PROJECT MANAGEMENT PRACTICES AND THE PERFORMANCE OF VIRTUAL PROJECT TEAMS IN A CASE OF UPWORK GLOBAL INCORPORATED

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A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF BUSINESS ADMINISTRATION (PROJECT MANAGEMENT OPTION) OF KENYATTA UNIVERSITY

MARCH, 2019
DECLARATION

Declaration by the candidate

This is my original research project. It hasn’t been presented for a degree in any other University. No part of this project is to be reproduced without the author’s and or / Kenyatta University’s permission.

Signature: __________________________ Date: ______________

Mumbua Ng’etich Lydia

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I confirm that the work in this research project was done by the candidate under my guidance as the appointed university supervisor.

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DEDICATION

To my mum: Ann; dad: William and father- in-law Benjamin: thank you for your support and counsel. To my husband Simeon: thank you for your unwavering encouragement throughout the entire period of my studies. To my daughter and sons, for being so understanding: you made it easier for me to adapt to my new schedule.
ACKNOWLEDGEMENT

My sincere gratitude to the Lord, for this opportunity and provision: it’s amazing.

Special thanks to my supervisor, Dr. Caleb Kirui for his guidance in carrying out this project. I also wish to extend my gratitude to my MBA classmates 2015 for their assistance and support during the course. You are all blessed.
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ABBREVIATIONS AND ACRONYMS

GVT’S    Global Virtual Teams

KPIs     Key Performance Indicators
**OPERATIONAL DEFINITIONS OF TERMS**

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<th><strong>Collaborative Technology</strong></th>
<th>Digital tools used to communicate and submit work online.</th>
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<td><strong>Freelancer</strong></td>
<td>An online outsourcing organization where prospective employers post work seeking virtual employees to complete the tasks.</td>
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<tr>
<td><strong>Key Performance Indicators</strong></td>
<td>Gauges of measuring virtual team performance based on the influence of project management practices (project management strategies, managerial experience, collaborative technology and risk management)</td>
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<td><strong>Managerial Experience</strong></td>
<td>Prior work experience in team management</td>
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<tr>
<td><strong>Online Outsourcing</strong></td>
<td>Internet based companies and organizations that prospective employers use to post tasks and hire skilled virtual employees to complete the tasks.</td>
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<td><strong>Payooner</strong></td>
<td>An online organization with virtual working opportunities for freelancers</td>
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<td><strong>Performance</strong></td>
<td>The ability for a virtual team to meet an organization’s or employer’s expectations concerning a given task on time, within specified costs and according to task requirements.</td>
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<td><strong>Project Management Practices</strong></td>
<td>Methods that enable goal achievement when dealing with virtual team projects</td>
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<td><strong>Project Management Strategies</strong></td>
<td>Plans that organizations use to ensure that their virtual teams have a high performance rate.</td>
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<tr>
<td><strong>Risk Management</strong></td>
<td>Strategies taken by virtual team managers and virtual team members to make sure nothing makes it difficult for the team to complete the project on time, within the budget and set standards</td>
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<td><strong>Teleworker Freelancer</strong></td>
<td>Term used to describe a virtual employee who is self employed</td>
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<tr>
<td><strong>Upwork</strong></td>
<td>An online organization used by individuals and organizations to find and post virtual employment opportunities</td>
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<td><strong>Virtual Employee</strong></td>
<td>An employee who uses technology to work for an organization while they themselves may be located in a different part of the world</td>
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<td><strong>Virtual Office</strong></td>
<td>An online working platform with tools that allow virtual employees/ and teleworker freelancer work and communicate with their employer and colleagues</td>
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<tr>
<td><strong>Virtual team</strong></td>
<td>Group of individuals who work together on a project while they are located in different geographic locations and also use online tools to work and communicate</td>
</tr>
<tr>
<td><strong>Zhubajie/ Witmart</strong></td>
<td>A virtual organization that enables freelancers find virtual work posted by different organizations and businesses.</td>
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ABSTRACT
The way we work in our fast-paced world is quickly changing. Skilled but unemployed Kenyans are seeking and finding work on online platforms on contract and full–time basis. They are part of virtual teams that rely heavily on collaborative software applications to work. Their performance is gauged by how they meet project goals within the set costs, time and scope. Unfortunately, some teams are unable to meet the goals and this compromises their performance. This is the problem addressed in this study by investigating the effects project management practices have on the performance of virtual project teams in Kenya. The specific objectives were: to establish the effect of project management strategies; managerial experience, collaborative technology and risk management on the performance of virtual project teams in Kenya. The study was anchored by the control and contingency theories. The research design was descriptive. The target population was 574 Kenyans who are virtual freelancers on the Upwork Global Incorporated platform. Using the simple random sampling, the researcher got a sample of 172. A semi structured questionnaire was used to collect primary and secondary data. The data was then analyzed using descriptive and inferential statistics. The regression model summary analysis revealed that 85.4 per cent of the independent variables explained the virtual teams’ performance and 25 per cent by other factors not filtered into the study. Regression analysis showed that changes in the independent variables had an effect on performance, notably managerial experience and risk management. The study revealed that each of the identified practices had key areas/tasks that played a major role in virtual project team performance. The findings based on the first objective of the study determined that all four project management strategies had an effect on the performance of virtual project teams in Kenya. The findings of the second objective of the study established that keeping the team motivated was the managerial experience variable that had an effect on the performance of virtual teams in Kenya. Findings based on the third objective of the study established that a common set of communication guidelines, software compatibility, and a common suite of collaboration tools were the independent variables that had an effect on the performance of virtual teams in Kenya. The findings of the fourth objective of this study established that ill prepared team members and risk management were the risk management variables that had an effect on virtual project teams in Kenya. Based on these conclusions, the researcher recommended that organizations identify the project strategy that works best for them and build their virtual team around it. This would ensure that it would be a high performance team. Also recommended was training for virtual project managers on virtual project team management; the development and application of risk assessment and management plans; and remote collaboration tools.
CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Around the world employers are beginning to appreciate a new breed of specialist employee- the virtual employee also known as the teleworker freelancer. This type of employee relies heavily on technology to get their work done. A strong internet connection, Wi-Fi, project management skills and software applications are their tools of trade. They are also not limited by borders. In this type of work environment, it is not unusual for virtual project managers to have team members located in different countries. According to Johnson, Heimann and O’Neill (2001) most western organizations have ‘moved away from working with people in visual proximity to working with people around the globe.’ Dulebohn and Hoch (2017) are in agreement and cite a survey of ‘1372 business respondents from 80 countries’ that found that ‘85 per cent of them were in virtual teams.’

Wise (2016) pointed out that ‘technology allows for the lifting of barriers that restricted traditional jobs. Barriers such as geographic boundaries, cultural norms and organizational practices and restrictions regarding timing and the locations of employee contribution no longer limit how work gets done’. According to Hertel, Geister and Kondrat (2005) ‘technology has made it possible for organizations to have virtual employees to some extent.’ According to a study by Deloitte Touche (2013) due to technology remote teams ‘working across time zones are becoming more common and could affect traditional 9 -5 work day.’
Gillam and Oppenheim (2006) define virtual teams as ‘groups of people who work across time, space and often organizational boundaries using interactive technology to facilitate communication and collaboration.’ Ebrahim, Ahmed and Taha (2009) define virtual teams as one whose ‘members are located in more than one physical location.’ This location more often than not, is where they live: that is, their home (Kim, 2004).

The virtual team like the traditional team is managed by a manager. Smith and Sinclair (2003) define a virtual manager as a person who ‘manages people; works from a different geographical location from their team and communicates with them through email and phone.’

1.1.1 Project Management Practices

According to Casio (2000) virtual work is project based because of its heavy emphasis on results. This means that project management has become important to this sector. Beise, Carte, Vician and Chidambaram (2010) noted that ‘there has been a growth of structured project management practices worldwide. Such practices have been formalized in industry standards such as the Project Management Body of Knowledge (Project Management Institute, 2004) and the APM Body of Knowledge (Association for Project Management, 2006) ‘PMBOK and APMBOK respectively.’

Ferrazzi (2014) noted that ‘virtual teams are hard to get right”. This affects the way the teams work and their performance. According to Govinderarajan and Gupta (2001) ‘ in their study of 70 global virtual teams, only one-third of the teams in the sample rated their performance ‘highly successful’ and the remaining 82 per cent fell
short of their intended goals’. Ebrahim, Nader and Taha (2009) ‘found that success in implementing virtual team working is more about processes and people than about technology.’ This collaborates with findings by Rad and Levin (2003) who stated that the ‘successful performance of the project team, traditional and virtual alike is characterized by the team’s performance in handling the full complement of life-cycle issues of the project.’ According to Cooke-Davis (2001) ‘performance of projects can be improved through the identification and understanding of those project management practices that lead to superior performance’. This identification is important because it enables the manager and the team to use what works for them. According to Lu, Watson-Manheim, Chudoba and Wynn (2006) “having a variety of practice too many practices can negatively impact the virtual teams’ performance.”

Previous studies have narrowed down the practices for high performance in virtual teams to project management practices. Mian, Mohsin, and Saber (2017) stated that the ‘success of a project depends on the dispensation and utilization of project management practices.’ Besner and Hobbs (2006), noted that ‘project management practices provide organizations with a strategic and valuable asset in that they help to improve project success when combined with good measurement tools.’ Attarzadek and Siew (2008) defined project management practices as ‘techniques and tools used by project managers to ensure a project’s success.’ In their Executive Guide to Project Management, the Project Management Institute (2012) identifies project management practices as ‘skills, tools and processes that are necessary for a project to be successful.’
Turner (2012), identified a number of project management practices which includes: requirements definition (strategies); risk management; activities related to managerial experience such as status reports ‘time, work breakdown, issue management, status reports ‘costs, resource schedules, project road map, team building, and responsibility assignment matrix; project book and agile methods (collaborative technology).

Beise et al. (2010) quotes (Tiwana and Keil, 2006) who in their study identified risk management as a project management practice ‘project management practices that have been linked to information technology project success include risk management’. Dube and Marnewick (2016) identified the following as criteria for measuring virtual project team performance: leadership, trust, communication, team cooperation, reliability, motivation, comfort and social interaction. Based on these prior identified practices, the researcher in this study focused on the following practices: project management strategies, managerial experience, collaborative technology and risk management.

1.1.2 Performance of Virtual Project Team

Siebdrat, Hoegl and Ernst (2009) in a study of ‘70 virtual teams found out that 18 percent of them were not successful.’ In yet another study by Onpoint Consulting (2010) 27 per cent of teams were not performing as expected. Dactus Group (2013) found that 1 out of 20 managers indicated that they were managing their team well. Weimann, Pollock, Scott and Brown (2013) found out that virtual team performance was affected by poor use of technology. The solution as presented by Cooke-Davis
to improve on the performance of the virtual teams and their managers lies in identifying and adopting project management practices.

Dube et al. (2016) cited (Meyer, Roodt and Robbins, 2011) who defined ‘performance as an act of doing something which focuses on monitoring the progress and accomplishment of the activities through measurable parameters.’ A virtual project team leader does not have the privilege of physically seeing the team members and therefore the measurement of a team’s performance has to be different. This agrees with Weimann et. al. (2013) support this emphasis on team performance from the client’s point of view that ‘virtual team performance is often evaluated on the basis of acceptance of a specified output by a customer.’ Cune and Fogelberg (2012) agreed with this and reported that ‘in order to evaluate a virtual teams progress and productivity, remote managers have to switch from appraising their reports not on the work they put in, but on the results they get out.’

According to Pitagorsky (2007) ‘this means that to manage a complex virtual team there is need for well-thought-out processes and a toolset.’ This means that the ‘virtual team leader has to set clear and precise supporting SMART goals that is Specific, Measurable, Attainable, Realistic, Time-specific goals.’ Cune (2012) was in agreement and cited Hartel and Orlikowski (2004) who noted that ‘clear goals, roles and expectations help employees to work more independently without constant supervision from their manager. And if defined within a virtual team so that they are
interdependent, team members are likely to work together more effectively than they might with independent, individual goals.’

1.1.3 Upwork Global Incorporated

There are a number of online outsourcing platforms that corporations use to find virtual employees who ultimately make up their virtual team. In the World Bank report by Kuek Siou, Paradi-Guilford, Fayomi, Imaizuni, Ipeirotis, Pina and Sing (2015), they identified Upwork Global Incorporated (formerly oDesk), Freelancer and Zhubajie/ Witmart as the top three online outsourcing organizations with a representation of both genders. According to a survey on freelancers from 170 countries, conducted by Payooner (2018), another online outsourcing organization, 23 per cent of freelancers are ladies while 77 per cent are men. Kenya and South Africa are the continental leaders on the supply of virtual employees on these online platforms. According to Lehdonvirta (2017) majority of African freelancers, opt for translation and writing jobs.

Upwork Global Incorporated is the largest online outsourcing organization as measured by gross sales volume (US$ 1.5 billion). Its growth is largely dependant on freelancers delivering quality services to clients who have hired them. According to the World Bank Report by Kuek Siou et. al. (2015), Kenya was ranked 10th on Upwork Global Incorporated with over 10000 digital workers. This seems to indicate that Upwork Global Incorporated is highly preferred by Kenyan freelancers and was therefore the focus of this study.
On their initial public offering prospectus (2018) filed with the US Securities and Exchange Commission, Upwork Global Incorporated company report states that one of the risks they face is “freelancers on their platform providing services that do not meet their clients requirements.” To ensure that freelance work performance is always at its best, job success rates are indicated on each freelancer profile. According to Green, Walker, Alabulththim, Smith and Phillips (2018) these are “ranking and reputation scores” that indicate what clients think about the freelancers work quality; ability to meet deadlines and how they interact / communicate. A job success rate of 80% and above is preferable since it indicates high job performance and reassures prospective clients that the freelancer in question will deliver on their work as required.

1.2 Statement of the Problem
Working online is a growing trend in Kenya. Over 10,000 Kenyans have registered for work on a global online working platform known as Upwork Global Inc. The Kenyan government too in a bid to deal with the high unemployment among young adults has through its Ajira platform, identified Upwork Global Incorporated as one of the sites that qualified unemployed Kenyans can find work. The site has many available categories from various disciplines such as business, education, technology, writing, and many more. However, many of those signing up for work are not consistent in working online full time and submitting work that meets the clients’ requirements and therefore end up with poor rating which shows that their clients are not satisfied with their performance.
Work statistics from Upwork (2017) on Kenyan virtual workers using their platform between November 2017 to April 2018 show that during this 6-month period, out of the 17968 who had registered for work, only 1494 worked between 1 – 100 hours. Of these 1494, only 582 had a job success rate of 80 per cent and above and about 92 per cent had a job success rate of 79 per cent and below. These figures show that out of the registered freelancers, only 8 per cent worked between 1 and 100 hours in that 6 month period. Secondly, of those that did work in that hour category, only 39 per cent had a favorable job success rate. These figures collaborate with a study done by Ferrazzi (2014) citing Deloitte (2005) who found that 66 per cent of clients were not satisfied with the work done by information technology virtual teams.

To address these challenges project management skills and knowledge have become a common requirement from clients seeking to hire virtual freelancers. This is a skill that cuts across all disciplines. According to Aritz, Cardon, Logemann, Marsen and Walker (2016) “a project management approach helps develop virtual team skills that will impact positively on their performance” and avoid situations where work is below par. Ilies, Crisan and Muresan (2010) noted that these practices “reduced failure and maximized the achievement of set goals.”

Previous research on Kenyan online workers by Kuek Siou et. al (2015) and Mann and Friederici (2012) focused on the opportunities found on virtual platforms and the Kenyan uptake of these jobs. Their performance was not studied. Studies on virtual teams and their performance has mainly focused on western countries, such as Piccoli
and Ives (2000) on the USA; and Pullan and Prokopi (2016) on Europe. A gap exists on the Kenyan context. The purpose of the study was therefore to establish the influence of project management practices on the performance of virtual teams in Kenya.

1.3 Study Objectives

1.3.1 The General Objective
The study investigated effects of project management practices on the performance of virtual project management teams in Kenya.

1.3.2 The Specific Objectives
The study’s specific objectives were:
   i. To establish the effect of project management strategies on the performance of virtual project management teams in Kenya
   ii. To determine the effect of managerial experience on the performance of virtual project teams in Kenya
   iii. To assess the effect of collaborative technology on the performance of virtual project teams in Kenya
   iv. To establish the effect of risk management on the performance of virtual project teams in Kenya.

1.4 Research Questions
The following questions guided the study:
   i. What effect do project management strategies have on the performance of virtual project management teams in Kenya?
ii. What effect does managerial experience have on the performance of virtual project management teams in Kenya?

iii. What effect does collaborative technology have on the performance of virtual project management teams in Kenya?

iv. What effect does risk management have on the performance of virtual project management teams in Kenya?

1.5 Significance of the Study
This study helped in understanding the dynamics that lead to having a virtual project management team that performs by meeting client expectations such as starting and completing the project on time, within the set budget and resources. This was information that organizations in Kenya with virtual teams would find useful. Entrepreneurs thinking of venturing in the online outsourcing business would also find this research beneficial since it would help them identify whom to hire and how to retain freelancers who will be part of a virtual team that performs.

1.6 The Scope of the Study
The study investigated the effects that project management practices would have on the performance of virtual project teams in Kenya. Data collected from a section of Kenyan virtual workers (freelancers) on Upwork Global Inc. (formerly known as oDesk) was used as measures for the independent variables namely project management strategies, managerial experience, collaborative technology and risk management. The study was expected to take a maximum of four weeks. The study was conducted online since these are virtual teams with virtual offices.
1.7 Limitations of the Study
The researcher anticipated and did experience an unwillingness to provide information by key virtual business decision makers. The internet connection was good and caused no delay in data collection. However, due to respondent suspicions there was a delay in questionnaire responses and online communication that extended the data collection process by a month. Nevertheless, the researcher did make the effort to explain the importance and nature of the study so that the respondents were cooperative. The researcher also made sure that they had the permission to collect data so that respondents were more confident of providing information.

1.8 Organization of the Study
This research study was structured as follows: Chapter one presented the research background, statement of the problem, research objective: both general and specific; research questions; significance of the study; scope and limitations of the proposed study. Chapter two presented the literature review of project management practices influencing the performance of virtual project management teams. Chapter three discussed the methods and procedures used to conduct the study. It dealt with the research design; target population; sample and data collection instruments; procedure, analysis and presentation. Chapter four discussed the research findings, data presentation and analysis using descriptive and inferential analysis. Chapter five gave a summary of the research study findings, conclusions, recommendations and suggestions for further research.
CHAPTER 2

LITERATURE REVIEW

2.1 Introduction
This chapter gives the background information that helped the researcher to understand the topic under investigation. It covers a literature review of past studies on project management practices and the effects they have on virtual team performance. Included also is the conceptual framework.

2.2 Theoretical Review
According to Lu et. al (2006) and Ebrahim, Ahamed and Taha (2009) the use of virtual teams to get work done is a growing global trend among organizations. As a result, studies on virtual teams are on the increase. Previous studies focused on issues such as the characteristics of knowledge workers, and leadership in virtual teams. Performance of virtual teams has also been an area of study. This review looked at studies and theories that shed light on project management practices and how they influenced the performance of virtual teams.

2.2.1 Control Theory
According to Li, Yetton and Sauer (2010), the control theory ‘developed in 1975 by Ouchi and his colleagues focused initially on output by managers. It was further developed into an attempt to explain different control mechanisms used by managers to ensure that an organization meets its objectives.’ Kirsch (1996) defined the ‘control theory as an attempt to explain how one person or group in an organization can ensure
that others work towards achieving the set organizational goals.’ Based on this definition, the Control theory is applicable to virtual team managers whose goal is to ensure that virtual teams meet the client or organization objectives. They have to rely on certain tools and techniques to ensure high performance (Attarzadeh, et al., 2008).

Objective one of the study sought to establish the effect of project management strategies on the performance of virtual project teams in Kenya. The control theory guided this objective because it addressed the organizational goals that virtual teams deal with on a daily basis (Kirsch, 1996). This corresponds to Schiller and Mandviwalla (2007) who in their study on the different theories researchers have used in ‘Virtual Team Research’ identified the control theory as one that was used when dealing with the outcomes of a virtual teams work.

For Piccoli, Powell, and Ives (2004), the control theory dealt with the mechanisms through which an organization could be managed so that it moved toward its objectives and was conceptualized as the effort to ensure that individuals working on team projects act in conformity with predefined strategies (Kirsch, 1996). Non-conforming team members are therefore a risk that the rest of the virtual team and their manager have to monitor so that their work performance is not affected (Solomon, 2016). The control theory was appropriate because it focused on the importance of having a manager to guide the team.

Piccoli and Ives (2004) found out that virtual team behavior could ‘increase vigilance and when team members perceived that one of them was not working as should, trust was impacted making it difficult for the team to meet its targets.’ Li et al. (2010) in
their study confirmed that when ‘task uncertainty is low, an individual’s performance can be improved by making use of existing practices (March, 1991). The results from their study also showed that there was a relationship between control mechanisms and performance, though more complex than Ouchi had put forth.”

According to Piccoli and Ives (2000) Ouchi identified three types of control mechanisms: output, behavior and clan control. The behavior control mechanism is more suited to virtual teams. Townsend, DeMarie and Hendrickson (1998) noted that the behavior control applied to the virtual team manager more than the traditional manager because the virtual team manager had to monitor how the team actually works, communicates and manages whatever data they use (Piccoli and Ives, 2000).

The aim of objective four was to determine the effects of risk management on the performance of virtual project teams in Kenya. It was guided by the control theory because it addressed the control mechanisms on virtual team behavior which is part of risk identification and its management (Piccoli & Ives, 2004).

2.2.2 Contingency Theory

The contingency theory as proposed by an Austrian psychologist Fred Edward Fiedler in 1964 emphasized the importance of leadership personality and the situation in which the leader operated in (Virkus, 2009). The situation was defined as the work environment. The situation took central place in this theory and identified two types of leadership that emerged as a result of the environment that the leaders worked in. These were task motivated leadership and relationship motivated leadership. Dakrory and Abdou (2009) were in agreement with Northouse (2007) that the contingency
theory was a ‘valid approach because it has broadened the scope of leadership understanding, from a single focus to emphasizing on the importance of a leader’s style and the demands placed on them in different situations’.

The study’s objective number two was to determine the effect of managerial experience on the performance of virtual teams in Kenya. The contingency theory was relevant because it helps identify the different demands placed on virtual managers which require a different style of leadership as compared to managing a team that they can see. The theory was applicable because it dealt with the task motivated leadership styles which are characterized by activities which typify how virtual team managers plan to start and complete assigned projects and how to motivate the team members to complete those tasks (Northouse, 2007).

The Contingency theory was initially proposed in the 1950s by researchers from the Ohio State University who proposed that the most efficient organizations would be those that whose with internal features that were suited to the demands of their technologies or task environments (Scott, 2003). The study’s objective number three was to assess the effect of collaborative technology on the performance of virtual teams in Kenya. The contingency theory would guide the research on this objective because it dealt with organizations becoming aware of the changing trends in the work place, adjusting accordingly by having the right technology in place and being efficient as a result (Scott, 2003).
2.3 Empirical Review of Literature

2.3.1 Project Management Strategies and Virtual Team Performance

Pullan and Prokopi (2016) using a questionnaire sampled 168 participants in virtual teams and leading them in their study on ‘Leading Virtual Project Teams: Do’s and Don’ts’. They established that there were strategies that virtual team leaders could use to help their teams be successful. They found that virtual teams that were successful were those that paid attention to communication, risks, and training of team members. They also found out that all this was pegged to hiring the right people to be in the virtual team. This would assure the hiring client or organization that they had a team that would deliver as and when required.

Based on their review of literature in their study on ‘What is Project Strategy?’, Artto et al. (2007) identified four project strategies used by organizations namely obedient servant strategy, independent innovator strategy, flexible mediator strategy, and strong leader strategy. The team operating under the obedient servant strategy looks at the project from the organization’s point of view. Whatever project they work on meets the organizations goals. There is no other stakeholder who is as important as the parent organization. The team is expected to fit in with the parent organization culture as recommended in the article ‘How do you Convey Remote Work Culture in the Recruiting Process’ by (Fung, 2015). Gratton and Erickson (2007) in their study ‘eight ways to build collaborative teams’ focusing on team behavior at 15 multinational companies and found out that the performance for virtual project teams
under the obedient servant strategy was relatively high since they enjoyed strong support from the organizations decision makers.

According to an interview conducted by Innovative Management (2013) on two senior executives from Accenture, the team with an independent innovator strategy is not afraid to take risks and also aim to take their project a notch higher by coming up with new ways to meet the projects goals. The researchers also reported that this team is ambitious, has specific targets and does not shy away from doing things differently from the competition as they try to take advantage of technology and gaps to be filled. This meant that the team members needed to have strong negotiating and conflict resolution skills and still be focused on delivering as expected, on time and within the budget (Artto et al. 2008). They also measure their success according to the impact the project has on society and the environment rather than how the project will affect the stakeholders profit side of the business (Artto et.al. 2007).

The flexible mediator strategy worked well for a team that had several strong stakeholders including the parent organization. This type of team was functional in nature and worked well for teams that needed to work with a number of departments. Their success is based on how well the departments work together to meet the organizations goals. The strong leader strategy is one where the team is independent. According to Katzenbach and Smith (1993) in their study titled ‘the wisdom of teams: creating high performance organization’ focusing on Fortune 500 companies and the USA Army, they found out that a team that was committed to meeting its goals would perform well and also that the independent team was one that was committed to fulfilling its objectives. The strong leader team is one that worked well with only
those stakeholders who they had determined as necessary to help them meet the projects objectives.

2.3.2 Managerial Experience and Performance of Virtual Project Teams

Jarvenpaa and Leidner (1998) using questionnaires sampled 350 participants from all the continents in their study of ‘Communication and Trust in Global Teams’. They found out that many managers are uncomfortable with the concept of a virtual team because successful management of virtual teams may require new methods of supervision. However, Smith et al. (2003) found out that this only indicates the need for a project manager to run these virtual teams. Hoefling (2012), a virtual work professor and expert, confirmed these results by stating that the work of the project manager in a virtual team is to oversee the teams’ progress as well as the project’s progress. Rad and Levin (2003) in their study on ‘Achieving Project Management Success Using Virtual Teams’ acknowledged that virtual team management is not a simple, seamless transition, or one that can withstand a template one size-fits-all approach. They quoted (Wardell, 1998) who believes that managers must have already achieved success managing conventional in-house teams before they can be expected to manage an invisible team.

In determining the effect of managerial experience on the performance of the virtual teams, Hoefling (2012) in her study of ‘working virtually by observing and training virtual teams for over 20 years, first identified a number of tasks that a virtual project manager oversees: establishing goals and objectives for the virtual team; transforming tasks into deliverables for the remote team; estimating how long it will take the team
to complete the various tasks; assessing the teams on their individual strengths and weaknesses. Hamilton, Hodgkinson, and Byatt (2016), experts in project management, in their article on ‘managing virtual project teams’, identified them as the five aspects virtual teams project managers should concentrate on: managing goals; managing communications; keeping people motivated; regularly assessing the effectiveness of the remote communications and use of collaboration tools.

Virtual project teams that benefit from project managers with managerial experience will perform well in their work. Piccoli et al (2004) suggested based on conclusions of earlier research work on leadership (Kayworth and Leidner, 2001/2002) and individual roles in the virtual environment (Vogel et al. 2000) that ‘virtual teams benefit from the presence of individuals whose role is to stimulate regular, detailed, and prompt communication, and ensure that all team members are clear on their responsibilities.’ A study carried out by ‘Tiri, Ogolla, and Mburu (2015) on the transformational leadership role on performance of virtual teams focused on the leadership role of virtual project management team managers and how they influenced the teams’ performance. They found out that there was a positive relationship between leadership style and the team’s performance.’

Hoefling (2012) cites the following concerning the team’s performance: ‘There will be synergy in the teams since the project managers understand their skills and strengths and therefore assign the right jobs to the right virtual team members. This also makes conflicts manageable since conflict arises when other team members feel
they are taking on more work than others. Team members will be able to manage and adjust their schedules when they know what tasks they have to do, when they are due and are able to balance work and other social commitments’.

2.3.3 Collaborative Technology and Performance of Virtual Project Teams

According to Peters, Linda and Manz (2007) in their study on ‘team performance’ teams involved in virtual collaboration do not physically interact but communicate exclusively through technological channels. Wipro (2012) in the study on ‘the virtual office: the next generation workplace’ determined that the term virtual office arose because virtual teams work online. According to Sproull and Kiesler (1992) the concept of the virtual office would be non-existent were it not for technology. Gratton et. al (2007) found that virtual teams that performed well had a number of characteristics in common, among them ‘effective collaborative tools’. Rad et al. (2003) agree that virtual project team members rely heavily on technology to achieve their goals and objectives and therefore proposed that a common suite of tools and appropriate training as necessary. Mortensen and O’Leary (2012) in their review on ‘managing a virtual team’ noted that synchronization was necessary to keep one team member’s work up-to-date with the rest of the members. Hoeftling (2012) however cautioned managers to never to assume that all virtual team members understand how to use an organizations specific collaboration tools.

There are various collaboration tools that virtual teams can use however. The basic requirements needed are ‘phones with conferencing ability, online web meeting spaces, global time checker for global teams, mobile computers, and instant
messaging tools that are used to chat if the other virtual team member is online (Hamilton et al. 2012). A study by Mugwika (2016) on the ‘telecommuting model for small and medium enterprises (SMES) in Kenya, looked at the technology available for employees working virtually for the 2-3 days they were away from the office and found that the organization did not require to inject huge sums of money to meet such basic requirements. Concerning performance, Rad et al. (2003) noted that the increased use of virtual communication influences not only the team’s outcomes but its processes as well.

Edwards, Abigail, Wilson and John (2003) in their book ‘implementing virtual teams’ noted that influences such as being in different countries and working for different companies, have caused individual virtual team members to come up with their own style of communicating while online. To avoid any confusion that may arise, they recommend a general communications guideline that needs to be discussed by all members and agreed upon. Rad et al. (2003) recommended the use of unique metrics and tools to measure how virtual teams and their managers deal with issues pertaining to distant communication and the proper use of technology. Managers also needed to make sure that the team members’ software is compatible and more so if they have been working for different organizations (Wipro, 2012).

2.3.4 Risk Management and Performance of Virtual Project Teams
Kuek Siou et. al. (2015) in their study on ‘the global opportunity in online outsourcing’ gathered information from public data, interviewed online outsourcing firms and industry experts found out that there were benefits to be gained from the
growing online outsourcing market which companies use to hire skilled freelancers to form virtual online teams. They also acknowledged that their report did not capture data on virtual team members who opt to stop virtual work. This is a risk that hiring managers have to contend with as they look to hire and maintain teams that will stay on to the end of the project.

Hoefling (2012) identifies team members who are ill prepared to work at a distance as a source of conflict: they pose a risk to the virtual teams’ project progress. A hindrance in a project increases its scope, costs and delays the delivery date. According to Rad et al. (2003), the best way to deal with this problem was to use the team approach in risk management. ‘This means that team members are also involved in the management process. The project manager is in charge of the team’s performance but when the virtual team members are allowed to identify, classify, estimate their probability, impact and time frame of their occurrence, no stone is left unturned. According to Harpham (2015) a project management expert in his article ‘lead virtual teams’ this enables the team to continue with their work and finish on time’.

Kuruppuarachchi, (2009) in the case study of a certain organization noted in her paper ‘virtual team concepts in projects’ that if virtual team members did not know what was categorized as a risk, then the threats would go unreported or reported very late and recommended the use of a preplanned risk response. According to Goodpasture (2010) a project management expert, in his study on businesses using agile methods
wrote the book ‘project management the agile way: making it work in the enterprise’ and in it noted that virtual project managers need to “recognize and understand” what the threats are. Grabowski and Roberts (1999) in their review in ‘risk mitigation in virtual organizations’ found out that it was necessary for virtual organizations to have a plan / strategy that would identify and help in managing situations that may affect project completion within the set conditions. They identified four processes that should make up the risk management strategy. These included ‘communication, culture and trust.’

According to Plump and Ketchen (2013) in their review on ‘navigating the possible legal pitfalls of virtual teams’ they noted that organizations hiring virtual teams can easily overlook labor and personnel issues and intellectual property rights ultimately pose a risk to their project goals and virtual team performance. They recommend examination of legal requirements of the nation that the organization or employer is hiring from as well as employee contracts which not only protect the organization but also reassure the virtual employees and impacting positively on their performance.

2.4 The Literature Review Summary and Research Gaps
The performance issues that virtual management teams have due to their project management practices was the area focused on in this section. This being a relatively new global phenomenon, most of the studies revolve around the West. There is need for more research to be done focusing on the performance of virtual teams in Africa, their formation and sustainability. Table 2.1 presents a summary of the literature gaps.
Table 2:1 Literature Gaps Summary

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Key Finding</th>
<th>Research Gaps</th>
<th>Focus of the current study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courtney, Navarro, O’Hare (2007)</td>
<td>The Dynamic Organic Transformational (D.O.T.) team model for high-performance knowledge-worker teams</td>
<td>Using the D.O.T. model, knowledge workers can effectively respond to dynamic changes and enhance its team and organizational performance</td>
<td>D.O.T. model not applicable where more objective and quantifiable means can be used to measure teams that make items or perform tasks</td>
<td>This study sought to identify strategies used by virtual teams that perform online tasks</td>
</tr>
<tr>
<td>Gabriele Piccoli., Ann Powell., Blake Ives (2004)</td>
<td>Virtual Teams: Team control structure, work processes, and team effectiveness</td>
<td>Most satisfied team members were in teams with effective coordination and communication</td>
<td>Research work to generalize on organizational workers rather than students</td>
<td>This study focused on organizational virtual teams</td>
</tr>
<tr>
<td>Palitha Kuruppuarachchi, (2006)</td>
<td>Managing Virtual Project Teams: How to Maximize Performance</td>
<td>Organizations should have high level project management expertise and systems prior to establishing VPTs.</td>
<td>Identifying specific project management strategies that influence virtual project management teams</td>
<td>This study sought to identify the performance of specific project management strategies for virtual teams</td>
</tr>
<tr>
<td>Pedro Gustave Siqueira Ferreira, Edson Pinheiro de Lima and Sergio E. Gouvea da Costa (2012)</td>
<td>Developing a Methodology for Assessing Virtual Teams Performance Perception</td>
<td>Preliminary findings show that virtual teams could express their perception about companies’ goals and performance requirements and could improve their commitment to companies operations strategy by performance</td>
<td>Study on specific strategies that virtual teams use to improve their performance while meeting their companies operations strategy</td>
<td>This study sought to focus on project management strategies and their influence of virtual project teams performance</td>
</tr>
<tr>
<td>Authors</td>
<td>Title</td>
<td>Research Focus</td>
<td>Methodology</td>
<td>Findings</td>
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</tr>
<tr>
<td>Tiri, Ogolla, Mburu (2005)</td>
<td>Transformational Leadership Role on Performance of Virtual Teams</td>
<td>There is a positive relationship between influence of transformational leadership styles and virtual team performance in Safaricom Company Limited</td>
<td>Influence of managerial experience on the performance of the virtual project management team</td>
<td>This study sought to identify the influence of managerial experience on the performance of the virtual teams</td>
</tr>
<tr>
<td>Gabriele Piccoli, Ann Powell, Blake Ives (2004)</td>
<td>Virtual Teams: Team control structure, work processes, and team effectiveness</td>
<td>Self-directed teams report higher individual satisfaction with team and project control factors. There is no significant impact.</td>
<td>Research work on managerial experience impact on virtual team performance.</td>
<td>This study sought to identify how managerial experience affects the performance of virtual teams</td>
</tr>
<tr>
<td>Hosseira, Chileshe, Ghoddousi, Jahanshahloo, Katebi, Saeedi (2013)</td>
<td>Performance Evaluation for Global Virtual Teams (GVTS); Application of Data Envelopment</td>
<td>Performance measure is a crucial management task</td>
<td>Is managerial experience necessary</td>
<td>This study sought to identify the influence of managerial experience in the performance of virtual teams</td>
</tr>
<tr>
<td>Ross, Jones (2007)</td>
<td>Can Team Effectiveness be Predicted?</td>
<td>The study expands on the theory of team effectiveness and demonstrates that a theoretically developed empirical model can be predict team effectiveness quantitatively</td>
<td>Future research to determine what should be the standard variables to measure performance, behavior, attitude, team member style and corporate culture.</td>
<td>This study sought to identify whether managerial experience is one of the standard variables that influence performance</td>
</tr>
<tr>
<td>Mugwika, Mwangi, George (2016)</td>
<td>Telecommuting Model for Small and Medium Enterprises</td>
<td>Adoption and implementation of the proposed telecommuting</td>
<td>Addressing the issues of trust and campaigns to create</td>
<td>This study sought to find out how collaborative</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Study Focus</td>
<td>Findings/Research Needs</td>
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<tr>
<td>Siou Chew Kuek, Cecilia Paradi-Guilford, Toks Fayomi, Saori Imaizumi, Panos Ipeirotis, Patricia Pina, Manpreet Singh (2015)</td>
<td>The Global Opportunity in Online Outsourcing</td>
<td>In online outsourcing (OO) the primary beneficiaries are the population that has access to the internet and online payment system. Further research needed to identify whether OO is only applicable to those who are 'reachable' or whether it can be extended to the 'unreachable' population through training and extra support.</td>
<td>This study sought to find out how training of virtual team members on collaborative technology can influence virtual team performance.</td>
<td></td>
</tr>
<tr>
<td>Stephen M. Mutala (2002)</td>
<td>Internet Connectivity and Services in Kenya: Current Development</td>
<td>For internet uptake to be enhanced, there is need for infrastructure improvement to improve accessibility. Identify other opportunities online.</td>
<td>This study sought to identify how the use of virtual teams software technology influences the virtual teams performance.</td>
<td></td>
</tr>
<tr>
<td>Remco de Jong Rene Schalk, Petru L. Curseu (2008)</td>
<td>Virtual Communicating, Conflicts and Performance in Teams</td>
<td>Importance of acknowledging the different types of conflict and their impact on team performance especially perceived team performance. Study on the development of new media and new ways of communicating.</td>
<td>This study sought to identify how new media is influencing virtual team performance.</td>
<td></td>
</tr>
<tr>
<td>Siou Chew Kuek, Cecilia Paradi-Guilford,</td>
<td>The Global Opportunity in Online</td>
<td>Virtual work as potential for socioeconomic. What factors drive the decision for.</td>
<td>This study sought to identify the</td>
<td></td>
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<tr>
<td>Source: Researcher, 2017</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>ToksFayomi, SaoriImaizumi, Panos (2015)</th>
<th>Outsourcing development in developing countries</th>
<th>people to leave OO work</th>
<th>risks that virtual teams face and how it affects their performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oertig and Buergi (2006)</td>
<td>The Challenges of Managing Cross-Cultural Virtual Project Teams</td>
<td>The key themes reported to be of significance were the challenges of leadership, managing ritual aspects of communication and developing trust</td>
<td>The study focused on a specific organization in the West. A Kenyan perspective is missing.</td>
</tr>
<tr>
<td>Mwaniki (2014)</td>
<td>Virtual Workforce in the Kenya’s Higher Education and Research Service Sector</td>
<td>Virtual workforce in Kenyan higher education and research institutions enjoy support from their managers</td>
<td>Secondary data was not sampled</td>
</tr>
<tr>
<td>Jong, Schalk and Curseu, (2008)</td>
<td>Virtual Communicating, conflicts and performance in teams</td>
<td>Level of team virtuality influences the relationship between intra-team conflict and perceived team performance</td>
<td>Study on the development of new media and how it is influencing team performance</td>
</tr>
</tbody>
</table>
Conceptual Framework

Independent Variables

Project Management Practices
- Project Management strategies
  - Obedient servant
  - Independent innovator
  - Flexible mediator
  - Strong leader

Managerial Experience
- Managing goals
- Managing communication
- Keeping people motivated
- Assessing use of collaboration tools

Collaborative Technology
- Communications guidelines
- Software compatibility
- Appropriate technology
- Common suite of collaboration tools

Risk Management
- Team members opting to leave work
- Ill prepared team members
- Risk Strategy
- Legal issues

Dependent Variable

Performance of virtual project teams
- Project goals and objectives
- Team formation and productivity
- Communication
- Costs and Timely product/service delivery

Figure 2.1 The Conceptual Framework

Source: Researcher, 2017
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction
This chapter discusses the methods and procedures that were used to conduct this study. It deals with the research design, targeted population, the sampling design, data collection instruments, the procedure, analysis and data presentation.

3.2 The Research Design
The study had a descriptive research design. According to Sachdeva (2008) a descriptive design is 'concerned with finding out who, what, where, when or how much'. The descriptive research design was appropriate in providing a description of the characteristics of the individual objectives (Mugenda and Mugenda 2009). Data collected was evaluated and enabled the researcher to draw conclusions that generalized findings to a larger population. (Saunders et al. 2009)

3.3 Target Population
The researcher targeted Kenyan freelancers on Upwork that were available to work on virtual teams. According to Upwork, there were 574 Kenyan virtual freelancers that had signed up to access virtual work opportunities in 9 categories between June 2017 and December 2017. Of these 453 were independent freelancers while the other 47 freelancers belonged to an agency. Each has access to virtual team working opportunities. The researcher therefore targeted the Kenyan virtual freelancers and got a sample from those that had billed in at least 100 working hours on this online outsourcing platform.
3.4 Sampling Design
The researcher conducted simple random sampling. This enabled the researcher to give an equal selection opportunity to the target population that had actively engaged in online work through this platform and had managed to clock in at least 100 hours. According to Hill (1998), citing Roscoe (1975) the general rule of thumb is that the minimum size of a sample is 30 per cent. Based on this the researcher had a sample of 172 Kenyan virtual freelancers on the Upwork platform.

Table 3.1 Sample Size

<table>
<thead>
<tr>
<th>Freelancer Type</th>
<th>At least 100 hours billed in the last 6 months</th>
<th>Worked in the last 2 weeks</th>
<th>Sample Size 30 per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent</td>
<td>574</td>
<td>574</td>
<td>172</td>
</tr>
</tbody>
</table>

Source: Upwork.com, 2018

3.5 Data Collection Instruments
The researcher collected both primary and secondary data. Owing to the online nature of virtual teams’ work, data was collected through online questionnaires that had both structured and unstructured questions with close ended questions. According to Ochola and Ngige (2002) structured questions enable the use of checklists and ratings which are used to collect quantitative data. Qualitative data was obtained from the unstructured questions. Secondary data was collected from past archived interviews on virtual project management teams and their performance. The respondents were given sufficient time to respond and email their questionnaires.
3.6 Validity and Reliability

3.6.1 Validity of Research Instruments
The questionnaire was tested for validity using face and content validity. According to Taherdoost (2016) face validity determines ‘whether the questionnaire is relevant, readable, and consistent in style, language use and formatting’ while content validity determines ‘whether all aspects of the topic have been covered (Mugenda et al (2003).’ The researcher sent the questionnaire to freelancers who determined at face value that it was relevant. Formatting errors were identified and the researcher corrected them. The freelancers also determined that the content was well covered.

3.6.2 Reliability of Research Instruments
The researcher also conducted a pilot study. According to Hill (1998) a sample size of 10 – 30 respondents is sufficient. This is also supported by Isaac and Michael (1995). The researcher therefore emailed a questionnaire to 10 respondents who responded as shown in Table 3.2. To ensure the reliability of the questionnaire, the researcher did a Cronbach’s Alpha test on the collected data. According to Lavrakas (2008), a reliability test shows the researcher that the respondent would choose the same score on a Likert scale for a certain variable if it was administered again and again. Table 3.3 presents the Cronbach’s Alpha test on the collected data.
Table 3.2 Case Processing Summary

<table>
<thead>
<tr>
<th>Case Processing Summary</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>10</td>
<td>100.0</td>
</tr>
<tr>
<td>Excluded( ^a )</td>
<td>0</td>
<td>.0</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0</td>
</tr>
</tbody>
</table>

\( ^a \) Listwise deletion based on all variables in the procedure.

Source: Research Data, 2018

Table 3.3 The Reliability Statistics

<table>
<thead>
<tr>
<th>Reliability Statistics</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach's Alpha</td>
<td>.856</td>
</tr>
<tr>
<td>N of Items</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Research Data, 2018

According to Santos (1999), a research instrument is considered reliable if \( \alpha > or = 0.70 \). Findings from Table 3.3 reliability statistics show that Cronbach’s Alpha is 0.856 indicating that the questionnaire used for this study was reliable.

3.7 Data Collection Procedure

The researcher collected primary data by emailing respondents with a questionnaire. The researcher used email because the respondents have virtual offices and the nature of their work was online. Secondary data was collected from archived interviews of companies that use virtual teams, Upwork agency and freelancer statistics and the Upwork online report which collects data on the use of its platform by freelancers and employers. The researcher sought permission from authorized personnel on Upwork.
3.8 Data Analysis and Presentation
Data sampled was analyzed using descriptive and inferential statistics. This included frequencies, measures of central tendencies which show the mean, median or mode and measures of dispersion which involve standard deviation, range or variance. The researcher also used computer aided packages for qualitative data to help in analyzing the sampled data. The researcher also used tables and graphs in the presentation of the data. The researcher also did a preliminary diagnostics for regression modeling and the data was presented in tables and graphs.

3.8.1 Empirical Model
The researcher used the multiple regression analysis technique because it showed the relationship between one dependent variable, performance, and several independent variables, project management strategies, managerial experience, collaborative technology and risk management. According to Hair, Money, Page and Samouel (2007), this is a realistic model because ‘in the real-world predictions almost always depend upon multiple factors and not just one”. The model proposed for this research project was based on performance (Y) which is a function of project management strategies (PMS), Managerial Experience (ME), Collaborative Technology (CT), and Risk Management (RM).

\[
Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4
\]

Where:

Y = Performance

\( \beta_0 = \) Constant
This model helped in understanding the relationship between performance and the dependent variables. According to Lui et al. (2010) results are best presented in two steps to first show the effect on performance by changes in one of the project management practices and secondly how having a specific performance target can be used to make changes on the independent variables to attain that particular goal. Both showed the changes virtual team members needed to make on certain practices to be a high performing team that met its set targets. According to Mugenda and Mugenda (2009) ‘multiple regression yields a number of statistics. These would show whether the independent variables can be used to significantly predict the dependent variable and in doing so answer the research questions.”

3.9 Ethical Consideration
According to Saunders et al. (2009) the researcher had to ‘ensure that the way that the research is designed and data collected, analyzed and presented is done in a moral and responsible way’. The researcher therefore sought permission from the respondents and the relevant university authorities and will also maintained confidentiality. The researcher ensured that the work was not plagiarized by clearly indicating all the quoted sources.
CHAPTER FOUR
DATA PRESENTATION, DATA ANALYSIS AND DISCUSSION

4.1 Introduction

In this part, the researcher discusses the research project findings guided by the research questions. The chapter also deals with the presentation of data and their analysis. Analysis is both descriptive and inferential and was carried out using SPSS. Graphs are used to give a visual representation of the data.

4.2 Background Information
In this section, the researcher collected background data on the respondents’ profession, gender, and age, and freelance work type, length of time they have worked as virtual freelancers, their virtual project team size and project management work experience as well as the response rate. The data helped the researcher understand the type of people drawn to working online in virtual teams.

4.2.1 Response Rate
The researcher emailed a questionnaire to 172 respondents. There were a total of 90 responses. Table 4.1 presents the response rate in table form.

Table 4.1 Response Rate

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>90</td>
</tr>
<tr>
<td>Non-Response</td>
<td>82</td>
</tr>
<tr>
<td>Total</td>
<td>172</td>
</tr>
</tbody>
</table>

Source: Researcher, 2018
Findings in Table 4.1 indicate that the response rate was 52.32 per cent. According to Mugenda and Mugenda (2003), “50 per cent is adequate for analysis and reporting.” The response rate of 52.32 per cent therefore indicated that the study would not be invalidated.

4.2.2 Virtual Respondents Demographics
To understand the respondents, their professional demographics responses were computed into one table. Table 4.2 presents the respondents demographics.

<table>
<thead>
<tr>
<th>Profession</th>
<th>Included</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web designer</td>
<td>1</td>
<td>1.1%</td>
</tr>
<tr>
<td>Programme developer</td>
<td>5</td>
<td>5.5%</td>
</tr>
<tr>
<td>Administrative support</td>
<td>10</td>
<td>11.0%</td>
</tr>
<tr>
<td>Writer</td>
<td>40</td>
<td>44.0%</td>
</tr>
<tr>
<td>Translator transcriber</td>
<td>10</td>
<td>11.0%</td>
</tr>
<tr>
<td>Accountant</td>
<td>7</td>
<td>7.7%</td>
</tr>
<tr>
<td>Consultant</td>
<td>3</td>
<td>3.3%</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>8.8%</td>
</tr>
<tr>
<td>Missing</td>
<td>12</td>
<td>13.2%</td>
</tr>
</tbody>
</table>

*Source: Research Data, 2018*

Findings in Table 4.2 showed that the top preferences for Kenyans were writing, translating, and administrative support. This is in line with a report by Lehdonvirta (2017) who reported that Africa’s largest group of virtual workers was in the writing and translation categories.
Of the 90 responses received, 38.9 per cent were female while 50 per cent were male. This suggested that there were more men involved in online work, implying that there are more men than women with access to digital work information and possibly devices such as laptops and affordable WI-FI that are necessary tools for online work. This corresponds to the survey findings conducted by Payooner (2018) on freelancers from 170 countries, which included Kenya that showed that 23 per cent of freelancers were ladies while 77 per cent were men. Figure 4.1 presents the responses received from the respondents about their age groups in bar graph form.

![Figure 4.1 Age Groups](image)

**Figure 4.1 Age Groups**

*Source: Research Data, 2018*

Research findings presented in Figure 4.1 showed that age group 26-31 had the highest number of freelancers. This is probably because they are millennials: the first generation to grow up surrounded by digital technology. This implied that millennials are comfortable with freelance virtual work. This corresponds with findings by
Constantin, Jonut (2008) who reported that ‘virtual reality was not virtual for anyone born after 1985.’

Of the responses received, 32 per cent of the respondents indicated that they were part-time freelancers while 37 per cent were full time freelancers. This implied that there are more people in Kenya who are now seeking self employment opportunities online instead of looking for white collar jobs. This is probably because the government has started the Ajira platform that encourages more people to adopt online work as a way to be in gainful employment.

Figure 4.2 presents the responses received from the respondents about their virtual project team sizes in bar graph form.

![Bar Graph](image)

**Figure 4.2 Virtual Team Members**

*Source: Research Data, 2018*
Research findings presented in Figure 4.2 showed that most of the respondents were in virtual teams made up of 1-10 members. This is probably because smaller teams are easier and cheaper to manage. This corresponds to findings by Ferrazzi (2014) who reported that getting ‘virtual teams right was not easy.’

Figure 4.3 presents the respondents project management experience in bar graph form.

![Graph showing project management experience](image)

**Figure 4.3 Project Management Experience**

*Source: Research Data, 2018*

Research finding presented in Fig. 4.3 showed that 23.3 per cent of the respondents indicated that they have project management experience while 61.1 per cent did not. This is probably because previously it was not considered a necessary skill. This corresponds to the findings by Jarvenpaa *et. al.* (1998) who reported that many managers were hesitant in managing virtual project teams because they did not have the necessary skills to do so.
4.2.3 Project Management Strategies and Performance

The study’s objective number one was to establish the effect project management strategies had on the performance of virtual project teams in Kenya. Using a scale from 1 to 5, where 1 was ‘Strongly Disagreed’ 2: Disagreed 3: Balanced 4: Agreed and 5: ‘Strongly Agreed’ ; respondents were expected to give their opinions on questions on teams being allowed to be innovative; meeting organizational objectives; number of stakeholders and concern about the long-term effects of a project on users and the community in general. Table 4.3 presents the mean and standard deviation of the Likert items for question.

Table 4.3 Project Management Strategies: Descriptive Statistics

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The team is allowed to be innovative</td>
<td>4.16</td>
<td>1.059</td>
</tr>
<tr>
<td>The team’s work meets the contracting organizations objectives</td>
<td>4.60</td>
<td>.804</td>
</tr>
<tr>
<td>There are more than one stakeholder involved in the project</td>
<td>4.50</td>
<td>.903</td>
</tr>
<tr>
<td>The team works better with the stakeholder that is interested in meeting the projects objectives</td>
<td>4.09</td>
<td>.612</td>
</tr>
<tr>
<td>The team is concerned about the long term effects the project will have on the users and community in general</td>
<td>4.98</td>
<td>1.236</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td>4.46</td>
<td></td>
</tr>
</tbody>
</table>

*Source: The Research Data, 2018*
The research findings presented in the above table indicated that the average mean for the Likert items was 4.46 implying that most of the respondents strongly agreed on most of the Likert items. This corresponds to findings by Pullan and Prokopi (2016) who reported that the implementation of certain strategies and practices were necessary for virtual team success. The highest mean was 4.98 which showed that the respondents strongly agreed that they were concerned about the long term effects a project would have on users and the community in general. This corresponds with the findings by Artto et al. (2007) who reported that the project team with a strong leader strategy based its success on how a “project impacted the society and environment as a whole.”

4.2.4 Managerial Experience and Performance of Virtual Project Teams in Kenya
The study’s objective number two sought to determine the effects managerial experience had on the performance of virtual project teams in Kenya. Using a scale from 1 to 5, where 1 was ‘Strongly Disagreed 2: Disagreed 3: Balanced 4: Agreed and 5: ‘Strongly Agreed’ respondents were expected to give their opinions on questions on project completion time, communication, training, online tracking tools and team motivation. Table 4.4 presents the mean and standard deviation of the Likert items for each question.
Table 4.4 Managerial Experience: Descriptive Statistics

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The team is able to complete the project on time</td>
<td>4.57</td>
<td>.80</td>
</tr>
<tr>
<td>The team is in constant communication with the project manager</td>
<td>4.77</td>
<td>.61</td>
</tr>
<tr>
<td>The team undergoes regular training sessions, both online and off line</td>
<td>3.28</td>
<td>1.20</td>
</tr>
<tr>
<td>The team uses online tools to track their work, get updates and any other important information regarding the project at hand.</td>
<td>4.66</td>
<td>.85</td>
</tr>
<tr>
<td>Your tracking and communication system functions as it should</td>
<td>4.68</td>
<td>.84</td>
</tr>
<tr>
<td>The team is motivated</td>
<td>4.49</td>
<td>.78</td>
</tr>
<tr>
<td><strong>Average Mean</strong></td>
<td>4.40</td>
<td></td>
</tr>
</tbody>
</table>

Source: The *Research Data, 2018*

The research findings presented in the above table showed that the average mean was 4.40 implying that most of the respondents agreed on the Likert items. This corresponded with the research findings of the study by Vogel *et. al.* (2000) that showed virtual teams stood to benefit from having individuals who know how to manage them. The team that was in constant communication with the virtual project team manager had the highest mean of 4.77 followed by having a tracking and communication system that functions as it should at 4.68. This is in agreement with the results of the study by Hamilton *et. al.* (2016) that identified the two as part of the tasks virtual project managers oversee. The respondents were partially in agreement when it came to having training sessions both online and offline. This corresponded to
findings by Hoefling (2012) who reported that virtual team managers should never assume that all team members know how to use the collaborative tools implying that there were some managers who did not train their team members.

4.2.5 Collaborative Technology
Objective three of the study sought to assess the effects collaborative technology had on the performance of virtual project teams in Kenya. Using a scale from 1 to 5, where 1 was ‘Strongly Disagreed 2: Disagreed 3: Balanced 4: Agreed and 5: ‘Strongly Agreed’; respondents were expected to give their opinions on questions on the use of common guidelines, device compatibility, and training of new team members and use of similar software. Table 4.5 presents the mean and standard deviation of the Likert items for each question.

Table 4.5 Collaborative Technologies : Descriptive Mean Statistics

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The team is guided by a common set of guidelines.</td>
<td>4.17</td>
<td>.944</td>
</tr>
<tr>
<td>All team member computers, laptops, tablets, smart phones they use for working are tested for compatibility with the organizations system</td>
<td>3.33</td>
<td>1.492</td>
</tr>
<tr>
<td>New team members are trained on software that the team uses</td>
<td>3.19</td>
<td>1.32</td>
</tr>
<tr>
<td>Team members use the same software and system for communicating and submitting their work</td>
<td>4.67</td>
<td>.88</td>
</tr>
<tr>
<td>Average Mean</td>
<td>3.84</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research Data, 2018

The research findings presented in the above table showed that the average mean for the Likert items was 3.84 implying that the agreed on most of the Likert items. This corresponded to a study done by Gratton et al (2007) who reported that effective collaborative tools were key for successful virtual team performance. The question on
team members using the same software and system to communicate and submit work had the highest mean of 4.67. This is in agreement with the results of a study conducted by Rad et al (2003) that reported that virtual teams should use a common suite of tools. The lowest mean was 3.19 which showed that respondents had balanced view on this item implying that some of them agreed that new members were trained on the software the team used while the others disagreed. This corresponds to a study by Hoefling (2012) who reported that virtual team managers should not assume that all team members knew how to use the organizations collaboration tools.

**4.2.6 Risk Management and Performance of Virtual Project Teams in Kenya**

Objective four of the study sought to establish the influence of risk management on the performance of virtual project teams in Kenya. Using a scale from 1 to 5, where 1 was ‘Strongly Disagreed 2: Disagreed 3: Balanced 4: Agreed and 5: ‘Strongly Agreed’; respondents were expected to give their opinions on questions on team performance when a team member suddenly leaves; when a new member joins the team; the strategy for identifying threatening situations and if contracting organizations meet labour and personnel requirements. Table 4.6 presents the mean and standard deviation of the Likert items for each question.
Table 4.6 Risk Management : Descriptive Mean Statistics

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The team performance is affected when a team member leaves suddenly before the end of the project?</td>
<td>3.61</td>
<td>1.51</td>
</tr>
<tr>
<td>The team performance is affected by entry of new members into the team</td>
<td>3.28</td>
<td>1.27</td>
</tr>
<tr>
<td>There is a strategy for identifying situations that may hinder the completion of the project</td>
<td>4.21</td>
<td>1.32</td>
</tr>
<tr>
<td>The contracting organization/ employer meet labor and personnel legal requirements in your residing country before hiring you.</td>
<td>3.92</td>
<td>.60</td>
</tr>
<tr>
<td>Average Mean</td>
<td>3.75</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research Data, 2018

Research findings presented in Table 4.6 showed that the average mean for the Likert items was 3.75 implying that most of the respondents agreed on the Likert items. This corresponded with study results reported by Grabowski and Roberts (1999) and Rad et al (2003) who reported that a risk management plan was important and that it should involve all team members in the implementation process. The highest mean was 4.21 where respondents agreed that there was a strategy in their virtual project teams for identifying situations that may hinder the completion of the project. This agrees with the study done by Harpham (2015) who reported that virtual team members should be part of the risk management process.

The respondents were also asked whether their contracting organization/ employer meet labour and personnel legal requirements in their residing county before hiring them. This question had the second highest mean of 3.92 showing that they thought it
was balanced but leaned more towards agreeing with the statement. This is probably because the Kenyan government has recommended Upwork Global Incorporated has one of the sites that freelancers can look for online work. This corresponds to a study done by Plump and Ketchen (2013) who concluded that government and organizational involvement was necessary as a way of protecting the virtual workers legal personnel rights and positively influencing their performance.

4.3 Inferential Statistics
4.3.1 Pearson’s r test on Project Management Strategies

To determine whether the sampled data can be generalized, correlational tests were done. The Pearson Product - Moment correlation technique was selected. According to Mugenda and Mugenda (2003) this technique is used when independent and dependant variables are continuous and measured at ratio or interval scales. Both variables that the researcher studied met this requirement. To determine the degree of association between the project management strategy variables, a Pearson’s r test was done. Table 4.7 presents the correlation results for each of the project management variables.
**Table 4.7 Correlation Results on Project Management Strategies**

<table>
<thead>
<tr>
<th></th>
<th>Innovativeness</th>
<th>Objective</th>
<th>Stakeholder</th>
<th>Interested stakeholder</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovativeness Pearson correlation</td>
<td>1</td>
<td>.338**</td>
<td>-.024</td>
<td>.082</td>
<td>.355**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.001</td>
<td>.826</td>
<td>.440</td>
<td>.001</td>
</tr>
<tr>
<td>N</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Objectives Pearson correlation</td>
<td>.338**</td>
<td>1</td>
<td>.155</td>
<td>.096</td>
<td>.183</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td></td>
<td>.145</td>
<td>.368</td>
<td>.084</td>
</tr>
<tr>
<td>N</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Stakeholder Pearson correlation</td>
<td>-.024</td>
<td>.155</td>
<td>1</td>
<td>.102</td>
<td>.071</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.826</td>
<td></td>
<td>.340</td>
<td>.509</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Interested stakeholder Pearson correlation</td>
<td>.082</td>
<td>.096</td>
<td>.102</td>
<td>1</td>
<td>-.012</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.440</td>
<td></td>
<td>.340</td>
<td>.909</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Effects Pearson correlation</td>
<td>.355**</td>
<td>.183</td>
<td>.071</td>
<td>-.012</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.084</td>
<td>.509</td>
<td>.909</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

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

Source: *Research Data, 2018*

Research findings presented in Table 4.7 of the Pearson correlation coefficient on project management strategies computation showed that there was no significant association between any of the independent variables at 0.05 level since \( p > 0.05 \). The
independent variables effects and objectives had the closest p < 0.05 at .084 implying that there was no significant relationship between the two and were therefore independent. These results do not agree with the studies done by Katzenbach and Smith (1993) and Artto et. al (2007). Katzenbach and Smith (1993) reported that the independent team was interested in meeting the project objectives. In their study Artto et. al (2007) reported that the independent team was concerned about the long term effects of the project on users and the community in general. Both objectives and effects were related and not independent. This is probably because most people venturing onto virtual work do so to have an income from a platform that enables them to have a work-life balance. They will meet the project’s goals so that they may be paid but not necessarily because they are concerned about the effects their work will have on the community. This agrees with a study by Manyika, Lund, Bughin, Robinson, Mischke and Mahajan (2016) that those who by choice chose to work virtually, have income and expanding opportunities as their priorities.

4.3.2 Pearson’s r test on Managerial Experience
To determine the degree of association between the managerial experience variables, a Pearson’s r test was done. Table 4.8 presents the correlation results for each of the managerial experience variables.
Table 4.8 Correlation Results on Managerial Experience

<table>
<thead>
<tr>
<th></th>
<th>Time</th>
<th>Constant communication</th>
<th>Training</th>
<th>Online tools</th>
<th>Tracker</th>
<th>Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.627**</td>
<td>.021</td>
<td>.369**</td>
<td>.336**</td>
<td>.197</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td><strong>Constant communication</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.627**</td>
<td>1</td>
<td>.058</td>
<td>.337**</td>
<td>.306**</td>
<td>.099</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>.000</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.021</td>
<td>.058</td>
<td>1</td>
<td>.018</td>
<td>.111</td>
<td>.225*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.842</td>
<td>.587</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>N</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td><strong>Online tools</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.369**</td>
<td>.337**</td>
<td>.018</td>
<td>1</td>
<td>.719**</td>
<td>.188</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>.000</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td><strong>Tracker</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.336**</td>
<td>.306**</td>
<td>.111</td>
<td>.719**</td>
<td>1</td>
<td>.377**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>.001</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td><strong>Motivation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.197</td>
<td>.099</td>
<td>.225*</td>
<td>.188</td>
<td>.377**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>.063</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Source: *Research Data. 2018*
Research findings presented in Table 4.8 of the Pearson’s r correlations test on managerial experience showed that at the 0.05 level, training had a very weak correlation with motivation (r = 0.225, p < 0.05). This implied that motivating a virtual team was independent of them having regular training sessions. These results agreed with a study conducted by Hamilton *et al.* (2016) who identified motivating the team as one of the five aspects virtual team managers should concentrate on.

### 4.3.3 Pearson’s r test on Collaborative Technology

To determine the degree of association between the collaborative technology variables, a Pearson’s r test was done. Table 4.9 presents the correlation results for each of the collaborative technology variables.

<table>
<thead>
<tr>
<th>Table 4.9 Correlation Results on Collaborative Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Guidelines</strong></td>
</tr>
<tr>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Correlation N 89</td>
</tr>
<tr>
<td>Guidelines 89</td>
</tr>
<tr>
<td><strong>Compatibility</strong></td>
</tr>
<tr>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Correlation N 89</td>
</tr>
<tr>
<td>Guidelines 89</td>
</tr>
<tr>
<td><strong>Software training</strong></td>
</tr>
<tr>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Correlation N 89</td>
</tr>
<tr>
<td>Guidelines 89</td>
</tr>
<tr>
<td><strong>Same software</strong></td>
</tr>
<tr>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Correlation N 89</td>
</tr>
<tr>
<td>Guidelines 89</td>
</tr>
</tbody>
</table>

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

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

Source: *Research Data, 2018*
Research findings presented in Table 4.9 of the Pearson correlation test on collaborative technology showed that there was a significant relationship between a virtual team being guided by a set of common guidelines and them using the same software and system to communicate and submit their work ($r = 0.250$, $p < 0.05$). This implied that virtual teams should have the same guidelines on the software they use to communicate and submit work. These results are in agreement with the study results of Edwards et al. (2003) who reported that virtual team members should use a set of common guidelines that all team members discussed and agreed on.

4.3.4 Pearson’s r test on Risk Management
To determine the degree of association between the risk management variables, a Pearson’s r test was done. Table 4.10 presents the correlation results for each of the risk management variables.’
Table 4.10 Correlation Results on Risk Management

<table>
<thead>
<tr>
<th></th>
<th>Absence</th>
<th>Newbie</th>
<th>Strategy ID</th>
<th>Labour laws</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absence</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.423**</td>
<td>.425**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.707</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Newbie</td>
<td>Pearson Correlation</td>
<td>.423**</td>
<td>1</td>
<td>.218*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.039</td>
<td>.897</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Strategy ID</td>
<td>Pearson Correlation</td>
<td>.425**</td>
<td>.218*</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.039</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Labour laws</td>
<td>Pearson Correlation</td>
<td>.040</td>
<td>.014</td>
<td>.315**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.707</td>
<td>.897</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

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

Source: Research Data, 2018

Table 4.10 of the Pearson’s r test on risk management showed that at the 0.05 level there was a weak relationship between the teams performance being affected by entry of new team members and there being a strategy to identify situations that may hinder the completion of the project on time ($r = 0.218; p<0.05$) . This implied that both were independent of each other. The results correspond to a study done by Rad et al (2003) who reported that the risk strategy process was best handled by involving all team members, both new and old and not just new members only.
4.3.5 Regression Analysis: Model Summary
To confirm the Pearson correlation results, a regression test was computed. According to Mugenda and Mugenda (2003) multiple regression is done to determine if ‘a group of independent variables together predict a given dependant variable’. The first stage of the regression analysis was to “account for the total variation in the dependant variable” (ESS EduNet, 2013). A model summary of all the independent variables was therefore computed as presented in Table 4.12.

Table 4.11 Model Summary for Project Management Practices

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sig. F Change</td>
</tr>
<tr>
<td>1</td>
<td>.927\textsuperscript{a}</td>
<td>.860</td>
<td>.854</td>
<td>.27918</td>
<td>.860</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Risk management, Managerial experience, Project management strategies, Collaborative technologies

Source: Research Data, 2018

The research findings presented in Table 4.11 of the regression model summary analysis for the project management practices predicted that 85.4 per cent of the independent variables explain the virtual teams’ performance ($R =0.85$) and 25 per cent by other factors not filtered into the study. These results correspond to a study done by Dube et al (2016) that identified 8 performance criteria factors for virtual project teams.
4.3.6 Regression Analysis: ANOVA

To determine how well the model can be used to predict the dependant variable, and not just rely on the means, an analysis of the variance was done (Laerd Statistics, 2013). Table 4.12 presents the regression analysis results.

The regression model is: \( Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \ldots + e \)

where:

\( Y \) = Performance

\( \beta_0 \) = Constant

\( X_1 \) = Project Management Strategies

\( X_2 \) = Managerial Experience

\( X_3 \) = Collaborative Technology

\( X_4 \) = Risk Management

\( e \) = Error term

Table 4.12 ANOVA\(^a\)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>40.764</td>
<td>4</td>
<td>10.191</td>
<td>130.756</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>6.625</td>
<td>85</td>
<td>.078</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47.389</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Dependant Variable: Performance

\(^b\) Predictors: (Constant), Risk management, Managerial experience, Project management strategies, Collaborative technologies

Source: The *Research Data, 2018*

Research findings presented in the above showed that the value of the F- ratio as 130.76 with a p value of less than 0.05. This implied that the results were not by
chance and that the model was therefore statistically significant and could be used to predict the dependant variable.

4.3.7 Regression Analysis: Coefficient Table
To find out if the independent variables could be used to predict the dependant variable, a coefficient test was done. Table 4.13 presents the coefficient analysis results.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
<th>95.0% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>(Constant)</td>
<td>.188</td>
<td>.170</td>
<td></td>
<td>1.105</td>
<td>.272</td>
</tr>
<tr>
<td>Project management strategies</td>
<td>.243</td>
<td>.037</td>
<td>.312</td>
<td>6.504</td>
<td>.000</td>
</tr>
<tr>
<td>Managerial experience</td>
<td>.260</td>
<td>.037</td>
<td>.344</td>
<td>6.943</td>
<td>.000</td>
</tr>
<tr>
<td>Collaborative technologies</td>
<td>.224</td>
<td>.041</td>
<td>.322</td>
<td>5.449</td>
<td>.000</td>
</tr>
<tr>
<td>Risk management</td>
<td>.246</td>
<td>.043</td>
<td>.303</td>
<td>5.781</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Dependant Variable: Performance

Source: Research Data, 2018

Research findings presented in the above table showed that all p values in the significance column were less than 0.05 indicating that the β coefficients were statistically significant. This implied that the model could be used to predict the dependant variable, that is, performance. Managerial Experience had the highest β coefficient implying that changes to this variable would either have a positive or
negative impact on the performance of the virtual project team. Collaborative technology had the lowest $\beta$ coefficient implying that it did not have a big effect on the performance of a virtual project team. Both of these coefficient results correspond to a study done by Nader et.al (2009) who reported that the successful virtual project team focused more on people and processes rather than technology.
CHAPTER FIVE

THE SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction
This chapter is a summary of the study findings. It also deals with its conclusions and recommendations. The researcher also suggests areas for further research.

5.2 Summary
According to Upwork Global Incorporated (2018) one of their major concerns is freelancers who do not meet client expectations. These freelancers end up having low job success rates because of poor work performance. Of the 1494 Kenyan virtual freelancers who worked 1 – 100 hours between November 2017 and April 2018, only 39 per cent had a high job success rates. Project management practices have been recommended as a way to improve virtual work performance for individuals and virtual teams. The objective of this study was to investigate the effect of project management practices on the performance of virtual project management teams in Kenya. This would be accomplished by seeking answers to the research questions. The study was descriptive, with a sample size of 172. The questionnaire was designed and emailed to them. Archived online interviews of Kenyan virtual workers on Upwork from sites such as Ajira and Techmoneymama plus the profile data of Kenyans on Upwork were used as secondary sources (see Annex I). The data collected was analysed using descriptive and inferential statistics.
The descriptive analysis on project management strategies implied that most of the respondents strongly agreed that project management strategies have an effect on the performance of virtual project teams in Kenya. Descriptive analysis on managerial experience implied that most of the respondents agreed that managerial experience has an effect on the performance of virtual project teams in Kenya. Descriptive analysis on collaborative technology showed that the respondents were not divided in this matter and were inclined to agree that collaborative technology had an effect on the performance of virtual project teams in Kenya. The descriptive analysis on risk management implied that most respondents agreed that risk management had an effect on the performance of virtual teams in Kenya.

The Pearson Product-Moment correlation technique was selected for inferential analysis. The results showed that the independent variables of project management strategies, managerial experience, collaborative technology and risk management and other factors not filtered into the study could predict the performance of virtual project teams. The results also determined that the sampled data could be generalized. The regression analysis also positively confirmed correlation results. A summary of the findings for each question is covered below.

The first objective was to establish the effect of management strategies on the performance of virtual project teams in Kenya. It was determined that at the 0.05 level, the project management strategies were independent. This implied that any of the four strategies could have an effect on the virtual team performance. These results are consistent with the findings of Artto et al (2007) who reported four types of
strategies in use by various organizations, each with various levels of performance successes. The results are inconsistent with a study done by Gratton and Erickson (2007) that singled out the obedient servant strategy as the one that had high performing teams.

The second objective of this study was to determine the effect of managerial experience on the performance of virtual project management teams in Kenya. It was observed that there was a weak relationship between the team having regular training sessions, both online and offline and their being motivated. This implied that both were independent of each other. These results were consistent with the study done by Hamilton et.al (2016) that identified team motivation as one of the five key areas that managers ought to concentrate on to have a virtual project team that performed well.

The third objective of this study was to assess the effect of collaborative technology on the performance of virtual project management teams in Kenya. The research analysis showed that there was a significant relationship between having common guidelines, and the virtual team using the same software to communicate and submit their work. This suggested that the virtual team should use the same collaborative software and have a common team guideline for high performance. This result was consistent with findings reported by Edwards et. al. (2003) that ‘common guidelines would do away with a breakdown in communication and enhance team performance.’

The fourth objective of this study was to establish the effect of risk management on the performance of virtual project management teams in Kenya. It was determined
that there was a significant but weak relationship between the entry of new team members and there being a strategy to identify situations that may hinder the completion of the project on time. This implied that the two were independent of each other. These results agree with the research results of Rad and Levin (2003) who reported that the best way to deal with project risk caused by ill prepared new team members was to have a strategy that allowed all and not just old virtual team members to participate in risk identification and its management.

5.3 Conclusion
The first objective of this study established that management strategies had an effect on the performance of virtual project teams in Kenya. It was concluded that all four project management strategies were significant and that a virtual project manager could choose any of the four depending on their organizational need.

The second objective of this study determined that managerial experience had an effect on the performance of virtual project teams in Kenya. It was concluded that the main independent variable that had an effect on the dependent variable was keeping people motivated.

The third objective of this study assessed that collaborative technology had an effect on the performance of virtual project teams in Kenya. It was concluded that communication guidelines, appropriate technology and a common suite of collaboration tools were the independent variables that had an effect on the dependent variable.
The fourth objective of this study established the influence of risk management on the performance of virtual project teams in Kenya. It was concluded that ill prepared team members and risk strategy were the main independent variables that had an effect on the dependent variable.

5.4 Recommendations
High performing virtual teams are able to meet project goals and objectives. They are also strong on communication and deliver services within the set costs and time. Based on the conclusion of the first objective, the researcher recommends that organizations and employers with virtual teams identify the project management strategy that best suits their organizational need and then build a virtual team based on that. This will enable them have a high performing team.

The conclusion arrived at on the second objective, led the researcher to recommend virtual team management training for managers who deal with virtual project teams. Virtual team managers need a different set of skills to manage a high performing team that is not only invisible but also located in different parts of the world.

According to the conclusion arrived at on the third objective, the researcher recommends training on remote collaboration systems for organizations with virtual teams and individuals seeking to be part of a virtual team. Training will enable the business entities to identify and select the best remote collaboration software system that best works for them and their virtual teams. Self-employed virtual workers will learn how to use the different collaboration systems enabling them to adapt easily to
what their clients use. The researcher also recommends that organizations have a set of rules and guidelines on what’s expected from their virtual teams.

Based on the conclusion of the fourth objective, the researcher recommends that organizations have a risk assessment and management plan for their virtual teams. The virtual team managers should also undergo risk assessment and management training. They also need to involve the team members in implementing the plan because they are able to identify members who may be in a crisis and need help so that they do not abandon their work before the successful completion of a project. Independent virtual workers also need a similar training to help them identify and manage situations that will affect their performance.

5.4.1 Suggestions for Further Research
This study focused on virtual freelancers using the Upwork platform. More research should be done featuring other major online platforms that Kenyans use to find online work. This study revealed that certain project management practices determined virtual team performance in Kenya. More research therefore needs to be done to identify more significant practices. This study also revealed that virtual team members are concerned about the long-term effects of their online projects. Research should therefore be conducted on the role of ethics when it comes to selecting online jobs.
APPENDIX I

LETTER OF INTRODUCTION

KENYATTA UNIVERSITY
GRADUATE SCHOOL

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

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 37330

Our Ref: DG3/OL/CTY/26397/2015

DATE: 30th July, 2018

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

Dear Sir/Madam,


I write to introduce Mumbua Ng‘etich Lydia who is a Postgraduate Student of this University. The student is registered for M.B.A degree programme in the Department of Management Science.

Mumbua intends to conduct research for a M.B.A Project Proposal entitled, “Project Management Practices and Performance of Virtual Project Teams in a Case of Upwork Kenya”.

Any assistance given will be highly appreciated.

Yours faithfully,

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

QUESTIONNAIRE

SECTION A: BACKGROUND INFORMATION

The questions below are designed to help the researcher understand the virtual team member profile.

1. Your Profession: Web Designer ( ) Programmer and Developer ( ) Administrative Support Specialist ( ) Writer ( ) Translator ( ) Accountant ( ) Consultant ( ) Sales & Marketing ( ) Other ( )

2. Your gender: Female ( ) Male ( )

3. Your Age: Tick appropriate: 18-25 ( ) 26-31 ( ) 32-39 ( ) 40+ ( )

4. Your work type: Part time freelancer ( ) Full time freelancer ( )

5. How long have you worked as a virtual freelancer? 0-3 years ( ) 4-7 years ( ) 7+ years ( )

6. Virtual Team Size 1-10 ( ) 11-20 ( ) 21-30 ( ) 31+ ( )

7. Do you have project management work experience? Yes ( ) No ( )
SECTION B: PROJECT MANAGEMENT STRATEGIES

The following are statements on project management strategies and how they determine the virtual team performance. Using a scale from 1 to 5, where 1 is ‘Strongly Disagreed’ 2: Disagreed 3: Balanced 4. Agreed and 5 is Strongly Agreed’ indicate to what extent you agree or disagree that when you are working in a virtual project team

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>The team is allowed to be innovative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>The team’s work meets the contracting organizations objectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>There are more than one stakeholder involved in the project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>The team works better with the stakeholder that is interested in meeting the projects objectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>The team is concerned about the long term effects the project will have on the users and community in general</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION C: MANAGERIAL EXPERIENCE

The following are statements on managerial experience and how it determines the virtual team performance. Using a scale from 1 to 5, where 1 is ‘Strongly Disagreed
2: Disagreed 3: Balanced 4. Agreed and 5 is Strongly Agreed’ indicate to what extent you agree or disagree that when you are working in a virtual project team

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>The team is able to complete the project on time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>The team is in constant communication with the project manager</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>The team undergoes regular training sessions, both online and off line.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>The team uses online tools to track their work, get updates and any other important information regarding the project at hand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Your tracking and communication system functions as it should.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>The team is motivated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION D: COLLABORATIVE TECHNOLOGY

The following are statements on collaborative technology and how it determines the virtual team performance. Using a scale from 1 to 5, where 1 is ‘Strongly Disagreed 2: Disagreed 3: Balanced 4. Agreed and 5 is Strongly Agreed’ indicate to what extent you agree or disagree that when you are working in a virtual project team
A The team is guided by a common set of guidelines.

B All team member computers, laptops, tablets, smart phones they use for working are tested for compatibility with the organizations system

C New team members are trained on software that the team uses

D Team members use the same software and system for communicating and submitting their work

SECTION E: RISK MANAGEMENT

The following are statements on risk management and how it influences the virtual team performance. Using a scale from 1 to 5, where 1 is ‘Strongly Disagreed’ 2: Disagreed 3: Balanced 4: Agreed and 5 is ‘Strongly Agreed’ indicate to what extent you agree or disagree that when you are working in a virtual project team

A The team performance is affected when a team member leaves suddenly before the end of the project?

B The team performance is affected by entry of new members into the team.

C There is a strategy for identifying situations that may hinder the completion of the project.

D The contracting organization/ employer meet labor and personnel legal requirements in your residing country before hiring you.
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ANNEX I :
UPWORK- KENYAN PROFILES
https://www.upwork.com/o/profiles/browse/hrs/100/?q=kenya&pt=independent&rhrs=
yes&english=3&last=15
10 Kenyan Upwork Profiles

https://www.upwork.com/o/profiles/browse/hrs/100/?q=kenya&pt=independent&rhrs=
yes&english=3&last=15&page=2
10 Kenyan Upwork Profiles

https://www.upwork.com/o/profiles/browse/hrs/100/?q=kenya&pt=independent&rhrs=
yes&english=3&last=15&page=3
7 Kenyan Upwork Profiles

https://www.upwork.com/o/profiles/browse/hrs/100/?q=kenya&pt=independent&rhrs=
yes&english=3&last=15&page=4
10 Kenyan Upwork Profiles

https://www.upwork.com/o/profiles/browse/hrs/100/?q=kenya&pt=independent&rhrs=
yes&english=3&last=15&page=5
10 Kenyan Upwork Profiles

https://www.upwork.com/o/profiles/browse/hrs/100/?q=kenya&pt=independent&rhrs=
yes&english=3&last=15&page=6
9 Kenyan Upwork Profiles

https://www.upwork.com/o/profiles/browse/hrs/100/?q=kenya&pt=independent&rhrs=
yes&english=3&last=15&page=7
10 Kenyan Upwork Profiles
http://www.ajirakenya.co.ke/category/freelancer-testimonials-stories/
Select interviews of Kenyans on Upwork

https://techmoneymama.com/work-online-success-stories/
Select interviews of Kenyans on Upwork