VIRTUAL TEAMS MANAGEMENT PRACTICES AND PROJECT PERFORMANCE IN SELECTED PUBLIC UNIVERSITIES IN KENYA

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D53/PT/33391/2015

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILMENT OF THE AWARD OF DEGREE OF MASTER OF BUSINESS ADMINISTRATION (PROJECT MANAGEMENT OPTION).

KENYATTA UNIVERSITY

MARCH, 2018.

DECLARATION

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

Signature_____   Date_____

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I confirm that the work in this project was done by the candidate under my supervision.

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DEDICATION

I wish to dedicate this research project to my family members for their love, patience and encouragement during the entire period of sleepless nights and lots of struggles. I also wish to dedicate this work to all my dear friends and colleagues who have always been there for me in times of triumph and failure. Their love, support and understanding can never be appreciated enough.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATIONS AND ACRONYMS

HLIs: Higher Learning Institutions

VT: Virtual Teams

RBV: Resource Based View

AET: Affective Event Theory

SET: Social Exchange Theory

OPERATIONAL DEFINITION OF TERMS

Commitment: The degree to which an employee identifies with the goals and values of the organisation, and is willing to exert effort to help it succeed is termed employee commitment

Higher Learning Instittitions: Higher learning institutions are academic communities that are saddled with the responsibilities of providing high quality education to meet the demands of people and the society at large.

Project Performance: The degree to which implementation of a project lead to the attainment of cost reduction, customer satisfaction, and efficiency in an organisation.

Recognition: Practice Include both the monetary and non-monetary rewards through which an organisation tangibly signals its appreciation of quality work achievements.

Virtual Team: As a temporal, spatial, cultural, and dispersed group of workers who are assembled and linked together by means of information and communication technologies for the purpose of accomplishing organisational tasks or goals.

ABSTRACT

Documented evidence has shown the benefits and challenges of using virtual teams arrangement in the execution and implementation of projects, however, these studies have been limited in the educational sector. Universities in Kenya execute and implement various projects for the purpose of delivering good education services to the teeming set of people in the society and in order to deliver its core mandate several projects that permeate every units or departments are embarked by the management of these universities. Studies have shown that projects have been successfully executed and implemented in many organisations via virtual team arrangement and benefits attached to such arrangement have been earned. The benefits such as reduced costs, project efficiency, and satisfaction on the part of the customers are the project success recorded in many organisations across the world. However, studies have also pointed out that project performance has met with some brick wall and this has impaired the activities of most organisations to communicate service delivery to the members of the public. Studies have been mounted to find out how organisation can reap from benefits of virtual team to attain project performance in organisations but such studies are limited in educational sector, especially in Kenya. This study therefore sought to investigate the effectiveness of virtual teams on project performance, in selected public universities in Kenya. Specifically, the study sought to examine the effect of communication on project performance; to investigate the effect of recognition practice on project performance, and to examine the effect of information sharing on the project performance in selected public universities in Kenya and to test the mediating effect of employee commitment on the relationship between virtual team effectiveness and project performance. The constructs of this study were operationalized and grounded on three existing theories such as Resource-Based View Theory, Social Exchange Theory, and Affective Event Theory. This study was guided by positivist approach and both descriptive and cross-sectional research design was adopted. The study targeted population was the three universities selected as unit of analysis and a sample of 304 respondents drawn from both teaching and non-teaching staff in 3 public universities using Taro Yamane approach formed the unit of observation. Data was collected using closed-ended questionnaire whose reliability score was above the acceptable level. The reported findings are based on a relatively high response rate. The descriptive characteristics of the variables measured through the mean ranked between neither agree nor disagree to the level of agree and registered low variability. The inferential test for diagnostics on multicollinearity showed that both the VIF and Tolerance levels were within the acceptable range and that the findings were not invalidated by the influence of multicollinearity. The regression results testing the direct relationships indicated that while effective communication and recognition practices had a significant positive effect on project performance, information sharing was not significant. Employee commitment mediated the relationship between Virtual Team Management practices and project performance in the surveyed public universities in Kenya. The study recommends that virtual settings should be equipped with effective communication facilities and gadgets, management of an organisation should constantly embrace attitude of appreciating its workforce so as to create a sense of belonging within the organisation and to improve in the aspect of sharing important information to develop trust which in turn leads to performance on the part of virtual team members in the organisation.

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CHAPTER ONE

INTRODUCTION
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1.1 Background of the study

Project performance, in project management research, is being synonymously related to project success, and when project seems successful it is expected to have met time, budgets, and performance goals (Shnhar, *et al*., 2001). Organisations create products, services, and results via undertaking of some projects (Zuofa & Ochieng, 2017). Project teams are therefore formed at the initiation of a project and these teams are expected to execute and implement the projects to performance or success. The project teams are, therefore, the combination of human element who is assembled for a definite time frame to meet the specific of the projects (Zuofa & Ochieng , 2017). As organisations expand and spread beyond immediate location in terms of implementing the projects, the need for project virtual teams remains unavoidable. The advancement in communication technology and globalisation impact have also mounted pressure on organisation to meet the needs and demands of people (clients and customers) across the globe, and as a result, the need to assembled virtual teams to execute a project becomes inevitable (Sandoff & Nillsson, 2016).

In today's dynamic and competitive environments, organisations in different countries of the world have gone virtual basically to improve performance so as to meet the needs and demands of the people and to enjoy substantial part of the market. Apart from meeting the demands of people and attaining a leadership in the market, the benefits attached to virtuality of organisations are of great immense and have spurred many organisations to transcend from bureaucratic and traditional structures to virtual setting arrangement. Helms and Raiszadeh, (2002) discuss these benefits as the performances or successes that are desired by many organisations which include: cost reduction in terms of real estate, increased productivity,

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1
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flexibility purpose, increased competitive advantage, improved customer service, enhanced level of connection and synergy and host of others. Organisations are, therefore, keen on how to achieve, improve and sustain performance.

In order to take the advantage of the benefits the greeted virtuality of organisations, the assemblage of teams to execute and implement the necessary projects becomes significant. Virtual teams are identified, selected, and deployed to implement projects for the purpose of achieving overall performance that is desired in the virtual organisation. In a bid to direct efforts towards attaining performance at both the team level and organisational level, virtual teams have been confronted with some constraints. Chatfield, Shlemoon, Redublado & Darbyshire, (2014) point out the constraints and challenges facing virtual teams from achieving success to include: ineffective communication, lack of technology adaptation, lack of trust, and lack of physical interaction among the team members. These constraints are attributed to both virtual organisations in both developed and developing countries. The studies of Zuofa and Ochieng (2017) and Ondari-Okenwa, (2002) on virtual teams and organisational effectiveness both in Nigeria and Kenya have identified that lack of trust, dearth of infrastructure, lack of physical interaction, and ineffective communication constituted great challenges for virtual teams in achieving performance of project.

However, it has been pointed out that the effectiveness of virtual teams is essential for the attainment of performance of project in an organisation that embraced virtual arrangement. Chatfield *et al.*, (2014) and Zuofa and Ochieng, (2017), posit that effectiveness of virtual teams can be attained when there is effective communication, trust in the entire working environment, development of interpersonal skills, keeping personnel motivated, and adoption of appropriate technology. This study, therefore, dwelt on the need to enhance of virtual teams management practices with the aim of attaining project performance in organisations.

1.1.1 Project Performance

The term performance has remained an ambiguous word in terms of its definition and clarification. There is no single definition that is attributed to performance, rather many scholars and researchers have largely embraced some indicators as the best way for its measurement and explanation. Performance in real sense can be described as the driving force of every organisation. . According to Wong, *et al.,* (2011), performance refers to the aggregate measure of the outcome or output of an organisational activities and contribution towards its stakeholders. It can also be seen as the measure of output of goods and services, which may be quantitative and qualitative, measure of time, and a measure of financial indicators (Guest, 1997). Performance can also be measured in terms of outcomes. Savanevicience and Stankeviciute (2012), posit that performance can be measured in terms of outcomes such as organisational, financial, and market based outcomes. According to them, organisational outcomes can be measured in terms of productivity, quality and efficiency, financial outcomes can be measured by indicators such as profit, sales and ROI, and the market based outcomes can be measured by indicator such as stock price.

In project management, project performance can be related to project success. Project seems to be successful when it meets time, budgets, and performance goals (Shnhar, *et al*., 2001). Evaluating project in terms of meeting time, budget, and performance goals remains a traditional measurement; however project success or performance can be measured in terms of several other indicators. Performance indicators differ from one organisation to another and the projects executed by various organisations will determine the types of project goals they are pursuing. Irrespective of the different tasks being performed by the assemblage of teams working on some projects, the ultimate aim of every team should be to ensure the attainment of the overall goals or the objectives of the organisation.

Project performance or success, apart from the measurement in terms of meeting budget, time and performance goals, can be evaluated in terms of project efficiency, impact on the customers, cost reduction, direct business and organisational success (Shnhar, *et al*., 2001). This study therefore looked at the overall effect and relationship that some practices for managing virtual teams has on the project performance of higher institution of learning in Kenya.

1.1.2 Virtual Teams Management Practices

Virtual teams, according to Zuofa and Ochieng, (2017) refer to as the group of geographically and administratively dispersed co-workers who are linked by means of communication and information technologies to accomplish set organisational objectives. Ebrahim, *et al*., (2009), describe virtual team as small temporary groups of workers who are dispersed geographically, organisationally, and also work in a coordinated manner through electronic information and communication technologies to accomplish one or more organisational tasks. Virtual teams have also been seen as temporary in nature, they are group that are assembled in on ad hoc basis to meet the business need in an agile manner in today's dynamic and changing global environment (Shachat, 2008).

The forgoing definitions see virtual teams as individuals that are working in a group but lack face to face interaction. According to Maznerski and Chudoba, (2000), virtual teams rarely meet face to face, or meet in person; they conduct most of the interaction and decision - making using information communication technology (ICT). However, studies on virtual teams had also shown that virtual team members can also involve in traditional team activities such as collocated face to face project meeting (May & Carter, 2001). In order to fully comprehend what virtual team means, a call has been made to define it as having high-level virtuality based on four dimensions of temporal, spatial, cultural, and organisational dispersion. Based on this call, this study will see virtual teams as a temporal, spatial, cultural,

and dispersed group of workers who are assembled and linked together by means of information and communication technologies for the purpose of accomplishing organisational tasks or goals.

Organisations, in today's modern business environment, are experiencing a paradigm shift from traditional team-based structures to virtual setting arrangement. This shift is occasioned by the advancement in information technologies and globalisation which necessitate the need to meet the demands and expectations of clients and customers across the globe. In order to actualise the goals or objectives of virtual organisation and the performance desired, emphasis has been accorded on the need to form virtual teams at the initiation of a project. Virtual teams are set of people who are engaged to implement projects within a specific period of time within an organisation. Virtual team has attracted array of definitions from definitions from scholars especially in the field of management.

In project management, project execution and performance involve the activities of people and the management itself involves the process of getting things done through other people in the organisation. Achieving project performance and success in a virtual settings hinges largely on information and communication technology. Helms and Raiszadeh, (2002) argue that without technology, the issue of virtual arrangement would have been non-existence, but it is not a substitute for entire work experience. Therefore, the performance of tasks to accomplish a common objective of virtual organisation remains a function of virtual team effectiveness. Virtual team which is composed of the human elements of the virtual organisations can be managed in different forms. Virtual team is conceived as a group of people linked together by means of information and communication technologies to accomplish organisational tasks, then, one of virtual team management practices is to improve communication within the organisation. Chartfied, et al., (2014), point out that one of the greatest challenges confronting virtual teams remains lack of effective communication.

They posit further that virtual team management practices remains vital for a virtual organisation to deliver business value and this can be achieved by improved and effective communication within the organisation.

Unlike the bureaucratic setting where formal structure defines the relationship between workers and management, the case is different in a virtual setting arrangement. The issue of trust has replaced structure that defines relationship among virtual workers in a virtual organisation. To achieve performance or accomplishment of organisational tasks, trust must be embedded among the virtual members in a virtual organisation. Therefore lack of trust has been identified as a bane of virtual team management practices in a virtual organisation (Chartified, et al., 2014; Zuofa & Ochieng, 2017). Therefore, using soft approach to manage virtual team has been identified as a way of ensuring virtual team effectiveness. Recognition of team members has been adjudged a veritable mean of motivating people to achieve performance within the organisation. Lee-Kelley, Crossman and Cannings, (2004) posit that the public acknowledgment of achievement in virtual environment is critical to project success and future commitment. It has been argued that the need for recognition as been regarded as a fundamental driver of human behaviour (Paré & Tremblay, 2007).

Recognition practices, as far as this study is concerned, refer to both the non-monetary rewards through which an organisation tangibly signals its appreciation of quality work and achievements, and financial reward to workforce for the success credited to their efforts. (Paré & Tremblay, 2007). These practices include efforts on the part of the organisation to carefully consider the employee suggestions and provide them with reasonable and positive feedback. Employees who perceived that their organisation is interested in appreciating their efforts and achievement will contribute their quotas towards ensuring project success and performance in an organisation.

Virtual teams management practices can also be enhanced to ensure project success and performance through information sharing practices in the virtual setting. According to Meyer &Allien, (1997); Rodwell, Kienzle, & Shadur, (1998) cited in pare & Tremblay (2007), information sharing practices favours the internalisation of organisational goals and values by employees, enhance feelings of mutual trust, and make individuals feel important to the company. Sharing of information on key areas and activities of the organisation such as strategy, operational measures and procedures, allocation of resources, assignment of tasks, schedules of works, monitoring and evaluation of project and others conveys to the organisation's people that they are trusted. Information sharing remains a potent tool for managing trust among teams both in virtual and traditional structures within an organisation. When organisation's human elements feel that their organisation is interested in practices for building their trust, commitment on their part may be fostered and project success and performance may be enhanced.

1.1.3 Team Commitment

The term commitment, as it is used by researchers and scholars in multidisciplinary literature, entails identification, involvement and loyalty on the part of employees to their organisation. According to Meyer and Allen, (1990), employee commitment is conceptualised into three typologies: affective, normative, and continuance commitment. These three layers of commitment explain the way by which employees identify, involve, and loyal to the attainment of goals or objectives of their organisation. Affective commitment, according to Meyer and Allen, (1990), relates to an employee personal attachment to his or her organisation. This type of commitment makes an employee to identify and involve the pursuit of activities that will lead to the attainment of goals or objectives of his or her organisation. Normative commitment relates to a general feeling of will to stay in the organisation. According to Akram, (2012), normative commitment refers to a feeling of obligation to the

organisation, and it is being expressed by an employee feeling of indebted to the organisation for being considered for a job, when one is needed most. Continuance commitment refers to a commitment that makes employees to stay with their organisation because they need to. In this type of commitment, an employee decides to stay with his or her organisation because the possibility of getting another job is not certain or the benefits such an employee gets from his or her present job cannot be got elsewhere.

Irrespective of the typologies of employee commitment in the organisation, performance is influenced when people are committed to the goals and objectives of their organisations. It is believed that perception of good management practices by virtual teams will result to team commitment which in turn leads to project success or performance. Therefore, it is significant to look at the mediating effect of commitment on the relationship between virtual team management and project performance or success.

1.2 Statement of the Problem

Higher learning institutions in Kenya are academic communities that are saddled with the responsibilities of providing high quality education to meet the demands of people and the society at large. As a community, a higher education learning especially a university engages in executing and implementing series of projects for the actualisation of its mandate in terms of service delivery to the society. The performance or success of these projects becomes an important issue of concern to the management of selected public universitie in Kenya.

An important means of achieving performance via cost reduction in some selected public universities is the incorporation of virtual arrangement in communicating service delivery to their necessary clients. Virtual teams have been assembled to implement projects in some key activities of some public universities such as virtual learning programmes, constructions projects, administrative functions, procurements, and consultancy projects. All these projects

are implemented basically to attain a common purpose of delivering better quality services to their teeming clients and the society at large. The performance and success of these projects has been met with some brick walls. According to Ondari-Okenwa (2002), inadequate compensation of technical staff, high turnover of technical and managerial staff, and lack of professional training programmes have contributed to downturn in the activities and performance of universities in Kenya. Muuro, *et al*., (2014) point out that lack of feedback from instructors and peers, lack of time to participate, and slow of internet connectivity have attributed to shrinking patronage in programmes of universities in Kenya. Trust has been identified as a function that replaces the usual rules, procedures, and practices that dictate the behaviour of more traditional hierarchical and bureaucratic organisations, but such trust is lacking among virtual teams and personnel, and this has constituted a great challenge for virtual teams in many virtual organisations (Zuofa &Ochieng, 2017; Chartfield, *et al*., 2014).

In order to improve and enhance project performance of universities in Kenya, the need to make virtual team management becomes expedient and consequential. While major studies on virtual team management practices and performance were exploratory and qualitative, the need to mount empirical study on virtual team management practices and project performance becomes significant. Thus, this study was to fill the gap via empirical study on how to create virtual team management practices to improve project performance in public universities in Kenya.

1.3 Objectives of the Study
The objectives were stated as follows:

1.3.1 General Objective
The overall objective of this study was to investigate the effect of virtual team management practices on the performance of project in selected public universities in Kenya.

1.3.2 Specific Objectives

The specific objectives of the study were as follows:

i. To investigate the effect of communication on the performance of project in selected public universities in Kenya.

ii. To determine the effect of recognition practices on the performance of project in selected public universities in Kenya.

iii. To determine the effect of information sharing practices on the performance of project in selected public universities in Kenya.

iv. To establish the mediating effect of team commitment on the relationship between virtual team management practices and performance of project in selected public universities in Kenya.

1.4 Research Hypotheses

The study hypotheses that emanated from the objectives of this study were as follows:

H_{01} Effective communication does not have significant effect on performance of project in selected public universities in Kenya.

H_{02} Recognition practices do not have a significant relationship on performance of project in selected public universities in Kenya

H_{03} Information sharing practices do not have a significant effect on performance of project in selected public universities in Kenya.

H_{04} Team commitment does not mediate the effect of virtual team management practices on the performance of project in selected public universities in Kenya.

1.5 Significant of the study

This study is significant as it sought to address the issues that were to do with management of virtual team so as to cope with the challenges brought about by information technologies and globalisation. In the light of this, the study is important to the management of organisation with virtual arrangement on the understanding of management practices or interventions for managing virtual teams towards attaining project success or performance.

The study provides basic information and knowledge to decision makers in the organisation on team formation, team cohesiveness, and team performance. This information and knowledge on the reasons why organisations should embrace virtual arrangement settings was provide how project performance was to be attained.

Research on virtual organisation in developing economies, especially in Kenya, still remains anecdotal, this study therefore advanced knowledge in this area and it was to provide a platform for mounting empirical future research.

1.6 Scope of the study

This study sought to address the management of virtual team and its relationship to project performance in a virtual setting. Therefore, this study extended its coverage to an organisation that engages in virtual operations to execute a project. The study therefore focused attention on the construct of virtual team management practices such as effective communication, recognition practices, and information sharing practices. The study also examined project performance as the dependent construct of the study, and team commitment to explain the relationship between the independent and dependent constructs.

In term of geographical scope, the study was conducted in Kenya and data were specifically collected from respondents from universities within the Nairobi County. The methodological scope of the study revolved round the approach of positivism, and both descriptive and

explanatory design were employed. The time scope for data collection of this study covered the periods of three months.

1.7 Limitation of the study

Research on virtual team management and project performance has received little or no attention in Kenya. Therefore, the study was limited in terms of available literature to enrich the contents of the various constructs of this study.

The study is also cross-sectional and therefore limited in strength to predict a causal relationship, and therefore subsequent studies in relation to the topic of this study could carry out longitudinal study so as to establish the causal relationship between the constructs of this study. Furthermore, the study faces limitations ranges from financial, time, and other resources constraints, and these elongated the periods the periods the research would have been completed.

1.8 Organisation of the study

This study covers a research project on virtual team management and project performance of some selected public universities in Kenya. Therefore, the study was structured as: chapter one looked at the background to the study, the problem statement, the objectives of the study, the study hypotheses, the significance of the study, the scope and limitation of the study, and the organisation of the study. Chapter two of the study covered the review of literature. The literature review was to dwell much on theoretical review, empirical review, and the conceptual framework of the study. The chapter three covered the methodology for achieving the objectives of this study. This included research design, research problem, population, data collection method, data analysis method and proposed data presentation methods. The study also covered in chapter four the data analysis and presentation, and chapter five on summary conclusion and recommendation. References together with the items of instrument were then given as appendices.

<center>**CHAPTER TWO**</center>

<center>**LITERATURE REVIEW**</center>

2.1 Introduction

This chapter dwells at the literature relevant to the study and examined the review of theoretical and empirical literature. A conceptual framework was developed in this chapter to give the clearer picture of what the researcher hypothesised to be the relationship between the constructs under study. Review entailed intensive research from textbooks, journals and other online academic resources.

2.2 Theoretical Review

2.2.1 Resource-Based View Theory

Resource-Based View (RBV) is an approach that emerged in 1980 to 1990 which is traceable to the major works published such as the Resource-Based view of the firm by Wernerfelt, the Core competency of the Corporation by Prahalad and Hamel, and Firm Resources and Sustained Competitive Advantage by Barney. The approach was later formalised by Barney in 1991. Resource-Based View is an approach that states that sustainable competitive advantage can be attained provided a firm engages in development of resources and capacities that remain valuable, rare, inimitable, and not substitutable. The proponents of this new view argue that organisations should analyse their internal environment to find the sources of competitive advantage instead of dwelling much in x-raying competitive environment forces. This theory was formalised by Barney in 1991.

Organisational resources, according to Barney, (1991), can be classified into three major areas: physical capital resources, human capital resources, and organisational capital resources. Physical capital resources available for firm, according to Barney, include physical technology, plant and equipment, geographic location, and raw materials accessibility. The

<center>13</center>

human capital resources include competences of individual managers and workers in a firm. The organisational capital resources include a firm's formal reporting structure, its formal and informal management systems, as well as informal relation among groups within a firm, between a firm and those in its environment.

These are the resources that enable a firm to design and execute a value-creating strategy. Barney (1991), in his argument, emphasises that sustainable competitive advantage is achieved when a firm implements a strategy not simultaneously being implemented by current or potential competitors. The argument of this theory is that an organisation would eliminate uncertainties and remains competitive advantaged in the external environment if it is able to build internal capacities and potentials which are valuable, rare, inimitable, and have no substitute. Although, Barney argues that not all the resources possessed by the organisation will help to conceive of and implement strategy for occasioning efficiency and effectiveness, the resources that are considered valuable, rarely, inimitable, and not substitutable will help an organisation to obtain sustained competitive advantage. Such resources, according to Barney, will help organisations to design and apply strategy that will enhance efficiency and effectiveness better than the competitors in the market.

Savaneviciene & Stankeviciute, (2012), point out that Resource-Based View (RBV) remains one of the mostly widely used theories to ground the relationship between people and performance in an organisation The importance of this theory to project management is that it provides a ground to understand the importance of people to the success of an organisation. Since people remain an invaluable asset and an important resource that embraces the features of rareness, inimitability, and non-substitutability, an organisation can, therefore, invest in the enhancement of its virtual team capacities so as to obtain a sustainable competitive advantage.

2.2.2 Social Exchange Theory

The Social exchange theory has a root traced to both sociology and social psychology. The key contributors to this theory include the likes of George Homans, John Thibaut, Harold Kelley, and Peter Blau (1958-1974). The social exchange theory was more formalised by scholar like Emerson in 1976. Social exchange theory advances that social behaviour emanates from an exchange process. The motive of this exchange is the maximisation of benefits and minimisation of costs. According to this theory, people compare the potential benefits and risks of social relationships. When the risks override the rewards, people result to termination or abandonment of that relationship.

According to exchange theory, as people relate over time, they experience the need to reciprocate the gestures of the other persons. This is called the norm of reciprocity. Social exchange theory can be used to explain important relationship that exists between people and their organisations. If employees perceive that their organisation considers them as a valuable asset, they may likely to reciprocate this as a gesture towards assuming positive behaviour within the organisation.

In this study, it is believed that if virtual team members perceive that the organisation considers them as important by recognising their efforts, sharing information to them on important organisational activities, communicating effectively to them, they may likely to reciprocate this as a gesture in terms of commitment, which would culminate to performance of project in the organisation. This theory was, therefore, employed to anchor the all the objectives of this study.

2.2.3 Affective Event Theory

The Affective Event Theory (AET), was developed by Weiss and Cropanazano (1996). The theory was designed to explain the cause and results of affective of experiences at work.

According to this theory, workers' feelings and emotions at workplace events largely determine work-related outcomes. The framework suggests that certain events in workplace are as a result of work environment features. These events, according to Weiss and Cropanazano, stimulate different affective reactions, which in turn, influence employees' attitudes and behaviours.

The Affective Event theory, though does not state the work environment features or work events that stimulate different affective reactions, literature has provided some clues that Human resource practices have a positive relationship link with affective reaction (Mostafa, 2017). Fisher (2002) identifies achievement, recognition, information sharing, advance/growth, and feedback as the most common events to which employees attribute positive affective reactions. In the work of Wegge, Dick, Fisher, West, and Dawson, (2006), perception of employees' organisational practices and policies such as opportunity for participation, supervisory support and concern for welfare, is positively related to positive affective reactions.

Affective Event Theory is relevant to this study because the recognition and information sharing to enhance the effectiveness of virtual team will be operationalised as events that need to be invested in the organisation so as to attain project performance. It is believed that if members of virtual team perceived that the organisation is interested in improving their wellbeing and capacities, they may be likely to be motivated and assumed positive behaviour and this may lead to project performance. This study, therefore, anchored the fourth objective of this study.

2.3. Empirical Review

2.3.1 Virtual Team Management Practices on Project Performance

The dynamic and competitive organisational environment, occasioned by the advancement in technology, increasing in globalisation, need for speed in implementing organisational tasks, has altered the requirement that group be made of members in face-to-face interaction (Luthans, 2008). Members of group in today's organisations can now communicate at different locations through electronic means which include emails, websites, satellite transmissions, teleconferencing, video conferencing, phones, and host of others (Chartfield, *et al*., 2014). The members of group working together through the means without necessarily interacting face-to-face to accomplish an organisational task or implement projects are commonly referred to as virtual team in today's modern organisations.

Virtual team has attracted lot of attention from research scholars and academic literature. Virtual team has been operationally defined as group of workers who work interdependently with common and shared purpose across time, space, and organisation boundaries embracing technology to communicate and collaborate (Lutnas, 2008). As pointed out by Chatfied, *et al.*, (2014), virtual team was earlier defined as groups of people who closely work together even though they are geographically separated by miles even in continents. The argument against the earlier definition of virtual team is that it neither accommodates the temporary nature nor underscores the importance of ICT as a means of facilitating interactions in virtual teams.

The most cited definition of virtual team sees virtual team as a group of geographically, organisationally and/or time dispersed workers brought together by information technologies to accomplish one or more organisation tasks (Powell *et al*., 2004). This definition seems not to have factored in the temporal nature of virtual team. Shachaf, (2008) defines virtual team as a group of people who are assembled in an ad hoc basis to accomplish a certain task or to

meet business needs in the face of today's changing global business environment. The salient attributes of these definitions is that virtual teams do not interact face-to-face but they are bound together by means of information technology. However, recent studies have pointed out that virtual teams are also involved in traditional teams, and also involved in co-located face-to-face project meetings.

Virtual teams in modern day organisations are confronting with a lot of challenges. The challenges which include, ineffective communication, lack of trust, dearth of interpersonal skills, information, knowledge sharing problems, lack of face-to-face interaction, have constituted as cogs in achieving performance of projects or tasks in an organisation (Zuofa & Ocheng, 2017; Chatfield, *et al*., 2014; Daim, *et al*., 2012; Ebrahim, *et al*., 2009). In order to overcome these challenges and attain performance, the effectiveness of a virtual team is remains sacrosanct.

2.3.2 Effect of Communication   for Virtual Team Management Practices

Ineffective communication has been identified as a key a key challenges militating against the effectiveness of virtual teams towards achieving performance in an organisation (Daim, *et al*., 2012). As pointed out By Luthans, (2008), the key to effective virtual team has been the importance of choosing the appropriate communication media to fit the requirement of the task and the message. Studies on virtual teams have pointed out that lack of face-to-face interactions between team members endangers trust and inhibits cohesion, and, therefore, effective communication is required to enhance virtual team effectiveness in a virtual organisation.

In the study of Chatfield, *et al*., (2014), studies on value creation through virtual teams were reviewed. The study was conducted at the University of Wollongong in Australia. The conclusion from the study shows that communication breakdown remains the bane of virtual teams from achieving project success. The conclusion arrived based on the studies reviewed

is that effective communication remains a potent tool for enhancing virtual team management practices which in turn will create business value. The study identified ICT tools such as emails, instant message/chat, telephone, video conferencing, remote access control, for enhancing communication effectiveness in a virtual organisation. The study is consistent with earlier studies (Daim, *et al*., 2012; Shachaf, 2008; Anderson, *et al*., 2007; Lawley, 2006) that identified both synchronous and asynchronous modes of communications as means of enhancing virtual team management practices and project performance. The study is limited in the sense that it is on review of existing studies which lack empirical investigation. Zuofa & Ocheng (2017) investigated the challenges of virtual project teams in organisations in Nigeria. The study was conducted with a view to identifying what constitutes challenges to virtual team and how virtual team management practices can be enhanced so as to attain performance in an organisation. The study adopted a survey research using a qualitative method where interviews (semi-structured) were conducted to elicit responses from the participants. The study adopted non-probability sampling design where snowball sampling technique was used to determine the participants of the study. The participants of the study were drawn from engineering, banking, and IT sectors that have several roles such as projects and programme managers. The recorded interviews were analysed manually to chart the conclusion of the study. The study of has in one its conclusions that face-to-face communication is needed to enhance virtual team cohesion and effectiveness as this would have a positive impact on project performance. The face-to-face communication as a means of effective communication is in tandem with earlier study conducted by Maznevski and Chudoba (2000). The study is a qualitative research that dwells on manual method for analysing data, therefore, it is considered as a matter of importance that empirical research be conducted to examine the relationship between effective communication of virtual team and project performance of organisations.

2.3.3 Effect of Recognition Practice on Virtual Team Management Practices and Project Performance

Studies on virtual teams and performance in organisations have constantly underscored the importance of trust as a structure that defines the relationship between virtual team members in a virtual organisations (Daim, *et al*., 2012; Lawley, 2006; Lee-kelly & Sankey, 2008;Vorakulpipat, *et al*., 2010). Unlike traditional and bureaucratic organisations where structure defines the relationship between employees, superiors, and the management, but in virtual settings, the structure has replaced by trust. Therefore, recognition practices have been identified as one the soft approaches for managing and entrench trust among virtual teams within organisations (Lee-kelly, *et al*., 2004). Lee-kelly *et al* 92004) posit that the public acknowledgment of achievement in virtual environment is critical to project success and future commitment. It has been argued that the need for recognition has been regarded as a fundamental driver of human behaviour (Paré & Tremblay, 2007). Recognition practices, as far as this study is concerned, refer to both the monetary and non-monetary rewards through which an organisation tangibly signals its appreciation of quality work and achievements (Paré & Tremblay, 2007). These practices include efforts on the part of the organisation to carefully consider the employee suggestions and provide them with reasonable and positive feedback, and financially reward them for the success attributed to their efforts. Employees who perceived that their organisation is interested in appreciating their efforts and achievement will contribute their quotas towards ensuring project success and performance in an organisation.

Ebrahim, et al., (2011), conducted a review of literature on how virtual teams can be used to enhance organisational performance and competitiveness. The study adopted a qualitative approach and conclusion were drawn the reviewed literature. The study offers as one of its contributions that organisational performance and competitiveness can be enhanced where there is fair and motivating reward system. The study therefore pointed out that organisation

should develop a fair and rewarding system to enhance virtual team management practices towards achieving project performance. The study is limited based on its lack of empirical investigation.

Malhotral, *et al.,* (2007), investigated leadership practices of effective leaders of virtual teams in 33 companies from different countries in USA. The study adopted survey research where observation, interviews, and survey data were used to obtain responses from the respondents. The study was basically qualitative study with no inferential analysis of the data from the respondents. The study identified recognition of success achieved by the member of virtual teams in an organisation will build trust and spur them to work towards achieving the success that an organisation desires. The study also pointed out that praising of managers or supervisors of virtual teams will not only motivate but also give them sense of belonging in the organisation. The study tried to identify recognition as a way of enhancing virtual team management practices but the outcomes are just mere propositions which can be validated through empirical investigation.

2.3.4 Effect of Information Sharing on Virtual Team Management Practices and performance

Sharing of information on key areas and activities of the organisation such as strategy, operational measures and procedures, allocation of resources, assignment of tasks, schedules of works, monitoring and evaluation of project and others conveys to the organisation's people that they are trusted. Since virtual teams largely rely on information and communication technology, information sharing, therefore, remains a potent tool for managing trust among teams both in virtual and traditional structures within an organisation. When organisation's human elements feel that their organisation is interested in practices for building their trust, commitment on their part may be fostered and project success and performance may be enhanced.

In the study of Pare and Tremblay, (2007), the effect of information sharing was investigated on turnover intention of highly skilled IT professional members of Canada Information Processing Society was investigated. The study was a survey research and structural equation modelling was used to analyse the data obtained from 394 respondents. The findings revealed a negative relationship between turnover intention and information sharing in an organisation. Though, the study found a negative relationship between information sharing and turnover intention, there is need to extend the relations such a construct will have on project performance in virtual team setting.

2.3.5 Employee Commitment and Project Performance

The degree to which an employee identifies with the goals and values of the organisation, and is willing to exert effort to help it succeed is termed employee commitment (Meyer et al., 2002). An employee who is committed will want to be identified with goals and aspirations of the organisation, and also will want to remain with the organisation in the face of any challenges that the organisation is facing. As it applies to traditional organisation, there is need to find out if practices for enhancing virtual team management practices have a link with project performance via employee commitment in a virtual organisation.

In the study of Mohammad, *et al.*, (2010), the impact of employee commitment on job performance among employees of the oil and gas sector in Pakistan was investigated. Employee commitment was measured based on the instruments developed by Allen and Meyer (1991). The study established that there is a positive relationship between employee commitment and job performance in an organisation. it is therefore important to examine the indirect relationship that virtual team management practices may have of project performance especially in a virtual setting arrangement.

2.3.6 Summary of the Reviewed Literature

Author(s)	Study Area	Study Area or Location	Focus	Findings	Gap	Focus of the current study
Zuofa & Ocheng, (2017)	Virtual Teams and Performance	Nigeria	Challenges of virtual teams and how to achieve performance via virtual team effectiveness.	The study identified effective communication (face-to-face) as a way to manage virtual team to achieve performance in an organisation	The study was just a qualitative research which lacked empirical validation.	The current study will carry out a survey research to empirically investigate and validate effective communication as a construct to explain the testing variable of project performance.
Chatfield, Shlemoon, Redublado & Darbyshire, (2014	Business Value Creation	Australia	Placing emphasis on creating business values through virtual teams	Effective communication was identified to have in an influence on virtual team management practices which in turn leads to crating values in the organisation	There is no empirical investigation to justify the relationship between effective communication and performance of virtual team in a virtual setting	The current study will focus on survey research to validate the relationship between effective communication and project performance in a virtual setting arrangement.
Malhotra, Majchrzak, & Benson, (2007),	Leadership and Virtual Team	USA	Emphasised on how virtual team members can be made effective	It was found that recognition of success of the members of virtual team will enhance team	Recognition as a practice to enhance the effectiveness of	This study will carry out a survey research with a view to collect data and investigate the relationship that exists between the constructs of recognition and

			to attain performance	management practices which in turn lead to performance	virtual team so as to attain performance was identified as a mere proposition, and it is deficient of empirical investigation	performance
Ebrahim, Ahmed, & Taha (2011)	Virtual team and performance.		The study emphasised on recognition of virtual team efforts by developing fair and motivating reward system	Fair and motivating reward (financially) should be used to enhance the management of virtual team members to achieve performance	The study is qualitative and descriptive in nature.	The current study will focus on empirical investigation to ascertain the relationship between recognition and virtual team performance
Pare & Tremblay, (2007	Information Sharing	Canada	Investigated the relationship between information sharing and turnover intention	It was found out that information sharing and turnover intention is negatively related.	The study was limited to turnover intention at the expense of performance in the organisation	The current study will look at how information sharing will enhance performance of project in virtual team by carrying out empirical investigation
Mohammmad, Farooq, & Ramay, (2010)	Employee Commitment.		Impact of employee commitment on job performance	The study established relationship between employee commitment and job performance.	Scholarly literature identified commitment as a mediating variable	This study will conceptualise employee commitment as a mediating effect of virtual team management practices and project performance

2.4 Conceptual Framework

The relationship between the constructs of this study was presented in the below conceptual framework. The virtual team management practices represented composite variable which was measured by observed variables such as effective communication, recognition practices, and information sharing practices. The dependent variable was the project performance and the relationship between the independent and dependent variables were mediated by team commitment as intervening variable.

Figure 2.1 Conceptual Framework for the study

Independent Variable   **Dependent Variable**
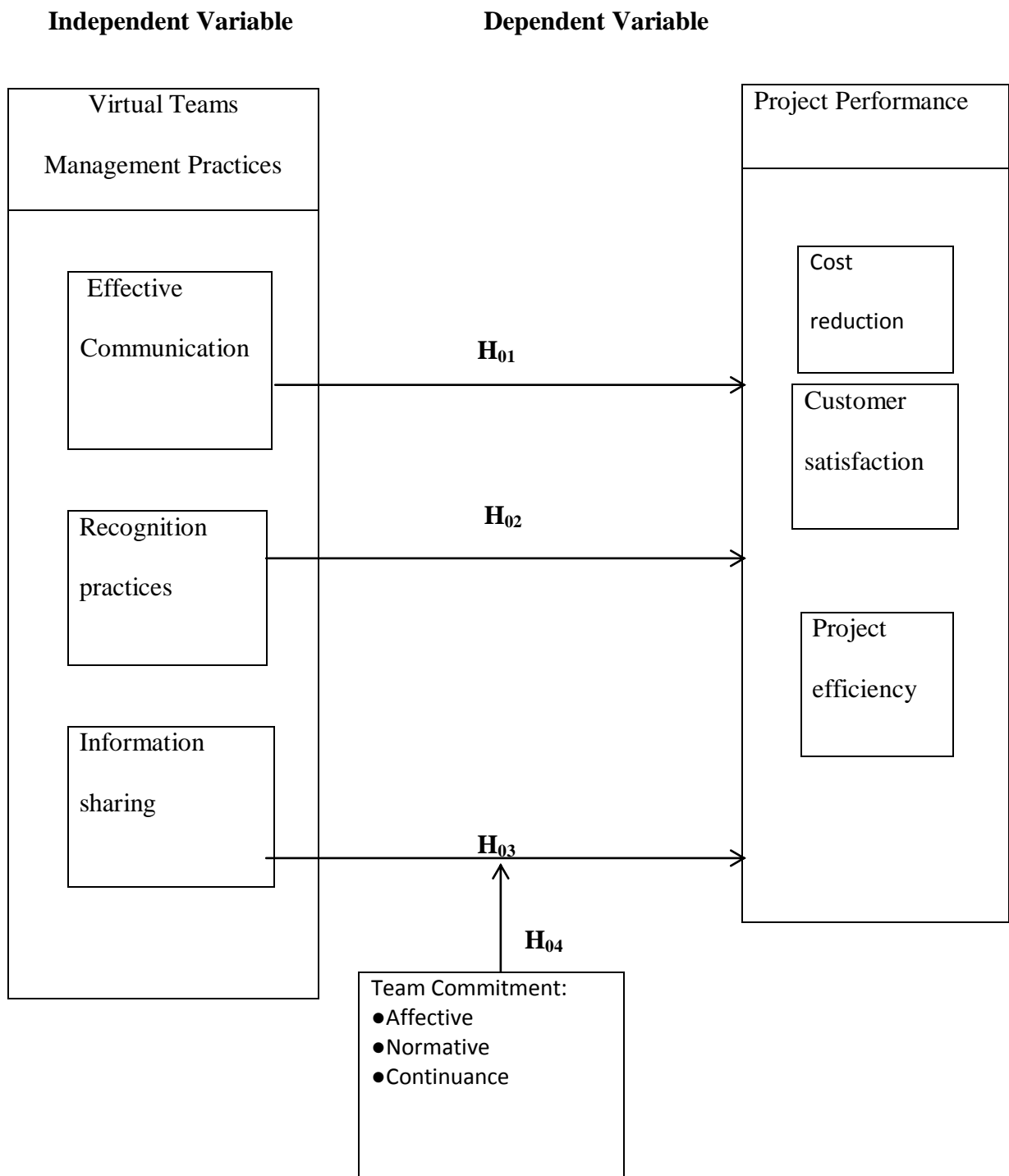
Source: Researcher, 2018.

CHAPTER THREE

RESEARCH METHOLOGY

3.1 Introduction

This chapter examines the research philosophy, research design, empirical model, operationalization and measurement of variables, target population, sampling design, data collection procedure, and data analysis and presentation.

3.2 Research Philosophy

Research philosophy defines the approach that guides the researcher in the choice of research to be carried out. According to Saunders; Lewis, and Thornhill, (2009), research philosophy is categorised into three types: ontology, epistemology, and positivism. This study dwelled more on positivism because it determines the approach this study will be based.

Research positivism is an approach that is based on the ground of data collection and testing of hypotheses. It underscores the operationalization of constructs from existing theories. (Saunders, *et al.,* 2009). Based on the above discussion, the research philosophy of this study was grounded in positivism approach. The approach was considered best because the constructs of this study was operationalized from some existing theories and the survey study was carried out to pave way for data collection and the data collected to be statistically analysed.

3.3 Research Design

Research design can be seen as overall strategies that a researcher uses to integrate the all the components of a study so as to address the research problem (Labaree, 2009). This study was a survey research, and, therefore, the design the researcher adopted was a blend of descriptive and explanatory research designs. The researcher settled for these designs based on the research problem of this study. The descriptive research was used to describe the

characteristics of the phenomena under study. The explanatory design was used to determine the correlational relationship as hypothesised in this study.

3.4 Empirical Model

3.4.1 Model Specification

The hypotheses of this study were tested using multiple regression models. The conceptual framework of the study has the independent and the mediating constructs to explain the testing construct of this study. The models in this study showed how the relationships between the constructs of this study were analysed.

For hypotheses 1 to 3 (H_{01}, H_{02}, and H_{03}), a general linear regression equation was used to test the relationship. Such a model is given below:

$$Y = \beta 0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Contextualising the above model in this study gives the following model:

$$PP = \beta_{01} + \beta 1 EC + \beta_2 RP + \beta_3 IS + \varepsilon \ldots.. \text{ Model 1}$$

Where PP= Project performance, EC= Effective Communication, RP= Recognition Practice, IS= Information Sharing, ε= regression residual, β_0 is the intercept, and β_1, β_2, and β_3 being the regression coefficients.

To test for $H_{04,}$ the three-variable model proposed by MacKinnon' Lockwood, West, and Sheets (2002) was employed in the study. The three-variable model was expressed equations as follows:

$$Y = \beta_0 + CX + \varepsilon i \ldots\ldots\ldots.. \text{ equation (ii)}$$

$$Y = \beta_0 + C'X + bM + \varepsilon_i \ldots\ldots\ldots \text{ equation (iii)}$$

$$EC = \beta_0 + aX + \varepsilon_i\ldots\ldots\ldots.. \text{ equation (iv)}$$

Contextualising the equations above gives the following as the model that was used to test for mediation effects as hypothesised H_{04} in this study:

$$PP = \beta_{02} + \beta_4 VTMP + \mathcal{E}_i$$

$$PP = \beta_{03} + \beta'_5 VTMP + \beta_6 EC + \mathcal{E}_i \qquad \text{Model (ii)}$$

$$EC = \beta_{04} + \beta_7 VTMP + \mathcal{E}_i$$

Where PP= Project performance, VTE= Virtual Team Management Practices, EC= Employee Commitment, β_0 is the constant, β is the effect of the mediator variable on dependent variable controlling for the independent variable, $\mathcal{E}=$ is the regression residual, C is the coefficient of the total effect of the relationship between independent variable and the dependent variable, C′ is the effect of Virtual teem management practices on the dependent variable controlling for the moderating variable, and *a* is the effect is the effect of the independent variable on the mediator.

3.5 Target Population

The population of a research study refers to a set of all elements or objects under study from which inference is to be made (Scheaffer, *et al*., 2006). In view of this definition, the population of this study comprised the selected public universities within Nairobi area in Kenya. Therefore, the choice of three universities was influenced by the virtual projects, especially virtual learning programmes, taking place in these universities. These universities include University of Nairobi, Kenyatta University, and Jomo Kenyatta University of Agriculture and Technology. In these selected universities, the various non-academic and academic personnel that were engaged to carry out the activities of the unit constituted the study population. In Kenyatta University, a total of 579 staff constituted the population of the study. The 579 staff comprised 552 academic staff from various schools offering programmes ranging from Diploma, undergraduate, and masters degrees programmes, while a total of 27 staff constitutes the number of non-academic staff within Kenyatta University Digital School

(http://www.ku.ac.ke). In University of Nairobi, a sum total of 347 staff who involved in the activities of virtual learning programmes constituted the study population (http://odel.uonbi.ac.ke/). A total of 234 staff also constituted the study population from Jomo Kenyatta University of Agriculture and Technology (http://www.jkuat.ac.ke). A total 1260 staff represented the study population from the three universities selected in Nairobi areas in Kenya. The breakdown of the target population is given below:

Table 3.1 Distribution of Target Respondents

S/N	Category	Count
Kenyatta University	Academic Staff	522
	Non-academic Staff	37
University of Nairobi	Academic Staff	360
	Non-academic Staff	47
Jomo Kenyatta University	Academic Staff	253
	Non Academic Staff	41
	Total	304

Source: Researcher, (2018)

3.6 Sampling Design

In research it might impossible to deal with the entire population. Therefore, there is need to deal with sample so as to get a sizeable portion of the population. Sample is therefore a representative of the population. In view of taking sample as a representative of the population of this study, Taro Yamene formula was adopted to determine the sampling size of this study. The Taro Yamene formula is given as below:

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

Where N is the population of the study, n is the sample size, and e is the level of prescription sought by the researcher. The precision level for this study is proposed to be 0.05; hence the sample size is as follows:

Table 3.2 Distribution of the Sample Size

S/N	Category	Count
Kenyatta University	Academic Staff	126
	Non-academic Staff	9
University of Nairobi	Academic Staff	87
	Non-academic staff	11
Jomo Kenyatta University	Academic Staff	61
	Non-academic Staff	10
	Total	304

Source: Researcher, 2018

Sampling of the above respondents was essentially done via random sampling method. The total sample size as distributed in the above table was 304.

3.7 Data Collection Method

This study is a survey research where data was collected directly from the field. The researcher therefore used questionnaire as a method of obtaining responses from the respondents. The questionnaire for this study was self-designed questions by the researcher. The questions were closed-ended questions measured on five point Likert's scales. The Likert's scales ranged from 5=strongly agree to 1=strongly disagree. The instruments were also tested for validity and reliability.

3.7.1 Instrument Validity

The instruments of this study was measured based on three aspects which include, content, construct, and criterion validity. The instruments of this study were self-designed questions

by the researcher. In order to ascertain whether the instruments measure what it is supposed to measure in terms of content, criterion, and construct validity, the instruments were submitted to the researcher' supervisor for perusal and guidance and the instrument items were certified to be adequate in terms of measuring the content, criterion, and construct validation. Furthermore, the instruments were also given to an expert who is a lecturer in the university for providing an objective evaluation and necessary direction, and it was considered to be adequate in terms of what they supposed to measure..

3.7.2 Instrument Reliability

The consistency of the instruments of the study remains important as a key factor that was determine the validity of the study's findings. Therefore, the reliability of the instruments was tested. The internal consistency of the instrument items was tested using Cronbash's coefficient Alpha. The threshold for Cronbash's alpha value is 0.70. This threshold value was used as basis for validating the reliability test of this study. The results of the reliability test for the instrument items are presented below:

Table 3.3 Reliability Results

Variable	No. of Items	Cronbach Alpha	Comment
Project Performance	7	.944	Reliable
VT mngt practices	10	.943	Reliable
Recognition	9	.969	Reliable
Information Sharing	7	.961	Reliable
Employee Commitment	7	.773	Reliable

Source: Research data (2018).

3.8 Data Analysis and Presentation

The responses obtained from the respondents formed the data to be processed and analysed for this study. For easy processing and analysis, the coding of the various constructs of was done. The data obtained from the respondents which were quantitative in nature were analysed via statistical software. This study's data were analysed using multiple regression method through the aid of statistical packages for social sciences (SPSS), version 20. The

approach allowed for the predictor variables to be regressed in a step wise regression fashion, and thereafter concurrently, as depicted in the empirical model. The test for mediation was also done via SPSS using Process Macro to test the mediation effect as suggested by MacKinnon, *et al*., (2002).

The results of the analyses were summarised using statistical measures such as means and standard deviations. Data presentations were done using tables. Tables were used to show the frequency distributions of the demographic characteristics of the respondents.

3.10 Ethics Considerations

This research was carried out with the aim of obtaining data from some selecting university in Kenya. Therefore, the welfare of the respondents from these selected universities must be accorded highest priority to preserve their dignity, privacy, and interests at all times. The researcher therefore ensured that full confidentiality of all information and the anonymity of participants was maintained. Furthermore, free informed consent was obtained from the respondents and these respondents were informed of the purpose and procedures of the research.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the findings of the study that was carried out to investigate the effect of Virtual Team Management Practices on Project Performance in some selected public universities in Kenya. The research targeted 304 respondents in both academic staff and non-teaching staff in the three selected public universities in Kenya. The study examined how effective communication, recognition practice, and information sharing practices affect project performance of selected public universities in Kenya. The mediating effect of employee commitment on the relationship between virtual team management practices and project performance was also investigated.

4.2 Response Rate

The response rate from the research study was 61.2 percent based on 186 questionnaires that were distributed, completed and returned by the respondents. The response rate being above 50 percent was considered satisfactory and adequate for data analysis.

4.3 Demographic Characteristics of the Respondents

4.3.1 Gender of Respondents

The study required the respondents to indicate the gender and the following were the findings as shown in table 4.1

Table 4.1: Gender of Respondents

Gender	Frequency	Percentage
Male	121	56.1
Female	65	34.9
Total	186	100

Source: Research data (2018)

As shown in table 4.1 majority of the respondents in the study were male (56.1%) while 34.9% were female. The findings indicate that majority of employees in the selected universities in this study are male.

4.3.2: Age of Respondents

The respondents were asked to indicate the age and the data collected showed the findings in table 4.2

Table 4.2 : Age of Respondents

Age	Frequency	Percentage
21-30yrs	95	51.1
31-40yrs	67	36.0
41-50yrs	19	10.2
51 and above	5	2.7
Total	186	100.0

Source: Research data (2018)

As illustrated in table 4.2, majority of respondents of the study (51.1%) were aged between 21-30 years, 36% between 31-40 years, 10.2% between 41-50 years, and 2.7% between 51years and above. This implies that majority of the employees based on the study in the selected universities were between 21-30years.

4.3.3: Respondents Level of Education.

The respondents of the study were asked to indicate their level of education and the following were the findings as shown in table 4.3

Table 4.3: Highest Education Level

High Edu. Level	Frequency	Percentage
Secondary Level	0	00
Undergraduate Level	84	45.2
Postgraduate Level	86	46.2
Others	16	8.6
Total	186	100

Source: Research data (2018)

Table 4.3 shows majority (46.2%) of the respondents indicated that they were postgraduate degree holders, 45.2% were degree holders, and (8.6%) attained educational levels different from secondary, undergraduate and postgraduate levels. It is also indicated in the findings that virtual team personnel in the selected public universities attained educational level beyond secondary level. The findings implies that majority of the employees were first degree holders and above in the selected public universities in Kenya.

4.3.4: Working Experience

The respondents were asked to indicate the length of service at workplace and the following were the finding as shown in table 4.4

Table 4.4: Working Experience

Working Experience	Frequency	Percentage
1-5yrs	90	48.4
6-10yrs	52	28.0
11-15yrs	19	10.2
16yrs above	25	13.4
Total	186	100

Source: Research data (2008)

The study found that 48.4% of the employees have 1-5 year work experience, 28% with a work experience of 6-10 years, 10.2% with work experience of11-15 years, and 13.4% with more than 16 year experience in the selected public universities in Kenya. This study implies that some of the employee had worked in universities for a period more than 5 years indicating high experience on project performance.

4.4 Descriptive Statistics

This section presents the descriptive statistical data on each of the variables studied. Descriptive statistics are recommended for summarizing the characteristics of variables as represented in the data. The study measured the study variables using a five point likert scale. The descriptive statistics that were appropriate was the mean and standard deviation. The

study computed the mean score per variable and the accompanying measure of dispersion of standard deviation. The findings on each of the variables are presented in a table and a discussion provided for each.

4.4.1 Effective Communication

The first variable of the study focused on effective communication among virtual team respondents. It was measured using ten indicators that formed the basis of the questions that the respondents were required to indicate their opinions in a five point-likert scale, (5- Strongly agree, 4=Agree, 3= Neither agree or disagree, 2= Disagree, 1= Strongly disagree) The findings were as follows in the table 4.5

Table 4.5: Effectiveness Communication

Statement	N	Mean	S.D
Major assignments to be carried out are communicated to the members of team via telephone conversation	186	3.06	1.081
Interaction with supervisor takes place virtually through communication means	186	3.41	1.346
The use of messages and chats will enhance virtual team effectiveness	186	3.47	1.295
Emailing and telephoning of information will promote effective communication among virtual teams	186	3.69	1.318
Video conferencing will enhance effective communication in virtual membership teams	186	3.52	1.388
Communication means will promote trust among members of virtual teams	186	3.74	1.213
Face to face communication will enhance virtual team effectiveness	186	3.86	1.257
Feedback about the performance of a project is done via communication means	186	3.79	1.150
Provision of communication gadgets will enhance effective communication among the virtual team members	186	3.62	1.398
Effective communication will promote interpersonal relationship among virtual team members	186	3.81	1.360
Aggregate Score		**3.597**	**1.2806**

Source: Research data (2018)

As depicted in Table 4.5, the aggregate mean score of the 10 statements of effective communication was 3.597 which means that majority of the respondents agreed with the statements. The study findings indicates that the sampled employees agreed that major assignment communicated to members via telephone with a mean of 3.06, virtual interaction of members with supervisors through communication with a mean of 3.41, use of messages

and charts among virtual teams with a mean of 3.47, emailing and telephone with a mean of 3.69, video conferencing with a mean of 3.52 and trust development through communication with a mean of 3.74.

Further, the findings also showed that face to face communication with a mean of 3.86, project performance feedback with a mean of 3.79, provision of communication gadgets with a mean of 3.62 and promotion of interpersonal relationship of virtual team members with a mean of 3.81.The findings implies that despite that effective communication among virtual teams influence project performance in higher learning institution, communication of major assignment by telephone, virtual interaction of members with supervisors and use of messages and charts as major challenges of virtual teams practices due to ineffective communication. The findings are in line with Zuofa & Ochieng, (2017), Daim, *et al.*, (2012), Luthans, (2008), who point that key to effective virtual team hinged on the importance of choosing the appropriate communication media to fit the requirement of the task and the message. Therefore, effective communication is a practice that is considered significant for enhancing virtual team management practices in a virtual organisation.

4.4.2 Recognition Practices

Recognition Practise was the second variable in the study in a virtual setting, measured with nine indicators formed on the basis of questions. The respondent of the study were required to indicate their views on the effect of recognition practices on project performance in selected public universities in Kenya. The findings were as follows in the table 4.6

Table 4.6 Recognition Practices

Statement	N	Mean	S.D
Appreciating my efforts towards the project team success serves as a motivator	186	3.74	1.343
Recognition of contributions of members to the success of the virtual teams builds trust	186	3.82	1.252
Recognition of efforts through financial rewards encourages to perform better	186	3.90	1.330
Public acknowledgement of team effort promotes team effectiveness	186	3.80	1.314
Provision of gifts such as communication gadgets is a way of recognising efforts of the virtual team members	186	3.61	1.380
Annual appreciation of members in dinners promotes effectiveness of virtual team members	186	3.48	1.308
Facilitating training programmes such as workshops, conferences, simulation training, etc. conveys to the virtual team members they are important part of the organisation	186	3.94	1.393
Facilitating of face- to -face meetings is an important way of recognising my efforts in a team	186	3.81	1.250
My suggestions count as far as decision-making is concerned among the team members	186	3.56	1.402
Aggregate mean score		**3.74**	**1.3302**

Source: Research data (2018)

As illustrated in Table 4.6, the mean scores of all the items on recognition practices showed that majority of the respondents agreed with the statements while item 6 showed a least mean score. The result indicate effort appreciation of virtual team personnel influence project performance of selected public universities with a mean of 3.74, recognition of members contribution with a mean of 3.82, financial rewards with 3.9, public acknowledgment of members with a mean 3.8, provision of communication gadget as gift with a mean of 3.6. annual appreciation through dinners with a mean of 3.48, training program with a mean of 3.94, face-to –face meeting with a mean of 3.81 and virtual team involvement in decision making with a mean of 3.56. The findings on recognition practices influence performance of projects in selected public universities in Kenya and the findings were in consonance with studies of Lee-kelly, *et al*., (2004) and Paré & Tremblay, (2007) that both monetary and non-

monetary rewards signal appreciation of quality work and achievements to employees and thereby enhance performance.

4.4.3: Information Sharing Practices

The third variable of the study focused on information sharing among virtual team members. It was measured using seven indicators formed on the basis of questions. The respondents were asked to indicate their opinions in a five point-likert scale the effect of information sharing on project performance of selected public universities in Kenya and the findings were as shown in Table 4.7

Table 4.7: Information Sharing Practices

Statement	N	Mean	S.D
Information sharing promotes knowledge sharing that enhances effectiveness of a virtual teams	186	3.61	1.191
Information sharing conveys to me that I am important to the success of the organisation	186	3.63	1.156
Information sharing brings about ease of implementing tasks and projects among the members of virtual team	186	3.64	1.341
Transfer of information within the members of virtual team builds trust among members of virtual teams	186	3.69	1.281
Information sharing constitutes structure that governs the relationship of virtual team members	186	3.77	1.191
Information sharing enhances interpersonal relationship among virtual team members	186	3.71	1.287
Face-to-face sharing of information enhances virtual team effectiveness	186	3.79	1.219
Aggregate mean score		3.6914	1.238

Source: Research data (2018)

As shown in Table 4.6, for all the 7statements on information sharing was more than 3.6 which means that majority of the respondent agreed with the statement. The study found that majority of the respondents was of the opinion that information sharing to a large extent has an effect project performance in selected public universities in Kenya. The study points out that lack of information sharing leads to lack of trust among virtual team member. The findings are in line with Pare and Tremblay, (2007), who averred that information sharing

about important aspects and outcomes in the organisation communicates and signals to employees that they are pivotal members of the organisation and thereby enhance performance within the organisations.

4.4.4: Employee Commitment

Employee commitment was measured as a mediating variable in the study with seven indicators formed on the basis of questions. The respondent of the study were required to indicate their views on the effect of employee commitment on project performance. The respondents were also asked to indicate their views on how committed they are to their respective organisations on a five point-likert scale, and the findings from the data **analysed were as follows in table 4.8.**

Table 4.8 Employee Commitment

Statement	N	Mean	S.D
I really feel as if this organisation problems are my own	186	2.81	1.163
I would be very happy to spend the rest of my career with this organisation	186	2.88	1.059
I do feel emotionally attached to this organisation	186	3.06	1.163
My loyalty remains with this organisation irrespective of what happens	186	2.84	1.193
I like to be identified with this organisation	186	3.47	1.056
If I get another job I will leave this organisation	186	3.12	1.115
I am loyal to this organisation because I could get the benefits here from other organisations	186	2.85	1.241
Aggregate mean score		3.004	1.141

Source: Research data (2018)

As depicted in table 4.8, the responses varied among the respondents. Items 3, 5, and 6 showed that the respondents were committed to their organisations. The rest of the items on the table showed that respondents were neither agreed nor disagreed with the statement on various levels of commitment with their organisations. The aggregate average mean score (3.00) showed that the respondents were neither agreed nor disagreed with the statements on the level of commitment with their organisation.

4.4.5 Project Performance in Universities in Kenya

The respondents were asked to indicate their opinion on project performance in relation to items covering efficiency, cost reduction, and customer satisfaction in their respective organisations. The dependent variable was measured using seven indicators that were formed on the basis of questions that the respondent were required to indicate their views in a five point-likert scale. The findings were presented in table 4.9.

Table 4.9 Project Performance

Statement	N	Mean	S.D
Projects are implemented within a reasonable period of time	186	3.17	1.129
Project performance in higher learning institutions is achieved within the limit of resources deployed for use	186	3.16	1.236
Project effectiveness contributes to overall goals of the organisation	186	3.76	1.251
Reduced costs of implementing projects benefits the organisation	186	3.55	1.212
Reduced overheads contributes to the overall performance of the organisation	186	3.47	1.274
Customers' views towards the values created by the organisation is great	186	3.47	1.222
The organisation provides values for customers through good service delivery	186	3.55	1.383
Aggregate mean score		3.447	1.244

Source: Research data (2018)

As illustrated in table 4.9 above, the mean scores for each of the 7 statements showed that the respondents' opinions on performance was above 3 which implies that it tends towards agreement that performance has been achieved. The items that received the highest mean scores were project effectiveness, cost reduction, service delivery to customers *(M>3.5).* The items that were rated low on performance were achieving performance within the limit of resources, reducing overheads, and customers views on the value created by the organization *(M<3.5).*

 Therefore, it shows that the respondents agreed to all the items measuring project performance in this study. The respondents agreed that project performance entails measures

of efficiency, cost reduction, and customer satisfaction, and this is consistent with the position of Shnhar, *et al.*, (2001).

4.5 Inferential Statistics

Multiple regression statistics was employed to test the relationships hypothesised in this study.

4.5.1 Regression Analysis

Multiple regression method was used to determine the predictive power of the independent variable (Virtual Team Management Practices) on the dependent variable (Project Performance) of this study. The results of the regression analyses are presented in tables 4.10 and 4.11.

Table 4.10 Regression result for Model 1

R	R^2	Adjusted R^2	F-value	Sig
.587	.345	.334	31.959	.0000

As illustrated in the above table (see Table 4.10), the coefficient of determination (R^2=.345) showed that 34.5% of variation in dependent variable (project performance) was measured by independent variable (virtual team management practices). This means that 65.5% variation in project performance can be measured by other variables apart from virtual team management practices. The adjusted R^2 with value of .334 showed 33.4% of the variation explained in dependent variable by the independent variable from the population not from the sample. This means that, considering the total population of the study, 33.4% of variation in project performance was explained by virtual team management practices. The F-value in the above table showed the model is fit with the significant value of 31.959. This showed that the regression model relating virtual team management practices significantly predicted project performance at 95 level of significance.

Table 4.11 Regression coefficient

The regression coefficient table below intends to explain the coefficients of the dependent variable when other variables are constant.

Model	Unstandardized coefficient		Standardised coefficient	T	Sig
	β	Std Error	Beta		
Constant	1.142	.264		4.321	.000
Effective communication	.200	.096	.192	2.086	.038
Recognition	.295	.097	.328	3.037	.003
Information sharing	.128	.093	.124	1.368	.173

The β-values under unstandardized coefficient explained the contributions of each predictor to the outcome variable based on the unit of measurement of variables. Therefore, using the unstandardized coefficient values in the linear regression equation, the regression model derived from the test was expressed as:

$$Y = 1.142 + 0.200X_1 + 0.295X_2 + 0.128X_3 + \mathcal{E}.$$

In the above regression model, the value of 1.142 is the coefficient of the dependent variable (project performance) when other variables remain constant at zero. The b-value of 0.200 represents the contribution of effective communication to project performance in the regression model. The b-value of 0.295 also represents the contribution of recognition practices to the dependent variable (project performance). The least contribution to the dependent variable is the information sharing practices with the value of 0.128. This value represents insignificant contribution to project performance. All the b-values show that the variables in the regression model contributed to the prediction of the dependent variable (project performance). This value represents the highest contribution to the dependent variable. The regression model was used to report on the hypotheses of the study.

4.5.2 Hypothesis One (H_{01})

Hypothesis one of the study sought to establish the effect of communication effectiveness on project performance. The regression results reported that the $\beta=0.2$ for communication was statistically significant at $p<0.05$. The finding implies that holding all other factors constant, a unit change in communication would lead to an increase in project performance by 0.2 points implying that effective communication has a positive effect on project performance among universities in Nairobi City County. This means the hypothesis of no effect (null hypothesis) is not supported. Based on these results, the study concludes that communication effectiveness has a significant positive statistical effect on project performance among selected public universities in Kenya.

The findings of positive effect are consistent with study of Chatfield et al. (2014) that effective communication influenced virtual team effectiveness which in turn lead to creating values in the organisation. The finding on this hypothesis is also consistent with the arguments of the resource based view theory. The theory observed that an organisation would eliminate uncertainties and remains competitive advantaged in the external environment if it is able to build internal capacities and potentials which are valuable, rare, inimitable, and have no substitute. According to the study, the resources that enable a firm to design and execute a value-creating strategy include communication systems.

4.5.3 Hypothesis Two (H_{02})

The second hypothesis (H_{02}) sought to establish the effect of recognition practices on project performance. The regression result reported that the $\beta=0.295$ for recognition was statistically significant at $p< 0.05$. This means that the hypothesis of no effect (H_{02}) is not supported. Therefore recognition practices are positively and significantly correlated with performance.

The findings of positive effect of recognition practices are consistent with the study of Pare and Tremblay, (2007).

The findings are also in line with social exchange theory which posit that if employees perceive that their organisation considers them as a valuable asset, they may likely to reciprocate this as a gesture towards assuming positive behaviour within the organisation. Therefore the findings on this hypothesis is consistent with the argument that if employee perceive that the organisation consider valuable by recognising their efforts, they may reciprocate a positive gesture back to the organisation.

4.5.4 Hypothesis Three (H_{03})

The third hypothesis of this study sought to establish the effect between information sharing practices and project performance. The t-statistics showed a value of 1.368 at the level of 0.173 ($p > 0.05$). This means the hypothesis of no relationship (H_{03}) is not rejected. From the value of t-statistics, there is no significant relationship between information sharing practices and project performance. The findings of no relationship negated the previous study of Pare and Tremblay (2007).

In the early findings the null hypothesis was supported, even though the variables has positive effect on project performance, the effect is not statistically supported. The alternate hypothesis is not supported and so the study fails to reject the null hypothesis and conclude that information sharing does not have significant statical effect on project performance.

This findings on H_{03} is not consistent with the findings of the previous research by fisher (2000) and (Mustafa 2017) who had identified achievement, recognition, information sharing, advance/growth, and feedback as the most common events to which employees attribute positive affective reactions, however in the current study, the finding is that there is no significant statistical effect. The study observe that these descriptive statistic on the

predicator variable for this hypothesis offer some possible explanation. Even though the aggregate mean score stands at 3.6914 tending towards level of agreement, the reliability of the responses through the standard deviation was relatively high (item 3,4,6 & 7 with SD of 1.34,1.28,1.29 &1.22 respectively) implying that the respondent did not totally disagree. The theory on Affective Event Theory postulate that though work environment features /event does not stimulate different reactions, human resources practices have a positive relationship link with affection reaction, which in turn influence employees attitudes and behaviours.

4.5.6 Hypothesis Four (H_{04})

The fourth hypothesis of this study was to establish the effect of team commitment on the relationship between virtual team management and performance of in selected universities in Kenya. The results of the data analysed using Process Macro as prescribed by Hayes in 2009 are presented in table 4.12:

Table 4.12 Mediating Effect of Employee Commitment

Coefficient	Total Effect	Direct Effect	Indirect Effect (Employee commitment)
B	0.6461	.5602	.0859
Se	0.679	.0675	0.342
R^2	0 .3299	0.3947	0.0826
F-value	90.579	59.655	16.576
T	9.5173	8.2927	9.8940
Sig.	.0000	.0000	0.0000

Source: Research data (2018)

The value of 0.0859 in the above table shows that the difference between the b-values of the total and direct effects of the relationship of the constructs of this study is significantly different from zero. The value of 0.0859 shows the indirect relationship between Virtual Team Management Practices and project performance through employee commitment as a

mechanism. Therefore, employee commitment mediates the relationship between virtual team management practices and project performance (β_4-$\beta_5' \neq 0$, 0.0859). The findings of positive mediation of employee commitment are consistent with study of Pare and Tremblay (2007).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter addresses the summary of the findings, the conclusions and the study recommendations for future research. This is done in line with the general objective which was to determine the effect of virtual team management practices on the project performance of selected public universities in Kenya. The specific objectives of the study were to determine the effect of communication on project performance of higher learning institution, to establish the effect of recognition practices on project performance of higher learning institution, to identify the effect of information sharing on project performance of higher learning institution, and to determine the mediating effect of team commitment on project performance of some selected public universities in   Kenya.

5.2 Summary of the Study

Organisations are involved in virtual activities not only to enhance reduced cost of operations, bridge the impediments created by distance, but also to improve efficiency and satisfy potential customers so as to obtain sustainable competitive advantage. Public universities in Kenya are not therefore left out in embracing virtual operations in order to attain sustainable competitive advantage by way of communicating values to the stakeholders. Studies have therefore emphasised that the performance of an organisation rests on the design and implementation of effective management practices. Therefore, if an

organisation desires optimum performance from its virtual arrangements, the team and the employees involved in such virtual arrangement need to be properly managed through the design and implementation of effective management practices

It is on this background that this study sought to analyse the effect of virtual team management practices on the project performance of public universities in Kenya. The specific objectives of the study were: to determine the effect of effective communication on project performance of higher learning institution, to establish the effect of recognition practices on project performance of selected public universities, to identify the effect of information sharing on project performance of selected public universities, and to determine the mediating effect of team commitment on project performance of public universities in Kenya.

The study employed both descriptive and explanatory research design using cross sectional survey design. Data were collected through self-administered questionnaires. Descriptive statistics was used to summarise the data analysed and inferential was employed via multiple regression analyses to establish the relationship hypothesised in this study. In this study, four hypotheses were tested using multiple regression statistics. The relationship between effective communication and project performance was found positive and statistically significant. The relationship of recognition practices and project performance was positive and statistically significant, and also the relationship between information sharing practices was also positive and statistically significant. The findings of indirect relationship showed that team commitment served as a mechanism through which virtual team management practices impacts on project performance.

5.3 Conclusions

Based on the findings above the study concluded that improved project performance requires effective communication, recognition practices, and information sharing. The findings showed positive direct relationship of virtual team management practices on project performance. This means that organisations that are involved in virtual team activities must design and implement good management practices as a means of attaining project performance. The findings of indirect relationship of team commitment were significantly established. This means that when good management practice are designed and implemented in an organisation, team commitment is thereby enhanced, which in turn, lead to performance desired by the organisation. Organisations should therefore ensure that best management practices be designed and implemented towards obtaining the commitment of employees so as to attain the desired performance.

5.4 Recommendations

From the findings of this study, several policy implications can be drawn for effective application of virtual team management practices in selected public universities in Kenya. The policy implications are presented as per the study objectives. Communication was found positive and contribute to project performance. Hence, management of an organisation must ensure that team members in virtual settings are well equipped with the necessary communication facilities and gadgets so as to enhance efficient operations and decision making.

Recognition practices were found positive and the most significantly contribution to project performance. Recognition practices here connote non-financial rewards that an organisation uses to appreciate its workforce for the job well-done. These practices signal and communicate to employees that their organisations value and recognise them as pivotal members. Therefore, the study recommends that management of an organisation should

constantly embrace attitude of appreciating its workforce and this will create a sense of belongings within the organisation.

Information sharing did not positive and significant relationship with project performance. This means that sharing of important information about the activities of the organisation does not influence the performance virtual team working in the organisation. This study recommends that the management of an organisation can improve in the aspect of sharing important information about the activities of the organisation and this may lead to trust which in turn leads to performance on the part of virtual team members in the organisation.

5.5 Suggestion for Further Research

This study is cross-sectional and it is conducted in the context of some selected universities in Kenya, therefore, the findings of the results may not be generalised to other sectors apart from educational sector, and also the causality effect of the relationship between virtual team management practice and project performance cannot be ascertained. The study therefore recommends that future research studies on the constructs of virtual team and performance of projects should carry out longitudinal study to explore the causality effect of the relationship between virtual team practices and project performance. This study also recommends that a construct that determine the interactional effect (moderation) between virtual team management practices and project performance be investigated in subsequent research studies

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APPENDICES

APPENDIX I: RESEARCH QUESTIONNAIRE

PART A: RESPONDENTS PERSONAL DETAILS

(Instruction- Tick where appropriate)

1: Gender:

Male ( )   Female   ( )

2. Age:

20-30yrs. ( ) 31- 40yrs. ( ) 41-50yrs. ( ) 51 yrs. and over ( )

3, Highest Education Level :

Secondary level ( ) College level ( ) Bachelor's degree ( ) Professional Qualification ( )

(Specify …………………………

4. Working Experience:

1-5 years ( ) 6-10 years ( ) 11-15 years ( ) 15 years and above ( )

PART B: QUESTIONNAIRE ITEMS

Virtual Team Effectiveness

Please tick the boxes below the extent to which you agree to the following statements (Key:
5-Strongly agree, 4=Agree, 3= Neither agree or disagree, 2= Disagree, 1= Strongly disagree)

Section 1: Effective communication

	STATEMENT	5	4	3	2	1
1.	Major assignments to be carried out are communicated to the members of team via telephone conversation					
2.	Interaction with supervisor takes place virtually through communication means					
3.	The use of messages and chats will enhance virtual team management practices					
4.	Emailing and telephoning of information will promote effective communication among virtual teams					
5	Video conferencing will enhance effective communication in virtual membership teams					
6.	Communication means will promote trust among members of virtual teams					
7.	Face to face communication will enhance virtual team management practices					
8.	Feedback about the performance of a project is done via communication means					
9.	Provision of communication gadgets will enhance effective communication among the virtual team members					
10.	Effective communication will promote interpersonal relationship among virtual team members					

Section II: Recognition practice

	STATEMENTS	RESPONSES				
		5	4	3	2	1
1.	Appreciating my efforts towards the project team success serves as a motivator					
2.	Recognition of contributions of members to the success of the virtual teams builds trust					
3.	Recognition of efforts through financial rewards encourages to perform better					
4.	Public acknowledgement of team effort promotes virtual team management					
5.	Provision of gifts such as communication gadgets is a way of recognising efforts of the virtual team members					
6.	Annual appreciation of members in dinners promotes management of virtual team members					
7.	Facilitating training programmes such as workshops, conferences, simulation training, etc. conveys to the virtual team members they are important part of the organisation					
8	Facilitating of face- to -face meetings is an important way of recognising my efforts in a team					
9	My suggestions count as far as decision-making is concerned among the team members					

Section III: Information Sharing Practice

	STATEMENTS	RESPONSES				
		5	4	3	2	1
1.	Information sharing promotes knowledge sharing that enhances management of a virtual teams					
2.	Information sharing conveys to me that I am important to the success of the organisation					
3.	Information sharing brings about ease of implementing tasks and projects among the members of virtual team					
4.	Transfer of information within the members of virtual team builds trust among members of virtual teams					
5.	Information sharing constitutes structure that governs the relationship of virtual team members					
6.	Information sharing enhances interpersonal relationship among virtual team members					
7.	Face-to-face sharing of information enhances virtual team management					

Section D: Employee Commitment

	STATEMENTS	RESPONSES				
		5	4	3	2	1
1.	I really feel as if this organisation problems are my own					
2.	I would be very happy to spend the rest of my career with this organisation					
3.	I do feel emotionally attached to this organisation					
4.	My loyalty remains with this organisation irrespective of what happens					
5.	I like to be identified with this organisation					
6	If I get another job I will leave this organisation					
7.	I am loyal to this organisation because I could get the benefits here from other organisations					

Section E: Project Performance

	STATEMENTS	RESPONSES				
		5	4	3	2	1
1.	Projects are implemented within a reasonable period of time					
2.	Project performance in higher learning institutions is achieved within the limit of resources deployed for use					
3.	Project effectiveness contributes to overall goals of the organisation					
4.	Reduced costs of implementing projects benefits the organisation					
5.	Reduced overheads contributes to the overall performance of the organisation					
6.	Customers' views towards the values created by the organisation is great					
7	The organisation provides values for customers through good service delivery					

APPENDIX II: BUDGET

Expenses	Cost
Printing and stationary	12,000
Travelling costs	2,500
Telephone expenses	1,500
Data collection	3,000
Data analysis	14,000
Total	**34,500**

APPENDIX III: WORK PLAN

TIMELINE / ACTIVITY	NOV-JAN, 2017/2018	FEBRUARY 2018	MARCH 2018	APRIL 2018
RESEARCH PROPOSAL WRITING	███████			
RESEARCH PROPOSAL PRESENTATION		███████		
DATA COLLECTION AND ANALYSIS			███████	
REPORT WRITING AND PRESENTATION				███████

Results of the Data Analysis (SPSS Version 20)

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
	male	121	65.1	65.1	65.1
Valid	female	65	34.9	34.9	100.0
	Total	186	100.0	100.0	

Effective communication practices

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.943	.942	10

Recognition practices

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.969	.969	9

Information sharing practices

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.961	.962	7

Team commitment

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.773	.770	7

Project performance

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.944	.943	7

Correlations

		Project Performance	Effectiveness	Recognition	Information Sharing
Pearson Correlation	Project Performance	1.000	.517	.565	.488
	Effectiveness	.517	1.000	.754	.624
	Recognition	.565	.754	1.000	.744
	Information Sharing	.488	.624	.744	1.000
Sig. (1-tailed)	Project Performance	.	.000	.000	.000
	Effectiveness	.000	.	.000	.000
	Recognition	.000	.000	.	.000
	Information Sharing	.000	.000	.000	.
N	Project Performance	186	186	186	186
	Effectiveness	186	186	186	186
	Recognition	186	186	186	186
	Information Sharing	186	186	186	186

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	Sig. F Change
1	.587[a]	.345	.334	.949	.345	31.959	3	.000

a. Predictors: (Constant), Information Sharing, Effectiveness, Recognition

b. Dependent Variable: Project Performance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	86.280	3	28.760	31.959	.000[b]
	Residual	163.784	182	.900		
	Total	250.065	185			

a. Dependent Variable: Project Performance

b. Predictors: (Constant), Information Sharing, Effectiveness, Recognition

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	1.142	.264		4.321	.000	.621	1.664					
Effectiveness	.200	.096	.192	2.086	.038	.011	.389	.517	.153	.125	.423	2.365
Recognition	.295	.097	.328	3.037	.003	.103	.487	.565	.220	.182	.309	3.231
Information Sharing	.128	.093	.124	1.368	.173	-.057	.312	.488	.101	.082	.437	2.287

a. Dependent Variable: Project Performance

Mediating Effect of commitment.

```
Model Summary
          R        R-sq       MSE         F        df1        df2
p
      .2875      .0826      .6182    16.5755     1.0000   184.0000
.0001

Model
              coeff        se          t          p       LLCI       ULCI
constant     2.1479      .2171     9.8940      .0000     1.7196     2.5762
vtmp          .2277      .0559     4.0713      .0001      .1174      .3381

**************************************************************************
OUTCOME VARIABLE:
 Pperf

Model Summary
          R        R-sq       MSE         F        df1        df2          p
       .6282      .3947      .8272    59.6548     2.0000   183.0000      .0000

Model
              coeff        se          t          p       LLCI       ULCI
constant      .2234      .3108      .7188      .4732     -.3898      .8367
vtmp          .5602      .0675     8.2927      .0000      .4269      .6934
Ecommit       .3774      .0853     4.4252      .0000      .2091      .5456

************************** TOTAL EFFECT MODEL **************************
OUTCOME VARIABLE:
 Pperf

Model Summary
          R        R-sq       MSE         F        df1        df2          p
       .5744      .3299      .9107    90.5792     1.0000   184.0000      .0000

Model
              coeff        se          t          p       LLCI       ULCI
constant     1.0340      .2635     3.9241      .0001      .5141     1.5538
vtmp          .6461      .0679     9.5173      .0000      .5122      .7800

*************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y ***************

Total effect of X on Y
     Effect        se          t          p       LLCI       ULCI       c_ps
c_cs
      .6461      .0679     9.5173      .0000      .5122      .7800      .5557
.5744

Direct effect of X on Y
     Effect        se          t          p       LLCI       ULCI      c'_ps
c'_cs
      .5602      .0675     8.2927      .0000      .4269      .6934      .4818
.4980

Indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
Ecommit      .0859      .0342      .0267      .1613

Partially standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
Ecommit      .0739      .0286      .0250      .1379

Completely standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
Ecommit      .0764      .0302      .0240      .1440

*********************** ANALYSIS NOTES AND ERRORS ***********************
```

```
Level of confidence for all confidence intervals in output:
  95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals:
1000
```

S