status

The study found that there was a significant difference in the status of participation in PA by university employees in the two universities. The study also found that generally, the management staff were more active compared to teaching staff and non-teaching staff from the two universities. After looking at the physical activity status of employees per university, the teaching staff from KU was more active compared to both the management and non-teaching staff. However, these findings in Kenyatta University are contrary to the situation in Africa Nazarene University, where employees in management were more active than teaching and non-teaching staff.

6.1.3 The Determinants of Employees' Participation in Physical Activity

The study's third objective was to establish the factors that determined the employees' participation in on-site fitness centres. The findings indicated that the social life of the university employees did not hinder their participation in PA in on-site fitness centres and this was the same in the two universities.

The scores of the psychological state of the employees were higher in all the universities. The influence of the emotions of employees was found to be the same within the universities and in a way positively influencing them to participate in PA in on-site fitness centres. The findings also reveal that the motivation levels of the employees from the two institutions were both high but significantly different with KU having the higher scores. The employees were motivated to engage in PA in the on-site fitness centres. The respondents' self-confidence was high as indicated by the scores of self-rating but there was a difference in the degrees of confidence displayed by employees between the two institutions.

The study also found that the general health scores of employees from KU were below the average score depicting that health conditions did not hinder employees' participation in PA. However, the health scores for ANU employees were higher meaning that some employees in this university have health conditions that inhibit them from participating in PA.

The findings also show that both the environmental and operational scores from KU employees were low indicating that the employees' participation in PA in on-site fitness centres was hindered by the environmental set up of the fitness centre as well

as the way the centre operates. However, this is contrary to the environmental and operational aspects in ANU.

6.1.4 Comparison of the Determinants of Participation in Physical Activity by Employees between the Two Universities

The findings of the study indicated that there was a significant difference in the environmental, operational, employment and health determinants of participation in PA amongst KU and ANU employees, with ANU having a higher mean rank in all these determinants. The findings also revealed that KU employees displayed a higher significant difference in the psychological state of the employees than ANU employees.

6.1.5 Comparison of the Determinants of Participation in Physical Activity across Different Categories of University Employees

The fifth objective of the study was to compare the determinants of participation in PA among the three different staff categories. The findings showed a significant difference in the emotional levels of teaching staff and non-teaching staff with the former having higher scores than the latter. The Environmental scores were found to be significant between the management and teaching staff as well as between management and non-teaching staff. More so, the operational scores were significantly higher in management than in any other job category with the teaching staff scoring the least.

6.1.6 Comparison of the Influence of each of the Determinants of Participation in Physical Activity in On-Fitness Centres on University Employees

The sixth objective was to compare the influence of each of the determinants of participation in physical activity in on-site fitness centres on university employees. The findings showed that the most influential determinants were the health condition and self-rating with the same score, followed by the operational, social, environmental, motivational and lastly emotional.

6.2 Conclusions

Based on the findings, the following conclusions were arrived at:

- i. The majority university employees were not active or were less active ($M = 38.20$) in consideration of the use of the on-site fitness centre. This could be attributed to family responsibilities, professional (occupational) responsibilities, the distance from where they stayed as well as preference to outdoor and off-campus facilities. As for KU large membership subscriptions could have also played a significant role.
- ii. There was a significant difference in the physical activity status between KU and ANU employees in favour of ANU.
- iii. Management staff from ANU was more physically active in on-site fitness centres compared to KU management staff.
- iv. Non-teaching staff from KU were the least physically active followed by management then lastly by the teaching staff.

- v. Teaching staff from ANU were the least physically active followed by non-teaching staff then management.
- vi. Motivational, self-rating, environmental, health, employment and operational factors had a significant influence on PA where those in KU were influenced more by motivational and self-rating compared to those in ANU who were influenced more by the environmental, operational, employment and health factors.
- vii. The emotional, psychological, environmental and operational factors had a significant influence on PA participation across different job categories, where those in the management were influenced more by the environmental and operational factors as compared to teaching and non-teaching staff who were influenced more by the emotional, psychological and the operational determinants.
- viii. The self-rating, health conditions and the operational determinants were the significant predictors of participation in PA.

6.3 Recommendations

Following the results of the study and the conclusions the following recommendations are made for practice, policy and further research:

6.3.1 Recommendations for Practice

- i. University employees should be sensitised to be concerned about their wellbeing by following the weekly physical activity recommended by the American College of Sports Medicine (ACSM) (Haskel et al., 2007). This should be done by the members of staff from the on-site fitness centres.

- ii. The on-site fitness centre should employ personal trainers who will give individual attention to members.
- iii. The trainers should also be equipped to assist those employees with medical conditions which are a limiting factor to exercise, so that tailor made programmes can be developed for such employees hence promoting personalised fitness instruction especially in KU gym.
- iv. The university's marketing department, health services department and the department of physical education and health should spearhead the environmental and operational awareness of the on-site fitness centres.
- v. The fitness trainers should guide the clients on the frequency, intensity, time and type of exercise that they should do to achieve the recommended PA.

6.3.2 Recommendations for Policy

- i. The facility should have a system of compensating for unused days one would have paid for but missed.
- ii. The subscription fee for KU should be lowered so that all employees will be able to afford it or provide free access as a way of motivating members towards living actively.
- iii. Fitness packages should be equally available for all employees no matter the job category.
- iv. Universities should entice workers into using on-site fitness centres by creating more space and favourable environment in their health and fitness facilities

6.3.3 Recommendations for Further Studies

- i. It is recommended that research is conducted to find out the determinants of participation in physical activity in on-site fitness centres for casual employees who end up being assimilated as permanent members.
- ii. The current study was a case of university employees; further studies need to be carried out on the entire university community.
- iii. Another study can be done on the attitudes and motivations of university employees towards PA.

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APPENDICES

Appendix A: Map of Study Area, Kenya



Source: Google maps

Appendix B: Letter of introduction to the office of the Vice Chancellor

Matilda Mukaro
Department of Recreation Management and Exercise Science
Kenyatta University
P.O Box 43844-00100
Nairobi
Email address: matildam48@gmail.com
Mobile No: 0700184346

18 April, 2017

The Vice Chancellor
Through: The Deputy Vice Chancellor Research
Kenyatta University
P.O Box 43844-00100
Nairobi

Dear Sir

**RE: APPLICATION FOR PERMISSION TO CARRY OUT RESEARCH
AT KENYATTA UNIVERSITY.**

My name is Matilda Mukaro a student from Kenyatta University. I am conducting a research titled “Determinants of participation in physical activity in on-site fitness centres: A case of employees at Kenyatta University and Africa Nazarene University, Kenya” for my Master’s degree in Exercise and Sports science. In this study the term on-site fitness centre will be referred to as a facility within work station designed to promote health of the workers through participation in physical activity.

I am kindly asking for your permission to carry out this research at Kenyatta University with your staff members as the participants. It is hoped that through this study the university will gain more in-depth understanding of factors that influence employees’ participation in physical activity.

Your assistance will be greatly appreciated.

Yours Sincerely



Matilda Mukaro
(H108F/29180/2014)

Appendix C: Letter of introduction to the office of the Vice Chancellor

Matilda Mukaro
Department of Recreation Management and Exercise Science
Kenyatta University
P.O Box 43844-00100
Nairobi, Kenya

18 April, 2017

The Vice Chancellor
Through: The Deputy Vice Chancellor Academic
Africa Nazarene University
Magadi Rd,
Ongata Rongai
Kenya

Dear Sir/Madam

**RE: APPLICATION FOR PERMISSION TO CARRY OUT RESEARCH
AT KENYATTA UNIVERSITY.**

My name is Matilda Mukaro a student from Kenyatta University. I am conducting a research titled “Determinants of participation in physical activity in on-site fitness centres: A case of employees at Kenyatta University and Africa Nazarene University, Kenya” for my Master’s degree in Exercise and Sports science. In this study the term on-site fitness centre will be referred to as a facility within work station designed to promote health of the workers through participation in physical activity.

I am kindly asking for your permission to carry out this research at Africa Nazarene University with your staff members as the participants. It is hoped that through this study the university will gain more in-depth understanding of factors that influence employees’ participation in physical activity.

Your assistance will be greatly appreciated.

Yours Sincerely



Matilda Mukaro
(H108F/29180/2014)

Appendix D: Consent Form for Respondents

Matilda Mukaro
 Department of Recreation Management and Exercise Science
 Kenyatta University
 P.O Box 43844-00100
 Nairobi, Kenya
 Email:matildam48@gmail.com
 Cell phone +254 700 184 346/ +263 773 547 044

INTRODUCTION

I am a Masters' student at Kenyatta University in the Department of Recreation Management and Exercise Science. You have been purposively selected to take part in the study on "Determinants of participation in physical activity in on-site fitness centres: A case of employees at Kenyatta University and Africa Nazarene University, Kenya". You are kindly requested to participate in this study because you are part of the university in which the study is concerned. Your participation will be wholly voluntary. Please, truthfully answer the set of questions and be informed that your views will be held strictly confidential and used only for the purpose of study.

DECLARATION

I have read and understood the information concerning my participation in the study. I will answer the questions as honestly and truthfully as possible. By signing and returning this consent form, I will participate in the study voluntarily.

TO BE COMPLETED BY THE INVESTIGATOR

I certify that I have read the above consent procedure to the participant.

Signature of Investigator _____ Date_____

TO BE COMPLETED BY PARTICIPANT

Signature of Participant _____ Date_____

Appendix E: Questionnaire for University employees

Dear Respondent

My name is Matilda Mukaro a student from Kenyatta University. I am conducting a research titled “Determinants of participation in physical activity in on-site fitness centres: A case of employees at Kenyatta University and Africa Nazarene University, Kenya” for my Master’s degree in Exercise and Sports Science. You have been identified as one of the participants in this study. Kindly fill this questionnaire for me. The information you give will be treated as confidential and will be used for academic purposes only.

Instructions:

- Put a tick in the appropriate box.
- Fill in the provided space with needed information.

Please tick one box for each question.

Section A: Demographic data

1. Name of University	Kenyatta University	Africa Nazarene University

2. Gender	Female	Male

3. Age	<30	30-39	40-49	50-59	> 59

4. Highest education qualification	Certificate	Diploma	First degree	Master’s degree	Doctorate	Post-Doctorate

5. Please indicate your job category	Management	Teaching staff	Administrative	Technician	Clerical	Other (state)

6 Marital status	Single	Married	Divorced	Widowed

7. Do you have children?	Yes	No

Section B: Physical activity participation status in on-site fitness centres

Does this accurately describe you?

Never = 1, Rarely = 2, Sometimes = 3, Often = 4, Always = 5

	1	2	3	4	5
1. I do physical activities in on-site fitness centre/facility					

2. I do some light physical activities in on-site fitness centre/facility					
3. I do some light / moderate physical activity every week in on-site fitness centre/facility.					
4. I do moderate / high intensity physical activities every week, but less than 30 minutes a day or 5 days a week, in on-site fitness centres/facility.					
5. I do vigorous physical activities every week, but less than 20 minutes a day or 3 days a week, in on-site fitness centres/facility.					
6. I do 30 minutes or more a day of moderate physical activities, 5 or more days a week, in on-site fitness centres/facility.					
7. I do 20 minutes or more a day of vigorous physical activities, 3 or more days a week, in on-site fitness centres/facility.					

8. I do physical activities	outside campus		inside campus	
	Yes	No	Yes	No

9. If you do physical activities outside campus or Individually (as indicated in 8 above, do you meet the recommended amount of physical activities which are stated in question 6 and 7	Yes	No

10. What could be the most important reason for not using the on-site fitness centre?

Family responsibilities	Distance from where I stay	Occupational responsibilities	Religious responsibilities	Others (specify)

Section C: Socio-economic versus participation in physical activity

1. In the following table, kindly tick appropriately to indicate how your social life influences your participation in physical activity in the on-site fitness centre?

Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly Agree = 5

	Strongly Disagree		Strongly Agree		
My friends support or encourage my physical activity	1	2	3	4	5
The people I spend my free time with do physical activity	1	2	3	4	5
I have someone to do physical activity with	1	2	3	4	5
I should rather spend that time with my family	1	2	3	4	5
Cultural expectations permit me	1	2	3	4	5
My job position does not hinder my participation					

2. For how long have you been with your current employer?	Less than 1 year	More than 1 year

3. Please	Below 50 000	50001-100000	100 000 - 150 000	150 001-200 000	200 001-250 000	250 001-300 000	300 001 - 350 000	350 001 - 400 000	>400 000
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indicate your net income range (in Ksh)									

4. Are you expected to pay subscription fee for the use of on-site fitness centre/ facility	Yes	No

5. If answer to question 4 is yes, do you consider the subscription fee to be low or high?	Low	Average	High

6. Does the subscription fee influence your decision to attend the facility?	Yes	No

Section D: Health Determinants

1. Do you have any pre-existing health condition/s that hinders you from participating in physical activity?	Yes	No

2. If you answered YES to question 1 indicate the category of the condition	Organ disease	Blood and Immune System Diseases	Cancer	Injury	Other (state)

3. During your routine health check-up did the doctor or other health professional recommend that you begin or continue to do any type of exercise of physical activity?	Yes	No

4. What type of exercise or physical activities did the doctor or other health professional (e.g. fitness instructors) recommend that you **begin** or **continue** to do? (Tick whichever is applicable)

Aerobics and dance	
Riding a bicycle or exercise bike	
Jogging or running	
Swimming laps or water exercises	
Walking	
Exercises to increase muscle strength	
Stretching exercises	
Indicate others	

5. Are you adhering to these recommendations?	Yes	Somehow	No

6. Do you know the health importance of exercises?	Yes	Somehow	No

7. If you answered yes to question 6 state some of the importance of exercises

.....

8. Which type of exercises are you currently engaged in as a result of your knowledge about physical activity and its positive effects to your health? (Tick more than one if necessary)

Aerobics and dance	
Riding a bicycle or exercise bike	
Running	
Swimming	
Walking	
Exercises to increase muscle strength	
Stretching exercises	
Indicate others	

Section E: Psychological determinants

Kindly respond as it applies to you.

Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly Agree = 5

1. Influence of emotions on your participation in physical activity at on-site fitness centre.

	Strongly Disagree			Strongly Agree	
Daily life is not stressful for physical activity	1	2	3	4	5
I have no negative emotions which prevent me from doing physical activity	1	2	3	4	5
When I think about doing physical activity, I do not worry about my appearance in a training kit.	1	2	3	4	5

2. Motivation and goals to participate in physical activity.

	Strongly Disagree			Strongly Agree	
I feel like doing physical activity	1	2	3	4	5
I need to be persuaded to do physical activity	1	2	3	4	5
I feel self-motivated to do physical activity	1	2	3	4	5
I feel motivated when I engage in physical activity with my friends	1	2	3	4	5
I do not need monetary rewards to participate in physical activity	1	2	3	4	5

3. How do you rate yourself when it comes to participation in physical activity?

	Strongly Disagree			Strongly Agree	
I feel confident when doing physical activity	1	2	3	4	5
I find it comfortable doing physical activity	1	2	3	4	5
I find it motivating when I see others doing well at physical activity (e.g. watching others run for a long time on the	1	2	3	4	5

treadmill)					
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Section F: Environmental determinants

Have you ever been to the institutional on-site Fitness centre/facility? Yes: No:

If YES, kindly respond to the following as it applies to you.

Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly Agree = 5

	How do you rate your EXPECTATIONS					How do you rate the REALITY				
	Strongly Disagree		Strongly Agree			Strongly Disagree		Strongly Agree		
1. The fitness centre's physical layout is quite appealing.	1	2	3	4	5	1	2	3	4	5
2. The fitness centre has enough space for classes.	1	2	3	4	5	1	2	3	4	5
3. The location of the fitness centre is very convenient.	1	2	3	4	5	1	2	3	4	5
4. It is easier for me to travel home after hours spent at the fitness centre	1	2	3	4	5	1	2	3	4	5
5. The fitness centre is easily accessible	1	2	3	4	5	1	2	3	4	5
6. The fitness centre has modern-looking equipment.	1	2	3	4	5	1	2	3	4	5

Section G: Operational Determinants

	How do you rate the service level you EXPECT					How do you rate the service level you RECEIVED				
	Strongly Disagree		Strongly Agree			Strongly Disagree		Strongly Agree		
1. The training instructors at the fitness centres display a high level of professionalism when they conduct classes	1	2	3	4	5	1	2	3	4	5
2. The employees at the fitness centre have professional knowledge.	1	2	3	4	5	1	2	3	4	5
3. The employees at the fitness centre give prompt service to members.	1	2	3	4	5	1	2	3	4	5
4. The employees at the fitness centre show interest at member's progress.	1	2	3	4	5	1	2	3	4	5
5. The fitness centre gives members individual attention.	1	2	3	4	5	1	2	3	4	5
6. The fitness centre offers membership that is affordable to purchase.	1	2	3	4	5	1	2	3	4	5
7. The employees at the fitness centre	1	2	3	4	5	1	2	3	4	5

instil confidence in members.										
8. The fitness centre have operating time convenient to all their members	1	2	3	4	5	1	2	3	4	5
9. The fitness centre offers private working areas to their members	1	2	3	4	5	1	2	3	4	5
10. The fitness centre offer the exactly activities that I want	1	2	3	4	5	1	2	3	4	5
11. The fitness centre provide changing rooms, lockers or showers	1	2	3	4	5	1	2	3	4	5

Section H: Legal/Job policy determinants

1. Which of the membership package do you receive from your employer for the fitness club	Fully paid membership	Partially/ subsidized paid membership	No Package for fitness club	Not sure

2. Does your employer allow employees to use paid time (not lunch or breaks) to be active during the work day	Yes	No	Sometimes (specify)	Not Sure

	Yes	No	Not sure
3. Does your employer give incentives or rewards for employees who are physically active?			
4. Is there a clause in your job contract/ terms of employment which require or motivate you to be physically active?			
5. Is there a clause in your job contract/ terms of employment which makes you hate or demotivate you to go to be physically active?			
6. Does your employer allow dress down days or casual dress code to encourage active transportation and physical activity at workplace?			
7. Does your employer provide flexible working hours to allow for physical activity before during and/or after work?			

Appendix F: Interview Guide for Managers for the Fitness Centre

Dear Respondent,

My name is Matilda Mukaro from Kenyatta University in Kenya and I am conducting my research for my Master's in Exercise and Sports science. The title for my research project is "Determinants of participation in physical activity in on-site fitness centres: A case of employees at Kenyatta University and Africa Nazarene University, Kenya". You have been identified as one the participants in this study. Kindly answer the questions for me. The information you give will be treated as confidential and will be used for academic purposes only.

Section A: Demographic data

1. Name of university:		
2. Gender	Female	Male

3. Age	<30	30-39	40-49	50-59	> 59

4. Highest education qualification	Diploma	First degree	Master's degree	Doctorate	Post-Doctorate

Section B: Operational

1. What kind of services do you provide to your members?

Aerobic classes?	Yes	No
Zumba classes?		
Swimming classes?		
Jogging /running group?		

Biking /cycling group?		
Walking group?		
Weight lifting classes?		
Any other (specify)		

2. Does your fitness centre have fitness trainers	Yes	No		
3. How many fitness trainers are in your fitness centre?	None	1	2	≥ 3

4. What are your trainers' qualifications? (Indicate the number for each level of qualification)	Certificate	Diploma	First degree	Master's Degree

5. Do you offer on the job training for your trainers?	Yes	Somehow yes	No

6. What time do you open?

Morning	Mid-morning	Afternoon	Evening

7. Do you open on weekends?	Yes	No

8. Do staff members receive Discounts subsidized rates?	Yes	No

9. Do men and women exercise in the same place?	Yes	No

10. Do you offer personal training to your clients?	Yes	Somehow yes	No
11. How busy is the gym?	Not busy	Busy	Very busy

12. During which time is the gym busy?	Before working hours	During lunch time	During working hours	After working hours

Appendix G: Interview guide for Fitness Trainers for the Fitness Centre

Dear Respondent,

My name is Matilda Mukaro from Kenyatta University in Kenya and I am conducting my research for my Master's in Exercise and Sports science. The title for my research project is "Determinants of participation in physical activity in on-site fitness centres: A case of employees at Kenyatta University and Africa Nazarene University, Kenya". You have been identified as one the participants in this study. Kindly answer the questions for me. The information you give will be treated as confidential and will be used for academic purposes only.

Section A: Demographic data

1. Name of university:		
2. Gender	Female	Male

3. Age	<30	30-39	40-49	50-59	> 59

4. Highest education qualification	Certificate	Diploma	First degree	Master's degree

5. How many hours do you work per day?	< 6 hours	6-8 hours	8-10 hours	> 10 hours

6. Does the staff work well as a team here?	Yes	Somehow yes	No

7. How do you keep your fitness knowledge up to date?

I do not need it	Through reading and researching	Through consultations	Through upgrading courses

8. Are you Cardiopulmonary resuscitation (CPR) certified?

	Yes	No

9. Do you offer personal training to your clients?

	Yes	Somehow yes	No

10. Do you feel responsible for your clients?

	Yes	Somehow yes	No

11. Do you receive on the job training from your employer

	Yes	Somehow yes	No

Appendix H: Checklist for Gym Equipment and Layout

Name of University _____

STRETCH AREA

#	EQUIPMENT	Yes	No
1.	Medicine balls		
2.	Yoga mats		
3.			

CARDIOVASCULAR (CV) AREA

#	EQUIPMENT	Yes	No
4.	Treadmills		
5.	Upper Body Ergometers		
6.	Cross trainers		
7.	Bicycles		
8.	Step machines		
9.	Rowing machines		
10.	Elliptical Cross trainers		
11.	stair climbers		
12.	Skipping ropes		

RESISTANCE AREA

#	EQUIPMENT	Yes	No
13.	Pull-up bar		
14.	Rowing machine		
15.	Leverage		
16.	Smith machine		
17.	Multi-gym		
18.	Multi bench		
19.	Back extension		
20.	Tricep / arm extension		

21.	Abdominal machine		
22.	Shoulder press		

FREE WEIGHTS AREA

#	EQUIPMENT	Yes	No
23.	Dumbbells		
24.	Barbells		
25.	Kettlebells		

SPINNING ROOM

#	EQUIPMENT	Yes	No
26.	Spinning bikes		
27.			

CHANGING ROOMS

#	EQUIPMENT	Yes	No
28.	Changing areas		
29.	Toilets		
30.	Showers		
31.	Lockers		
32.	Vanity area with mirrors and hair dryers		

BOXING EQUIPMENT

#	EQUIPMENT	Yes	No
33.	16-ounce gloves for basic boxing drills		
34.	Target mitts for the trainer/coach		
35.	Heavy bag for striking		
36.	Headgear and shin guards for partner drills		

Appendix I: Approval of Research Proposal



KENYATTA UNIVERSITY
GRADUATE SCHOOL

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

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Internal Memo

FROM: Dean, Graduate School

DATE: 17th February, 2017

TO: Matkda Mukaro
C/o Recreation Management &
Exercise Department.

REF: H108F/29180/2014

SUBJECT: APPROVAL OF RESEARCH PROPOSAL
=====

We acknowledge receipt of your revised Research Proposal as per our recommendations raised by the Graduate School Board of 23rd November, 2016 entitled "Determinants of Participation in Physical Activity in On-Site Fitness Centres: A Case of Kenyatta University and Africa Nazarene University, Kenya".

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

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.

Thank you.



EDWIN OJONGU
FOR: DEAN, GRADUATE SCHOOL

CC: Chairman, Recreation Management and Exercise Science Department

Supervisors:

1. Dr. Jane Kamau
C/o Recreation Management and Exercise Science Department
Kenyatta University
2. Dr. Francis Mundia Mwangi
C/o Recreation Management and Exercise Science Department
Kenyatta University

EDV/rws

Appendix J: Research Authorisation KU



**KENYATTA UNIVERSITY
GRADUATE SCHOOL**

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

P.O. Box 43844, 00100

NAIROBI, KENYA

Tel. 8710901 Ext. 57530

Website: www.ku.ac.ke

Our Ref: H108F/29180/2014

DATE: 17th February, 2017

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

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MUKARO MATILDA – REG. NO. H108F/29180/2014

I write to introduce Ms. Mukaro Matilda who is a Postgraduate Student of this University. She is registered for M.Sc degree programme in the Department of Recreation Management and Exercise Science.

Ms. Mukaro intends to conduct research for an M.Sc. Proposal entitled, "Determinants of Participation in Physical Activity in On-Site Fitness Centres: A Case of Kenyatta University and Africa Nazarene University, Kenya".

Any assistance given will be highly appreciated.

Yours faithfully,



MRS. LUCY KAMUKAMA
FOR: DEAN, GRADUATE SCHOOL

60/rev

Appendix K: Ethics Approval



**KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE**

Fax: 8711242/8711575
 Email: kuerc.chairman@ku.ac.ke
kuerc.secretary@ku.ac.ke
 Website: www.ku.ac.ke

P. O. Box 43844,
 Nairobi, 00100
 Tel: 8710901/12

Our Ref: KU/ERC/APPROVAL/VOL.1 (28)

Date: 17th March 2017

Matilda Mukaro
 Kenyatta University
 P.O. Box 43844 – 00100
 NAIROBI

Dear Matilda

APPLICATION NUMBER PKU/640/1722 – ‘Determinants of Participation in Physical Activity in On-site Fitness Centres: A Case of Kenyatta University and Africa Nazarene University, Kenya’

1. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic ‘**Determinants of Participation in Physical Activity in On-site fitness Centres: A Case of Kenyatta University and Africa Nazarene University, Kenya**’ received on 24th February, 2017 and discussed on 14th March 2017.

2. APPLICANT

Matilda Mukaro

3. SITE

Kenyatta University and Nazarene University

4. DECISION

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (Section 7.2.1.3) and the Kenyatta University Review Committee Guidelines **AND APPROVED that the research may proceed for a period of ONE year from 17th of March, 2017.**

ADVICE/CONDITIONS

- i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.

- ii. Serious and unexpected adverse events related to the conduct of the study are reported to this committee immediately they occur.
- iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
- iv. Submit an electronic copy of the protocol to KUERC.

When replying, kindly quote the application number above.
If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KUERC a copy of the letter.



DR. TITUS KANG'WA
CHAIRMAN ETHICS REVIEW COMMITTEE

I Matilda Mukano accept the advice given and will fulfill the conditions therein.

Signature Mukano Dated this day of... 27 March2017.

cc. DVC: Research Innovation and Outreach

Appendix L: Research Authorization 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, Usaki House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. **NACOSTI/P/17/59162/16512**

Date: **4th April, 2017**

Matilda Mukaro
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Determinants of participation in physical activity in on-site fitness centres: A case of Kenyatta University and Africa Nazarene University, Kenya,*" I am pleased to inform you that you have been authorized to undertake research in **Kajiado and Kiambu Counties** for the period ending **4th April, 2018**.

You are advised to report to **the Vice Chancellors of Kenyatta University and Africa Nazarene University, the County Commissioners and the County Directors of Education, Kajiado and Kiambu Counties** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.


BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:


The Vice Chancellor
Kenyatta University.

The Vice Chancellor
Africa Nazarene University.

Appendix M: Research Clearance Permit

THIS IS TO CERTIFY THAT:
MS. MATILDA MUKARO
of KENYATTA UNIVERSITY, 9038/3,
kambuzuma-1263 harare, has been
permitted to conduct research in
Kajiado , Kiambu Counties
on the topic: DETERMINANTS OF
PARTICIPATION IN PHYSICAL ACTIVITY
IN ON-SITE FITNESS CENTRES: A CASE
OF KENYATTA UNIVERSITY AND AFRICA
NAZARENE UNIVERSITY, KENYA.
for the period ending:
4th April, 2018

Permit No : NACOSTI/P/17/59162/16512
Date Of Issue : 4th April, 2017
Fee Recieved :Ksh 2000



[Signature]
Director General
National Commission for Science, Technology and Innovation

Applicant's Signature

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officer will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice



REPUBLIC OF KENYA



National Commission for Science, Technology and Innovation
RESEACH CLEARANCE PERMIT

Serial No. A13669

CONDITIONS: see back page

Appendix N: Data Collection Authorisation KU



KENYATTA UNIVERSITY

**OFFICE OF DEPUTY VICE-CHANCELLOR, RESEARCH,
INNOVATION AND OUTREACH**

Ref: KU/DVCR/RCR/VOL.3/27

Ms. Matilda Mukaro,
Recreation Mgt. & Exercise Science
KENYATTA UNIVERSITY

P. O. Box 43844 - 00100
Nairobi, Kenya
Tel. 254-20-810901 Ext. 026
E-mail: dvc-rio@ku.ac.ke

28th April, 2017

Dear Ms. Mukaro,

RE: REQUEST TO COLLECT RESEARCH DATA AT KENYATTA UNIVERSITY

This is in reference to your letter dated 18th April, 2017 requesting for authorization to collect research data at Kenyatta University on the topic: *Determinants of Participation in Physical Activity in On-Site Fitness Centres: A Case of Kenyatta University and Africa Nazarene University, Kenya* towards a Master of Science (Exercise and Sports Science) of Kenyatta University.

I am happy to inform you that the Vice-Chancellor has approved your request to collect data. It has been noted that your data will be collected from respondents who are Management, teaching and non-teaching staff.

Yours Sincerely,

A handwritten signature in black ink, appearing to be 'F/Q Gravenir', written over a vertical line.

Prof. F/Q Gravenir
Deputy Vice-Chancellor
Research, Innovation & Outreach
cc. Vice-Chancellor
Deputy Vice-Chancellor, Administration.

Appendix O: Data Collection Authorisation ANU



9th May, 2017

Ms. Matilda Mukaro
Kenyatta University
P.O. Box 43844-00100
NAIROBI

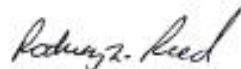
Re: Permission to Collect Data for Research Work

We acknowledge with thanks receipt of your letter requesting us to grant you permission to collect data for your Thesis "Determinants of participation in physical activity in on-site fitness centres: A case of Kenyatta University and Africa Nazarene University, Kenya."

We are pleased to inform you that your request has been granted with effect from today the 12th May, 2017. Ensure you have identified the respondents through the Deans/Chairs of the various Schools/departments.

However, you are requested to submit a copy of your report to the office of the DVC Academic Affairs after you are through with data collection.

With best wishes.



Prof. Rodney Reed.
DVC, Academic Affairs.