Organizational factors that influence the success of IT projects

العوامل التنظيمية التي تؤثر في نجاح مشاريع تقنية المعلومات

by

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Abstract

The present document presents a comprehensive outlook of the influence of organizational factors on IT projects and their success. This research aimed at exploring the extent to which certain organizational factors, including organizational culture and management style, organizational structure, organizational communication, organizational process assets and enterprise environment factors, can influence the successful implementation and completion of IT projects. The paper is focused on how the variables used per organizational factor is correlated with real-life scenarios and experiences of different project management teams that have been through project success and project failures.

The rationale behind selecting this research area as a point of focus is that IT projects are widely being implemented across organizations, and that implementing new Information Technologies is mandatory for organizations of today in order to gain competitive advantage and sustainability. Comprehensive literature review was conducted, involving multiple secondary sources, such as peer-reviewed journals, academic sources, organizational websites and periodicals. Primary data were collected and subjected to descriptive analysis, ANOVA and linear regression analysis. Hypotheses testing revealed an insignificant relationship between organizational culture and management styles, enterprise environmental factors and the success of IT projects. On the other hand, the research study revealed that organizational process assets, quality of organizational communication, organizational structure can serve as effective predictors for success of IT projects. Overall, the study could measure project success of IT projects through organizational factors. The reliable differences of sample data have determined that the organizational factors have a significant relationship in measuring project success.

ملخص

يقدم هذا البحث نظرة شاملة عن أثر العوامل التنظيمية في مشاريع تقنية المعلومات ومدى نجاحها. وقد سعت الدراسة للكشف إلى أي مدى تؤثر بعض العوامل التنظيمية بما في ذلك الثقافة المؤسسية وأسلوب الإدارة والتنظيم المؤسسي، وأساليب الإتصال المؤسسي وعوامل العمليات للموجودات وبيئة العمل المؤسسي على نجاح التنفيذ وإنجاز المشاريع في المعلوماتية. ركزت الدراسة على العلاقة بين العوامل المتغيرة لكل من هذه العوامل المؤسساتية المستخدمة في سيناريوهات العمل اليومية الحقيقية والتجارب المستفادة من قبل فرق العمل المختلفة في مشاريع تقنيات المعلومات سواءا الناجحة منها أم التي لم يحالفها الحظ بالنجاح.

الدافع الذي تم بموجبه إختيار هذا الموضوع البحثي كنقطة تركيز هو أنه هناك الكثير من مشاريع تقنية المعلومات الجاري تنفيذها في الكثير من المؤسسات اليوم، كما أن القيام بتبني مشاريع المعلوماتية أصبح ضرورة ملحة ومن الأمور الحتمية للمنافسة والإستدامة. بالنسبة للشركات . لقد تم إجراء مراجعة شاملة للأدبيات ذات العلاقة، بما في ذلك مصادر ثانوية متعددة، كدوريات مراجعة من قبل الأقران، مصادر أكاديمية، ومواقع على الشبكة العنكبوتية عائدة لمؤسسات بالإضافة لدوريات نشر.وتم إخضاع كل المعلومات الأساسية للتمحيص والتحليل التوصيفي، طريقة تحليل (أنوفا) والتحليل الخطي العكسي (Linear regression analysis). وقد بين الفحص الإفتراضي أن هناك علاقة ضعيفة غير ذات أهمية بين الثقافة المؤسساتية، أساليب الإدارة والعوامل البيئية وبين نجاح المشاريع المعلوماتية بينما بينت الدراسة أن العمليات التنظيمية، وجودة الإتصال المؤسساتي ، والبنية التنظيمية للمؤسسة تؤثرجميعا بشكل كبير وتكون بمثابة مؤشرات للتنبؤ بنجاح مشاريع التقنية المعلوماتية.

بشكل عام ، الدراسة إستطاعت أن تقيس مدى نجاح مشاريع المعلوماتية من خلال دراسة تأثير العوامل التنظيمية. الفروقات ذات المصداقية في عينة المعلومات اوضحت بأن العوامل التنظيمية لها أثر كبير في قياس نجاح المشروع.

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Dedication

I dedicate this dissertation

To my wife and daughters (Liza and Rahma) for their patience and understanding when I was occupied with my studies.

To Dr. Maria Pappadaki, the supervisor of this work, for her advice and guidance during this whole research.

To Professor Abdel Halim Boussabaine, for his professional advice and support.

To my teachers, colleagues, and friends who helped and supported me during this rtesearch.

Thank you all

Rehan Ahmad Khan

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1 CHAPTER 1   INTRODUCTION

1.1. Introduction

IT project management is a diverse field that is penetrating deep into the contemporary organizational dynamics. Regardless of the industry an organization operates in, planning and implementation of innovative IT projects has become the cornerstone for competitive advantage and growth in the long run. However, despite widespread implementation of IT projects, stakeholders are increasingly concerned about the overall success of these projects. An ever-increasing number of IT projects tend to fail due to multiple factors involved.

While some IT projects fail due to lack of appropriate knowledge, skills and attitudes among the management, others nosedive because of a complete absence, and at times opposition, from the organizational management. There are several other factors that may also play a role in success or failure of IT projects, including but not limited to teamwork, collaboration, team capabilities, process quality, user engagement and end-user acceptance. These factors can cumulatively be recognized as organizational factors, and seem to have a direct relationship with success of IT projects. The purpose of this research is to dig deeper and identify the main organizational factors that determine the success of IT projects across organizations.

1.2. Research Purpose

This research purposes to explore the organizational factors that influence the success of information technology projects. Informed by the existing literature, this research will explore the influence of organizational factors from five categorizations.

This research sets out to investigate the organizational factors that influence the success of IT projects. The specific research objectives include (a) the identification of the specific organizational factors affecting project success under five categorizations, (b) the identification of the influence of organizational factors IT project implementation. The central aim of this research is to identify the main factors involved in success of Information Technology related projects. Achievement of this aim is directly linked with the following research objectives;

- Conduct exhaustive primary research and literature review with regards to the influence of organizational culture and management styles on the success of IT projects.

- Through empirical evidence, determine the impact of organizational structure over implementation and success of IT projects.

- Determine the extent to which organizational communication influences implementation and success of IT projects.

- Examine the extent to which organizational process assets impact IT projects.

- Research and identify the specific enterprise environmental factors affecting the success of IT projects.

- Evaluate the impacts of the aforementioned organizational factors, both individually and collectively.

To achieve this objective, this research collected the data from project managers, team leaders and team members of different IT projects to assess how organizational factors contributed to their success or failure. By identifying the organizational factors influencing the success of IT projects, this research will inform IT project managers on the organizational factors that they can alter to increase the chances of success. While the research largely aims at pointing out the specific organizational factors, how they interact with each other and with project success will also be

central to this research. Given that organizational factors are often within the reach of project managers' influence, this research is of importance in boosting the success rate of IT projects.

1.3. Problem Statement

IT project record very high failure rates. According to a survey conducted by the Gartner Group in 2000, the failure rate of IT projects is around 40%. Interestingly, organizational factors are the leading contributors to these failures. Notably, the ineffective management of projects and project resources played a central role in these failures (Anon., 2001, p.24). Emam and Koru (2008) explain that while most studies reporting on the high failure rate of IT projects have credibility issues, the results are highly consistent. Based on data from 2005 and 2007, the author reports that 15.52% and 11.54% of IT projects were canceled in the two years, respectively. The failure rate of projects with respect to budget and schedule targets was even higher. For instance, the failure rate of projects in 2007 was reported 37% (Emam & Koru, 2008, p.84). Glass (2005) tries to explain the controversy in the reported rates of IT project failures by arguing that the reporting of failure is highly subjective. Even then, he acknowledges that failure rate of such projects are relatively high (p.110).

1.4. Research process (Saunder's Research Onion)

A more precise elaboration of this research study can be obtained by relating the entire research methodology to Saunder's Research Onion. To begin with, the current research study adopted the interpretivism research philosophy as mentioned in the research onion. As such, the central aim was to make valid interpretations from the data collected and analyzed with regards to the influence of organizational factors on IT project success. The deductive research approach aligned directly

with interpretivism, enabling successful completion of this research study. As for the research strategy, the current study made use of a longitudinal survey involving project managers, team leaders and team members from different organizations operating in a variety of industries, indulged in the research study through convenience sampling, which is a non-probability sampling technique in essence. A semi-structured survey questionnaire was utilized for primary data collection in quantitative form, whereas secondary research involved collection, analysis and discussion of secondary data from journals, periodicals, organizational websites and other credible academic sources. This implies that the current research study completely satisfies the components of Saunder's Research Onion, demonstrating its clear structure and methodology.

1.5. Methodology Outline

This section highlights the research methodology adopted during the whole process of finalizing the research. This research examines the correlation of organizational factors with project success by conducting data collection through survey and questionnaires to project members of different organizations where IT systems have been implemented. Quantitative method is used in this study in order to determine the individual insights of project members towards organizational factors and project success. The hypotheses are based on the research in the review of literature. Further details have been provided in chapter 3. Below are the high-level steps that highlights the research approach adopted for this research.

Steps adopted to conduct the Research

Literature Review
- Critical Success factors reviewed
- Conceptual Model and Hypothesis derived

Conceptual Model
- 5 Independent and 1 dependent variable identified; hypothesis developed
- Sounders Onion Research model adopted for research

Questionnaire
- Lickert Scale is Used (1-5)
- Pilot conducted with 8 people
- Questionnaire distributed to 150 people; response received from 100

Data collection
- Pilot was conducted
- Data collected using online forms, print out and emails.

ANOVA Test
(SPSS Version 23)
- Tukey post hoc analysis conducted to understand which category of the variable are significantly different from each other.

Regression Analysis
(SPSS Version 23)
- Linear Regression analysis to determine the relationship between variables and to test the hypothesis.

Reliability Analysis
(SPSS Version 23)
- Cronbach Alpha was conducted to determine the internal consistency of the data
- Purpose is to measure the confidence level

Descriptive Analysis
(SPSS Version 23)
- To measures central tendency and dispersion of data
- Percentages, mean, standard deviation and standard error

Discussion
- Data Analysis results were discussed in context to the Literature Review and Hypothesis
- Research implications and limitations highlighted

Conclusion & Recommendations
- Achievement of Research; Areas of further research highlighted.
- Future Research recommendations suggested

Appendices
- References highlighted
- Questionnaire

Figure 1: Steps adopted during this research

1.6. Outline Chapters

The rest of this research has been divided into 7 chapters, a concise overview of which has been shared below;

Chapter 2 – Literature Review: The purpose of this chapter is indulging in secondary data collection and gather the most relevant empirical evidence with regards to the organizational factors that influence the success of IT projects. A variety of sources, including peer-reviewed journals, periodicals and organizational websites has been utilized. An attempt has been made to include the most up-to-date sources of secondary data.

Chapter 3 – Research Methodology: This chapter sets out to describe the overall research methodology utilized for completion of this research study. The chapter identifies the overall research methodology and design along with a description of the rationale for selection of one method over the other. Furthermore, this chapter also describes the methods, inclusion / exclusion criterion, sampling techniques and instruments utilized for data collection. Finally, an elaboration of the data analysis methodologies is also presented in adequate detail.

Chapter 4 – Descriptive Analysis: This chapter is dedicated to the descriptive data analysis by using the SPSS (version 23) tool. As such, the chapter presents a detailed account of descriptive analysis where tests were conducted to determine the measures of central tendency and dispersion of the data i.e. to determine the distribution of data in terms of percentages, mean, standard deviation and standard error.

Chapter 5 - Regression Analysis, ANOVA and Hypothesis Testing: This chapter is dedicated to data analysis by using SPSS (Version 23) tool and testing the hypothesis. As such, the chapter presents a detailed account of regression analysis and ANOVA analysis along with the

documentation of hypothesis involved. The results have documented in detail thereby accepting or rejecting the hypothesis.

Chapter 6 – Discussion: A concise yet specific discussion on the results obtained through data collection and analysis is presented in this chapter. As such, the chapter identifies the main organizational factors and their relative influence over success of IT projects, while also highlighting the research implications, limitations of study and directions for future research.

Chapter 6 – Conclusion and Recommendations: A concise yet specific conclusion on the results obtained through this research is presented in this chapter. As such, the chapter identifies achievement of the research, while also highlighting the areas that need further research in future.

1.7. Summary

The current chapter presents a brief introduction about the topic of research study. It positions the field of IT project management as diverse and complex in essence, while highlighting some key factors that influence the implementation and timely completion of IT projects, including but not limited to lack of skills, abilities and past experience along with lack of upper-level management support. IT highlights the significance of timely and accurate completion of IT projects as an important means of achieving competitive advantage, and contends that certain organizational factors other than the ones identified earlier play a role in overall success of IT projects. The research purpose and linked research goals and objectives have also been identified along with a brief outline of the chapters that follow.

2. CHAPTER 2   LITERATURE REVIEW

2.1. Introduction

A literature review seeks to appraise what is currently known about a topic. Apart from gaining adequate information about a topic, a literature review is essential in identifying areas where there is inadequate or no research. Following the appraisal of the existing literature and the identification of gaps, a researcher can then engage in an informed research process (Cottrell & McKenzie, 2011, p.40). In this research, the literature review will center on understanding what is currently known about the organizational factors influencing the success of IT projects.

The literature review will be subdivided into several subsections. In the first section, the factors that influence project success will be assessed. The second section will narrow down to the organizational factors that influence project success. The literature review also highlights the existing gaps in the literature reviewed.

A project, by its nature, is a one-off series of tasks for delivering a unique product or service (Lindsjorn, Sjoberg, Dingsoyr, Bergersen, and Dyba). Often, the series of tasks that make up a project requires expertise in multiple but complementary knowledge domains. Consequently, multidisciplinary teams usually undertake projects. It appears various features of teamwork are some of the critical success factors for IT project success. Sanchez, Terlizzi, and Moraes highlighted the importance of paying attention to team characteristics when they found that large teams and highly-dispersed teams adversely affect IT project success (1620). Although having team members participate in multiple projects could enhance project success as those dispersed team members bring their diverse experiences to bear on the current project, high dispersion also reduces that member's effective contribution to any project for lack of strong social ties with other

team members (Sanchez, Terlizzi, and Moraes 1616). High team allocation dispersion is one factor that affects team quality, which has been established to be essential to agile projects (Lee, Park, and Lee 797). Teamwork is particularly important in agile projects that involve speed, adaptability, and flexibility of both the project scope or requirements as customer requirements and the macro-environment evolve. In fact, a survey of respondents in agile teams indicated that the quality of inter-member interactions determines team performance (Lindsjorn, Sjoberg, Dingsoyr, Bergersen, and Dyba 279). A study by Amaral, Fernandez, and Varajao further demonstrated that project success requires effective team collaboration, team cohesiveness, and the utilization of the full spectrum of each team member's expertise, skills, and experience.

Although discussions involving unique definite tasks in an organizational context often involve the mention of the word project, however, the unifying definition is not available. The nonexistence of such a definition can be attributed to the differences in the meaning of the term when referring to tasks of varying nature. Project management is defined as the application of skills, knowledge, tools, and techniques in executing the activities of a project aimed at meeting the needs of different stakeholder groups. This process involves directing and coordinating different project resources throughout the project lifecycle to achieve the set objectives while overcoming the existing constraints. Project management comprises of myriad activities geared towards achieving one final target (Prabhakar, 2008, p.5).

The project lifecycle represents the different stages that each project must pass through before its completion. They have traditionally been used in identifying the milestones of a project. The main phases are start-up, planning and organizing, execution, and termination. Although these stages are often viewed as having distinct activities, with one stage ending before the beginning of another, real-life projects often involve an overlap between them (Andersen, 2016, p.23). The start-

up phase entails all activities performed during project initiation. During this stage, project requirements are outlined (Rozenes et al., 2006, p.8). The planning stage, on the other hand, entails outlining the activities of a project, the resources required, and given timelines and expectations. This is followed by the execution stage that entails carrying out the project activities as planned. Project control – a process interlinking planning and execution – can be implemented to reduce the time between the two phases. In control, functions such as "planning, measuring, monitoring, and taking collective action" (Rozenes et al., 2006, p.6) are carried out. Project termination is the last phase in the lifecycle of a project. It marks the time when the project ends following the delivery of the final product.

There are myriad factors that influence the success of a project. Such factors act either individually or collectively in influencing the success of a project. Pinto and Slevin (1988) investigated the critical success factors throughout the lifecycle of a project by conducting a survey of 600 members of the Project Management Institute and project managers. The study established that the project success factors included project-related factors, organizational factors, and stakeholder-related factors. Among the main success factors included the project mission and managerial support, among others. The project mission and the support from the top management were the leading influencing factors of the success of the projects. However, the authors are quick to note that project managers cannot ignore any of the other factors. Since project managers must consider information and input from the project team, the organization, and the client, ensuring the successful implementation of a project is a very complex task. Although this research is highly informative on the critical success factors of a project, its consideration of projects from multiple industries may limit the applicability of the findings in specific industries (Pinto & Slevin, 1988, p.67).

Ofori (2013) also sought to determine the critical success factors in project management but with a focus on projects in Ghana. To accomplish this, the author surveyed 200 managers from Ghanaian organizations in different economic sectors. Despite the study being slightly different from that by Pinto and Slevin (1988), the results were closely related. Similar to Pinto and Slevin (1988), Ofari (2013) found the support from the top management and stakeholder involvement to be among the leading critical success factors in project management. Other major factors that were identified included the clarity of the project's goals and purpose, the availability of resources, personnel, leadership, client acceptance, and communication in project implementation. Interestingly, the researchers found the significance of each critical success factor to be pegged on certain organization-specific factors. Notably, the age and number of employees of the parent company were key determining factors of how each of the factors interacted with project success (Ofori, 2013, p.14). Similar to the study by Pinto and Slevin (1988), the applicability of the findings in this study in specific contexts may be low given its consideration of multiple economic sectors. Besides, the generalizability of the study may be low outside the Ghanaian context.

Ahmad et al. (2015) use the same approach as Ofari to investigate the critical factors influencing the success of a project. In their case, they focus on the Pakistani public sector. The researchers used a survey questionnaire to collect data from 300 participants, 185 of whom completed the questionnaires that were used for the final analysis. The authors then tested the correlation between four organizational factors and project success. Planning and control was the leading project success factor. It was followed closely by business and workforce soundness and quality performance, in that order. The impact of past performance was insignificant. The article is highly credible given its correlation of various internal factors with project success. However, its credibility may be compromised by the failure by the authors to describe the qualifications of the

respondents in rating the relevance of the various independent variables tested (Ahmad et al., 2015, p.815).

To investigate the critical success factors in the performance of projects, Babu and Sudhakar (2015) reviewed the existing literature related to construction projects. Based on their systematic review, they find that the critical success factors can be categorized into manager's performance-related factors, organizational-related factors, project-related factors, and external environmental factors. From this categorization, the main manager's performance-related factors include the support from the top management and the competence of the manger. The organizational-related factors, on the other hand, include communication, troubleshooting, technical skills, and the team members' competence. Client consultation, client acceptance, and quality of suppliers and sub-contractors are the main factors related to the external environment. Lastly, the project's mission, schedule, and monitoring and feedback are the main project-related factors that influence the project's success at various implementation stages. The authors emphasize the importance of understanding the critical success factors through their argument that these factors offer better guidance to the implementation of the project than the project goals. Besides, they guide team members in identifying the important elements of the project and act as a valuable tool in the realignment of the operating activities during correction. Even with the in-depth insight offered by this article, the number of sources relied upon to arrive at the conclusions is limited while some sections do not contain any citations (Babu & Sudhakar, 2015, p.3285).

Alias, et al. (2014) also focused on the critical success factors of project management in construction industry projects. According to the authors, there are numerous factors throughout the implementation of construction management projects that have a significant influence on the success of such projects. In the study, the authors sought to develop a conceptual framework that

would guide the understanding of the critical factors influencing project success. The development of this conceptual framework was founded on the review of the relevant literature and primary data collected from construction project experts in Malaysia. They found that project success is dependent on five different sets of factors: project procedure, management action, project-related factors, external issues, and human factors. Each of these factors is highly influential in project success. They are quick to note that the influence of each of these factors on project success is dependent on the success measure being evaluated. Even then, they act collectively to determine the overall project success. According to these authors, understanding these critical success factors is important in the development of a competitive edge for project management companies. They are quick to warn that the failure to determine the context of each of these critical success factors may compromise the ability of their understanding to enhancing project success. Even with the significance of these findings in guiding future project management, their generalizability is limited since they are only limited to one country and one project management sector (Alias et al., 2014, p.61).

In a quantitative study to investigate the five top factors that influence the success of project, Beleiu et al. (2015) used questionnaires to collect data from project managers, clients, contractors, team members, sponsors and owners. A total of 47 questionnaires were obtained at the end of the data collection period, with project managers and project team members being the main respondents. From a choice of 19 project success factors, the clarity of goals and directions, competence of the team members, clarity of roles and responsibilities, compliance with budget, timeframe and other criteria, and stakeholder consultation were found to be the five leading project success factors. The authors insist the importance of identifying the critical success factors of any project before commencing on its implementation if the chances of succeeding are to be enhanced. Since the

critical success factors may change as the operating environment of projects evolve, the authors recommend their periodic monitoring. However, the article may suffer from sampling bias owing to the fact that project managers and project team members were overrepresented in the survey (Beleiu et al., 2015, p.59).

2.2. Influence of Organizational Factors on Project Success

Organizational factors are perhaps the leading category of factors that influence project success. As explained by Zidane et al. (2016), organizational influences are the key internal determinants of a project success while project environment conditions are the key external determinants of the success of a project. The authors categorize organizational factors into five groups: "organizational cultures and styles, organizational communication, organizational structures, organizational process assets and enterprise environmental factors" (p.163).

Zidane et al. (2016) seek to investigate the organizational culture as a critical success factor in a project. To do this, they collect data from 15 participants using a qualitative mixed method. Majority of the participants are project managers, team members, or functional manages with at least five years of work experience. The respondents rate openness as the most critical success factor within the organizational culture context. Other shared values that score highly include tolerance, positive attitude, engagement, honesty, trust, and professionalism. Values such as respect, commitment, transparency, and discipline have also been mentioned but do not score highly. Some of the influences of these shared values in project development include addressing uncertainty, lowering costs, improving project performance, and aligning what is planned and what is expected. In concluding, the authors insist the need to promote human interrelations during project implementation to enhance its success (Zidane et al., 2016, p.162).

Nguyen and Watanabe (2017) affirm the significance of the organizational culture as a critical successful factor in projects based on a study of 199 construction projects in Vietnam. Practitioners involved in these projects were subjected to a survey aimed at collecting case-specific data. However, contrary to Zidane et al. (2016) who found openness to be the most critical cultural factor while commitment was moderately significant, Nguyen and Watanabe (2017) find the commitment of the contractor to the contract agreements to be the most critical factor influencing project success. The overall performance of the project is significantly influenced by work orientation, contractor commitment, and the alignment of the project goals. Cooperative orientation has also been shown to influence the productivity of labor. Other aspects of the project that are influenced by cultural factors include learning performance and participant satisfaction. The authors conclude by urging the need to prioritize culture change as a tool of promoting project success. Although the study offers important insight into the interplay between organizational culture and project success, however, it suffers from possible selection bias given the use a small sample with an overrepresentation of contractors in the respondents (Nguyen & Wanatabe, 2017, p.781).

In a study to establish the relationship between project organizational culture and project performance, Stare (2012) found that the organizational culture has a significant influence in reducing cost overruns and project delays. The study entailed the collection of data from 950 project managers, project team members, and other stakeholder in the Slovenian public sector and various companies through the use of questionnaires. The use of internal regulations, the respect of the manager's authority, the prioritization of project aspects, and managerial attitude were the main cultural dimensions related to performance. These cultural aspects together with the remuneration strategy used in these projects interacted to influence the motivation of the team

members. According to the authors, although the project organizational culture was high, the inappropriate reward system in the Slovenian context led to poor project performances. They conclude that although monetary rewards can influence project performance through their effect on team motivation, they are incapable of causing project failure. On the contrary, low project organizational culture could cause project failure. The limited inquiry into reward-related matters – size, definition, and distribution – may have led to a limited impact of rewards on the outcome project performance (Stare, 2012, p.40).

In another study, Stare (2011) also investigated the impact of the project organizational culture on its success while focusing on Slovenian enterprises. The researcher included aspects of the organizational structure, as opposed to the reward system in the other research. The research utilized data collected from 137 Slovenian enterprises using a Web questionnaire. The authors established that multiple organizational structures were utilized by Slovenian firms, with the matrix organizational structure being the most dominant. Even then, there was no significant correlation between the organizational structure and project implementation in these organizations. The organizational culture, on the other hand, was highly significant in project implementation. In particular, the attitude of the top management and adherence to internal regulations were critical success factors in the implementation of projects. The main impact of the organizational culture was felt in the reducing project delays and less felt in reducing costs.

The success of projects within an organization is influenced by the organizational structure. As explained by Onuta (2012), project managers must find ways of coping with the organizational structure to ensure the successful implementation of projects. While investigating the challenges faced by program managers in coping with the global organizational culture, the author interviewed eight project managers and one program manager. The study established that project

success and organizational performance are partly dependent on the ability of the organizational structure to create an environment of business excellence regardless of the economic climate. Project managers working in fast-changing operating environments are required to reshape the organizational culture to fit the changes as they occur. The main influence of the organizational structure on project management processes is primarily in staffing, management, and execution of projects. While the national culture had minimal effect on the organizational structure, organizational culture is closely related to the organizational structure. It is the role of project managers, therefore, to formulate an organizational culture that aligns to the structural construct. The credibility of this study could have been enhanced by interviewing more participants than the current number (Onuta, 2012, p.1).

Elkassas et al. (2013) affirm the influence of the organizational structure on project success through the argument that different organizational structures fair differently depending on the context. Although they are quick to clarify that there is no such thing as a good or a bad organizational structure, they explain that the appropriateness of different organizational structure in a given situation determines is success. The authors engage in an analytical process of data collected from 53 Egyptian engineers with a focus on the construction industry. The engineers include project managers, construction engineers, and designers among other experts. The study sought to assess the success of different organizational structures in project management given the considerations of time, costs, project type, and experience of the managers. From the study, it was found that the appropriateness of the organizational structure was determined by the project type, project length, project size, and the completion schedule. In the Egyptian construction industry, the combined organization was the most preferred organizational structure. The main two combinations were the matrix and functional organization and the matrix and projectized

organization. Based on the findings, the researchers propose that organizations should first select the planner and the manager before settling on the organizational structure. The selection of the project team should come last. The applicability of the findings and recommendations of this study may, however, be limited by the use of one country context while focusing on one industry only (Elkassas et al., 2013, p.411).

Schnetler et al. (2015) investigate the characteristics of matrix type of organization structures and their influence on project success. During this study, the authors assess how this organizational structure influences the drivers of project success such as communication, trust, and collaboration. To do this, the researchers collected data using questionnaires from approximately 2800 project team members from numerous South African industries, although only 106 questionnaires were completed and used in the study. The main positive characteristics of the matrix organizational structure, and which had a substatial impact on the drivers of project success, include the high communication frequency, flexible use of personnel, employee motivation, and job satisfaction. Among the main negative characteristics of the matrix structure included power struggles and increased costs. Increased communication frequency was found to be the most significant characteristic of the matrix structure that influenced the drivers of project success. However, the findings of this study may be biased given the possible misrepresentation of the positive characteristics of the matrix organizational structure (Schnetler et al., 2015, p.11).

Nahmias et al. (2010) also point to the significance of the organizational structure in influencing project success with relevance to change projects. In their study, the researchers set out to investigate the factors that influence change projects, as well as those that are influenced by them. Data was collected from three equally sized organizations in different sectors that had previously implemented organizational change projects. From the study, it was found that the main influence

of the organizational structure on project success is based on its ability to support the project requirements. Organizational structures that lack the ability to support the project often lead to limited project success. In some cases, a project may necessitate the change in the current organizational structure. While this may be aimed at bringing positive impacts on the project, the proposed change in the organization may encounter resistance, leading to an overall negative influence. The key constrain of this study is that it draws its conclusions from the findings of three similar projects from three organizations, thus posing the possible selection bias (Nahmias et al., 2010).

Allen et al. (2014) also found the organizational structure as one of the main factors that influence the project success. In their study, the authors sought to assess the common critical success factors that contribute to project success and avoided project failure. To do this, the New Growth Factory project by Proctor & Gamble was used to represent a successful project while the 123-Foot Patrol Boat by the U.S. Coast Guard was used to represent a failed project. The success or failure the two projects can be partly attributed to the organizational structure according to the findings. To start with, the organizational structure implemented by P&G aimed at creating small groups that focused on new-growth initiatives, which were effective in the implementation of the New Growth Factory project. These groups consisted of dedicated teams engaged in market research and technology development among other activities. On the other hand, the organizational structure of Coast Guard's parent company, Homeland Security, did not offer much assistance. Although the matrix structure employed by the Department was effective in enhancing the autonomy of the project manager, it also led to his isolation. The project manager's needs for assistance with acquisition were never met. This was one of the key reasons that led to the cancellation of the 123-Foot Patrol Boat project. This research study is valid in a different range of contexts given that the

success factors are general enough to be duplicated in other projects. However, the use of only two projects may have resulted in selection bias (Allen et al., 2014, p.1).

Organizational communication is perhaps the main organization factor that affects the success of an organization in all aspects. As explained by Mutuku and Mathooka (2014), despite the complexity of organizational communication, it is very important to organizational functioning and success. The main influence of organizational communication on success is reflected in its impact on the performance of the employees. For instance, about seven out of ten failed change management projects are attributed to poor communication. Data was collected from Nokia Siemens Networks Kenya. 156 support staff, middle managers and senior managers of the organization was recruited in a descriptive survey to determine how communication affected their motivation. Among the critical aspects of communication that affected employee motivation at the company included involvement in decision-making, nature of communication, the channels used in communication, and the sharing of information. These elements were key determinants of the employee motivation. Given the importance of employee motivation in enhancing employee productivity, the authors recommend that organizations come up with effective communication strategies to enhance employee motivation and performance (Mutuku & Mathooko, 2014, p.28).

Culo and Skendrovic (2010) emphasize the significance of communication management in influencing project success. They affirm the assertion by Mutuku and Mathooko (2014) that mastering effective communication management is difficult but insist that any successful project management process includes some aspects of effective communication management. Through the review of the existing literature on the impact of organizational communication on project success, the authors find that the way a project manager handles communication management determines their success. Effective communication has a positive influence on project success given its ability

to bridge the gap between diverse stakeholders. Since most projects are comprised of stakeholders from diverse backgrounds, cross-cultural communication skills are a critical asset for any project manager. Managers who contextualize their communication to fit the needs of their audience record highly successful projects (Culo & Skendrovic, 2010, p.228).

Ramsing (2009) also acknowledges project communication as one of the critical roles of managers who wish to succeed in project implementation. The author engages in a review of the existing literature to determine what is currently understood about the topic. He establishes that the existing literature recognizes strong communication and interpersonal skills as one of the main skills that a project manager must possess. In fact, the availability of information coupled with effective communication has been argued to rank highly in project management critical success factors. The importance of effective communication in the management of a project arises primarily from the problematic power relations regarding project teams and project managers. In fact, projects can only run smoothly if there is intense communication not only between project managers and the project team but also between the project manager and top managers at other levels of the organization. The input of each of these players is critical to ensuring the success of a project. For this reason, effective project communication should be considered from a strategic perspective to ensure that project team members view projects as part of their daily roles within the organization as opposed to isolated individual tasks (Ramsing, 2009, p.345).

Alpert and Hartshorne (2013) sought to assess how different types of organization process assets as evident in the project management practices of assistant professors influenced project success. The researchers used grounded theory and interviewed 22 professors in 13 states in the United States to determine the impact of process management processes and tools to enhance their successful implementation of research projects. The participants reported using consistent project

management processes, which reduced the time they took in planning the research projects and the overall project timeline. The main tools utilized by the professors included timelines, task lists, and storage systems that enhanced the orderliness of the projects. The use of these tools and processes was critical to the successful completion of projects. In particular, they assisted in stakeholder engagement, project collaboration, and seeking research support. Organizational learning was also critical in the implementation of best practices in research. The experiences of the assistant professors in project management during their graduate studies had positive and negative impacts regarding how each handled their research projects (Alpert & Hartshorne, 2013, p.541).

Mathur et al. (2007), on the other hand, focus on intangible project management assets as a source of competitive advantage in project management. Respondents in the study were members of the North American Project Management Institute. While drawing on the resource based view of a firm, the study established that the intangible organizational assets enabled firms to develop a competitive advantage while being infrequent and valuable. Investment in intangible assets based on tacit knowledge was seen as an effective way of enhancing the leveraging of the project management process to yield a competitive advantage. However, the sampling approach used in the study poses possible generalizability bias (Mathur et al., 2007, p.460).

In a follow-up study, Mathur et al. (2013) sought to investigate project management assets characteristics and outcomes. This was thought of as a way of linking the resource based view of organizational assets with organization support and the attainment of competitive advantage. Assets that captured and disseminated knowledge about project management, as well as facilitated the use and sharing of knowledge were characterized as valuable resources. Two proprietary tangible and intangible assets were found to be inimitable while two knowledge sharing processes

were characterized as rare. These organizational assets were critical to ensuring enhanced competitive advantage. The project management assets that were rare, inimitable, and valuable were a key predictor of project outcomes and success. Even then, this study suffers from self-report bias and a low response rate (Mathur et al., 2013, p.112).

2.3. Information Technology Projects and Their Importance to Business Performance

Recent years have been characterized by the increased intake of information technology by businesses. In what they refer to as the information technology revolution, Purnama and Subroto (2016) argue that this shift have led to significant changes in the way businesses conduct themselves in competition, marketing, and production. Based on a study of small and medium businesses in Indonesia, they find that the use of information technology in business operations has a positive impact on business performance (Purnama & Subroto, 2016, p.984). Tanriverdi (2005) affirms these findings in a study to address the relationship between IT capabilities and the performance of multi-business firms. Based on data from 250 Fortune 1000 firms, IT capabilities have been shown to enhance the finance performance of a firm through their influence of knowledge management (Tanriverdi, 2005, p.311). Similarly, Byrd et al. (2008) explain that the influence of IT infrastructure on business performance can either be direct or indirect. The authors use the resource-based view approach to show how IT infrastructure can influence business performance indirectly through the firm's logistics information system (Byrd et al., 2008, p.161). Besides the impact on the financial performance of a firm, IT capabilities influence the performance of core competencies. When using data from 100 French firms, Bacha (2012) shows that the value creation and exclusivity components of a firm's core components are significantly

enhanced by information systems. This influence is higher than the influence that IS information systems have on supporting competencies (p.752).

Ong and Chen (2014) go a step further to investigate the influence of information technology on the value of a firm. Based on data from a longitudinal study involving 100 IT leaders from *InformationWeek*, the authors find that while IT contributes to business performance, its contribution to firm value is higher. Besides, the contribution of IT is more felt in the long-run than in the short-run (Ong & Chen, 2014, p.70). Ong and Chen (2013) affirm these findings when assessing secondary data of 480 firms. In this study, they establish that IT capabilities have a significant influence on company's performance, value, and the future. The effect on firm value owes to the positive impacts of IT capabilities on the opportunities for growth, innovation, and the development of intangible assets (Ong & Chen, 2013, p.669).

Luftman and Brier (1999) are quick to caution that information technology must be harmonized by the operations of the business in question. Besides, IT projects are largely successful in environments characterized by strong support by the senior management, strong leadership, and effective communication among others. These findings are based on the opinions of executives of Fortune 1,000 companies based in the US (Luftman & Brier, 1999, p.109). Similarly, although Santhanam and Hartono (2003) acknowledge that the technology capability of a firm is directly related to the firm's financial performance, they argue that past performances and halo effects must be acknowledged when predicting this relationship (Santhanam & Hartono, 2003, p.125).

2.4. Influence of Organizational Factors on IT Projects

Sudhakar (2012) attributes the success of IT projects to myriad factors. In this study, the author reviewed the existing literature to determine the main factors influencing the success of software

projects and then categorized these factors into seven groups. He acknowledges the unique nature of IT projects, which makes their critical success factors slightly different from those of other projects. The complexities of IT projects largely arise from the need to balance between knowledge in project management areas and technical knowledge about the specific project being implemented. Having exhaustively reviewed the existing literature, the study found a total of 80 success factors that could be categorized as communication factors, organizational factors, technical factors, product factors, environmental factors, team factors, and project management factors. Interestingly, while technical factors play a key role in the success of software projects, managerial, organizational and cultural factors have a more significant influence. Each category of success factors cannot be ignored if project success is to be enhanced. However, the use of secondary data could limit the application of the findings of this research in specific contexts since the context in which the studies reviewed have been carried out has not been revealed (Sudhakar, 2012, p.537).

According to Iyamu (2017), the ability of IT projects to create a competitive advantage in the firms that they are implemented is dependent on the improvisation of these projects. This improvisation determines the project success or failure. Numerous technical and non-technical organizational factors influence the improvisation process and contribute to project success or failure. While relying on data collected from 31 IT specialists in a telecommunication company based in South Africa, the authors found that the main non-technical factors can be classified into cultural value, organizational structure, power relationship, human capacity, know-how, change management, and process. For project success, these factors must be considered in the improvisation of IT projects. The findings of this study are important to practitioners seeking to develop a model for

IT project success. However, the findings could have benefited from the use of a larger sample size (Iyamu, 2017, pp.1-8).

Standing et al. (2006), also sought to investigate the attribution of IT project success and failure from the perspectives of IT professionals and IT support workers. Data was obtained from IS and IT personnel of 500 Australian companies. Based on the study, it was found that both IT professionals and IT support workers acknowledged the roles played by internal and external factors in determining the success or failure of IT projects. The support workers were biased in their attribution of success and failure as they largely blamed failure on external factors while taking credit for project success. The IT professionals, on the other hand, were more objective as they attributed both failure and success to a combination of internal factors and external factors. The leading internal factor was the ability of management and personnel to carry out their duties successfully. Even with the in-depth insight provided by this study, however, the results obtained could be biased given that the respondents may have overestimated their contribution to project success and underestimated their undoing in cases of project failure (Standing et al., 2006, pp.1148-59).

While aiming to investigate the factors that contributed to the successful implementation of IT projects, Schniederjans and Yadav (2013) sought to assess the critical success factors associated with successful ERP implementation. Past Literature data was collected and used for this study. The authors also engaged in theoretical development. The critical success factors identified in the study were classified into three groups: technology, organization, and environment. Under each of these categories, various constructs that are made of critical success factors were identified. As an illustration, the organization aspect of the firm was composed of factors such as change management, support from the top management, and implementation plan among other success

factors. The authors found that some critical success factors were not adequately addressed in the existing literature. For instance, the literature on trust as a critical success factor to ERP implementation was limited. Trust, according to the authors, is a major critical success factor under the environment aspect (Schniederjans & Yadav, 2013, pp.364-87).

According to Kamhawi (2007), the critical success factors of IT projects are dependent on the success dimension being addressed. In this study, the author used a sample of 70 respondents who were actively involved in the implementation of enterprise resource planning (ERP) systems. When basing success on project success metrics, the main success factors identified in this study included the planning process, organizational resistance, and ease of use. On the other hand, the planning process and organizational fit were the leading success factors from the business metrics success dimension. Interestingly, the study found classical success factors such as support from the top management, training, and strategic fit, among others, to have an insignificant influence on the success of the ERP implementation process. However, the credibility of these findings may be limited given that the data used in measuring success from the two dimensions is subjective. The sample size used in the study was also small (Kamhawi, 2007, p.34).

Organizational factors play a critical role in determining the success of IT-based firms and projects as established by Lee et al. (2005). The authors based their study on internet-based inter-organizational systems (IIOS) planning projects. Questionnaires were used to collect data from 202 information systems executives working in IIOS planning projects in Taiwanese firms. Both environmental and organizational factors were found to play a critical role in the success of these projects. With regards to the organizational factors, it was found that the relationship between the chief information officer (CIO) and the chief executive officer (CEO) is critical to the success of these projects. In fact, the two should assume joint responsibility if the benefits of information

system projects are to be realized. The second organizational factor is the maturity of the technology being used. Mature technologies have higher capabilities and record improved success rates. Unfortunately, this study may suffer selection bias since data was obtained from one informant only. Besides, the cultural variations between the study location (Taiwan) and other countries may affect the generalizability of these findings (Lee et al., 2005, p.527).

2.4.1. Organizational Culture and Management Styles

Sangar and Iahad (2013) assess the factors influencing the success of IT projects by focusing on the implementation of business intelligence systems (BIS). The authors approach the paper from the management and technology perspectives. Data collection in the study entailed the review of the existing literature and interviews. Participants in the interviews were people with relevant experience in information systems and BIS. The success of these projects was influenced by multiple managerial critical factors, although their relevance differed at different stages. In the pre-implementation stage, the most critical managerial success factors were having a clear vision and mission, organizational culture, and managerial support. In the implementation stage, on the other hand, change management, managerial support, stakeholder involvement, and effective project management took center stage as the critical success factors from the managerial perspective. End user training and education were the sole critical success factor identified in the post-implementation stage with regards to organizational factors. These organizational success factors worked closely with the technological factors (software/hardware suitability, data accuracy and integrity, IT infrastructure, and network) to determine the success of implementing these IT projects. This study

may suffer the limitation of bias given its omission of the role of some factors, especially external factors, in influencing the implementation of BIS projects (Sangar & Iahad, 2013, p.176).

The managerial capability of the project manager is also a leading organizational factor that influences the project success in the ICT sector. Blaskovics (2016) set out to determine the role played by managerial capability in influencing the success of ICT projects. The author does this by literature review and conducting semi-structured interviews with project managers from five companies to determine the impact of the attitude of the project management on project success, as well as the interrelationship between the personal characteristics of the project manager and the attitude and leadership style of the management. From the research, four management attitudes (strategic orientation, stakeholder orientation, technocracy, and plan-based attitude) were found to have a significant influence on the project success, especially with regards to time and quality. Stakeholder-oriented project managers used motivation, communication and stakeholder engagement as the main tools to ensuring project success while strategic-oriented project managers largely considered the completion time and the expected quality when addressing the project goals. Planning, optimization, and control were the main tools relied upon by the other types of project managers. Each of these attitudes also impacted the cost of the project. The attitude of the managers, as well as the leadership that they employed, was influenced by their personal characteristics. For this reason, the personal characteristics of the managers indirectly influenced the success of the projects. However, the failure by the researcher to take into consideration other factors when assessing the relationship between personal characteristics and the managerial attitude and leadership skill is a serious limitation in this study (Blaskovics, 2016, p.261).

Project managers have a number of responsibilities to consider in managing a project. Project managers are now seen as implementers of corporate strategies which gives them a strategic

significance in any organization. (Kloppenborg & Opfer, 2002, p. 18). Because project managers are viewed as key implementers of corporate strategies, the top management's support is essential in giving proper guidance to the project team in order to fulfil its endeavors to complete the project requirements.

According to Sarif et al. (2016), The support from top management down to the project team is very essential in assuring the project success. Hence, the top management must be committed to the project team in order to give direction and allocate necessary resources needed for the project. The team's progression is also dependent on the support of the top management and the intervention of top management in project development has a high impact to the project success.

In the IT sector, top-executives believe that organizational issues should be given more importance as compared to technical issues. This is because there are a lot of uncertainties in IT projects due to the rapid changes and adjusting requirements of customers. (Doherty and King, 2001) According to Zwikael (2008), the project success is determined to be higher as the support from the top-management increases. The support coming from the top management toward projects varies per type of industry and it should be carefully measured by top executives. It is believed by most top-executives in the IT sector that there is no "one-size fits all" type of support. Every project must be measured and calculated in accordance with the goal of the organization in order to determine the executive support that must be fulfilled. Hence, it is implied that the involvement of top-management in IT projects is critical for achieving project success.

The soft competencies of IT project managers is also critical role in determining IT project success. Smith et al. (2011) assessed the impact of soft competencies of project managers on IT project success by requesting IT project managers to relate stories along the themes of optimism and stress

and how these incidents affected project success. Based on the study findings, it was concluded that stress has the potential of affecting IT projects either positively or negatively. On the one hand, stress was found to affect motivation positively. On the other hand, if poorly managed, stress had a negative impact on productivity, individual behavior, and the health status of project members. Managerial optimism had a positive impact on project success by improving project relationships. Even then, optimism only affects project success positively if it's project managers maintain it at a realistic level. The influence of optimism on project success is partly dependent on the managers' ability to create an appropriate project plan. Barna (2013) confirmed the importance of soft competencies in IT project success in a study involving 21 IT project managers. In the study, it was established that soft skills related to communication, teamwork, and leadership complemented technical skills to achieve IT project success. Such competencies included tracking progress regularly, listening to ideas, and making clear decisions, among others (Barna, 2013, p.17).

According to Gichoya (2005), information and communication technologies (ICTs) have led to the remarkable improvement in operational efficiency and effectiveness, especially in the delivery of services by government. However, the successful implementation of ICT projects is dependent on several factors, which determine how helpful these projects are. To determine the success factors of government ICT projects, the author conducts case studies of developed and developing countries grounded on secondary data. The Kenyan e-Government reality has been prioritized in these case studies. The study attributes the successful implementation of government ICT projects to drivers and enablers. Support from government is the driver identified that is related to organizational factors. The enablers identified, on the other hand, include effective project management and embracing good practices. The leadership style, organizational culture, data systems, attitudes, and infrastructure are other organization-related factors that may influence

project success (Gichoya, 2005, p.175). Review of retrospect helps in identifying the imperative role played by organizational culture in successful implementation of IT projects. Research suggests that organizational culture is associated with the beliefs, values, assumptions and ways of interaction utilized by the organizational management and its employees. Effective change management is also an essential component of organizational culture that may influence the overall success or failure of IT projects (Katzenbach and Thomas, 2016). For successful completion of IT projects, vigilant change management is required in order to change the employee mindsets and induce the highest degree of user acceptance (Katzenbach and Thomas, 2016). Implementing a new technology inside an organization is almost always faced with notable opposition from the operational staff, who are habitual of the traditional methods of doing work (Knight, 2015). Thus, the organizational culture must be accommodating to ongoing changes.

In addition to the overall organizational culture, the management style also plays a pivotal role in implementation of IT projects and their success. Assuming the leadership and management can be considered interchangeably, it is argued that organizational leadership styles play a critical role. Research suggests that the various styles of organizational management may influence IT projects differently. For instance, Autocratic style of leadership compels employees to remain within the identified lines of discipline and perform as instructed by the manager or leader (Rhatigan, 2016). Under such a situation, prevention of disciplinary action is the only motivation behind steering employee behaviors and attitudes in favor of the IT project. On the contrary, consultative leadership or management would enable the management to know about the employees' beliefs and assumptions about the new technology to be introduced prior to the actual introduction of technology. This would help the management in making the necessary arrangements that position the technology as favorable in the eyes of the workforce (Rhatigan, 2016).

The leadership style of the project manager is also a widely discussed factor influencing the success of IT projects. Chan and Mills (2011) sought to investigate the critical success factors in the implementation of an enterprise resource planning software by relying on data obtained from a doctoral thesis paper of a student involved in the project as an employee. The success of this project was highly influenced by the leadership style of the project leader and the project culture (Chan & Mills, 2011, pp.168-76). The leadership style was also found to have a significant influence on the success of IT projects in a study conducted by Shore (2005). While reviewing the literature related to the high failure rate of global information systems (IS) projects, the author attributed the success of IT projects to three factors: organizational context, external environment, and technology. The leadership style of the project manager was one of the leading organizational factors affecting IS projects. While admitting that there does not exist a one-size-fits-all leadership style in the management of IS projects, the author is quick to note that the success of different leadership style differs at different stages of the project. For instance, it was found that the charismatic leadership style was highly appropriate in the initial phases of the project when high resistance for change was expected. However, the leader ought to shift towards a task-oriented leadership style as the project continues. The periodical reliance on a relationship-oriented leadership is recommended at all project stages. However, the findings of this article may be biased given their high reliance on secondary data and the expert opinion of the author (Shore, 2005, pp.1-4).

Despite this shortcoming, these findings are affirmed by Ng and Walker (2008) when investigating how the project manager's leadership style influence the success of an IT project across different stages of the project lifecycle. Based on a case study of an ICT project implemented in the Hong Kong public sector, it was found that the past success of one leadership style by a project manager

cannot be carried forward to another project with equal success. On the contrary, the project manager ought to adjust their leadership style to fit the context and implementation stage of the project. The only major limitation that this study may suffer is the focus a single project, which may lead to selection bias (Ng & Walker, 2008, pp.404-24).

Randeree and Ninan (2011) also found the manager's leadership style to have a high influence on IT project success. In their study, the authors used a tailored instrument to study the effectiveness of the leadership approaches employed in 42 IT project teams in the United Arab Emirates. From the study, it was established that the use of leadership styles that promoted information sharing, trust, and the autonomy of the team members was highly effective in enhancing the success of IT project teams. The transactional leadership with a relational focus, in particular, was highly effective in promoting team success. While this study is highly effective in recommending an appropriate approach to leadership in IT projects, its generalizability may be limited given that no comparison was made between the UAE context and other contexts (Randeree & Ninan, 2011, pp.28-45).

The findings in Randeree and Ninan (2011) were affirmed by Natrajan and Chattopadhyay (2014) when comparing how different leadership styles impact the success of software projects. The author sampled 50 IT professionals in an Indian software organization and used ANOVA to compare the impact of task-oriented, change-oriented, relation-oriented, and boundary-spanning leadership behaviors. The authors found that the leadership style of the project manager was important in addressing people-related issues such as behaviors and motivations. Interestingly, all the four leadership behaviors were important during the implementation of software projects. Even then, the relative importance of the relation-oriented leadership behavior was higher when compared to that of the three other behaviors. This was as a result of this behavior's ability to

establish trust and support while at the same time empowering project members. Projects with limited face-to-face interactions, in particular, are heavily dependent on the relationship behaviors for success. The author feels that the number of participants may have been insufficient to delivering highly credible results (Natrajan & Chattopadhyay, 2014, pp.1-7).

Gottschalk and Karlsen (2005) are, however, quick to note that the leadership style and competencies that are critical to the success of IT projects are dependent on the nature of projects in which a project manager is involved. The authors assessed which among six managerial roles was the most significant in determining project success. The study involved two surveys where one was on an internal IT project while the other was an outsourcing IT project. From the study, it was found that the project manager involved in the internal IT project had a higher internal orientation than the manager involved in an outsourcing project. The personnel leader role was, therefore, more critical to the success of the internal project manager than the outsourcing project manager. On the other hand, the spokesman role the most critical to the outsourcing project manager (Gottschalk & Karlsen, 2005, p.1137).

Ifinedo (2007) reports that the success of IT projects is depended on the interactions of the organizational culture and other organizational factors. In this study, the author assesses how the organizational culture, structure, and size and IT factors, interact to determine the success of ERP implementation. The study was based on data collected from 470 firms in Estonia and Finland. From the findings, it was found that the organizational culture, structure, and size were all important factors in determining the success of ERP systems. IT factors were the moderating variables in this relationship. These factors acted collectively to determine overall project success. However, the study may have been characterized by personal bias since the selection of the participating firms was not random (Ifinedo, 2007, pp.28-39).

2.4.2. Organizational Structure

The organizational structure is also a key organizational factor that influences the success of IT projects. As explained by Sarif et al. (2016), the organization structure is among the key organizational factors that influence the success of IT project implementation. In the study, the authors collected data from 89 project managers and team members involved in the implementation of IT projects in government agencies in Kuala Lumpur and Putrajaya. The organizational structure was rated as a significant determinant of project success by 93% of the respondents. In particular, it was a critical success factor influencing the adherence to the costs, deadlines, and technical objectives (Sarif et al., 2016, pp.1-6). Perhaps a more detailed explanation of the role of organizational structure in this regard can be identified from the research conducted by Chege (2014) who identified top management support to middle level and lower level management as a critical factor in determining the overall success of IT projects. Mahoney and Wixom (2008) also identified the positive role played by an open and supportive organizational structure, mainly attributed to support from the top-level management as quintessential in ensuring the success of IT projects. A supportive organizational structure is one that is capable of handling the soft issues such as employee motivation towards IT adoption and use, culture, beliefs and values through effective IT governance procedures carefully introduced across all levels of the organization.

Mburugu et al. (2016) investigated the influence of the organizational structure on the success of IT projects by focusing on the implantation process of the electronic project monitoring information system (e-ProMIS) for institutions of higher education for Kenya. The data utilized in this research paper was obtained from 30 tertiary institutions and comprised a sample of 162 members of staff who were subjected to a survey. The author used formalization, centralization,

and complexity as the main indicators of the organizational structure. The centralization structure was the most applied organizational structure in these tertiary institutions, followed by complexity and formalization. For this reason, the decision-making process was largely at the top. Interestingly, organizations with the centralization structure, as well as those utilizing the formalized structure, performed better in the implementation of e-ProMIS than those employing the complexity structure. This led to the conclusion that the complexity structure was inappropriate in the implementation of these projects. One possible limitation of this study is the limited generalization of the study findings given the specificity of the context in which it was conducted (Mburugu et al., 2016, p.50).

According to Saylor (n.d.), organizational structure is an effective tool to achieve the organizational goals and objectives. The structure itself eases the coordination processes between individuals interacting within the organization. Hence, there are four defined organizational structure elements that are being commonly used in the industry: Centralization, Formalization, Complexity, and Bureaucracy.

Centralization is the degree to which the decision-making power is centralized the to the higher levels of management. The important decisions are being formulated by the higher positions in the hierarchy and passed down the line to the employees. Hence, in a centralized structure, there is a heavier weight of responsibility to the decision-makers as the progression of the company depends on the judgmental capabilities of high-level managers. (Eynali et al., 2014)

Formalization structure refers to the written policies and organizational rules that formalizes the internal procedures of the organization. The objective of formalization is to control employee behavior through utilizing formalized and well-articulated policies. Hence, the decision powers

of the employees are controlled when addressing issues since most of the work procedures are to be referenced from the articulated policies and rules. (Eynali et al., 2014)

According to Daft (1998), complexity illustrates the number of managerial and staff position in the organization. It refers to the job titles, job descriptions, hierarchical levels, and other job factors that exist. Gresov & Drazin (2007), explained that there are two categories of complexity namely: Vertical, Horizontal.

Bureaucracy refers to the setting of regulations to control the efficiency and effectiveness of activities within the organization. Bureaucracy refers to the organization of social relations through administrative approach and employment of legal rules within the metes and bounds of an organization. (Grigoriou, 2013)

The influence of the organizational structure on the implementation of IT projects is affirmed by Ravasan et al. (2015) when investigating the influence of the same on the implementation of enterprise resource planning (ERP) systems. Similar to the study by Mburugu et al. (2016), the authors base their analysis on three traditional variables that define organizational structure: centralization, formalization, and complexity. The CIO position and organizational size were also added as variables of the organizational structure. Data was collected from a sample of 203 Iranian cases using questionnaires. The questionnaires were administered to project managers, key project users, and project members involved in ERP implementation. The study established that the organizational structure was a critical success factor in the implementation of ERP projects. The importance of the organizational structure in these projects was as a result of its influence in the coordination of all organizational elements to achieve the goals of a project. The results of this study differed slightly from those of Mburugu et al. (2016) since high degrees of centralization,

complexity, and formalization were shown to affect project success positively. The CIO position and organizational size dimensions were also found to have a positive and significant relationship with project success. The limitation of this study is the low generalizability of the findings and the absence of a strong theoretical background to back the research (Ravasan et al., 2015, p.39).

The significance of the organization structure in influencing the success of IT projects is affirmed by Idemudia and Gbaraka (2016) in a study involving firms from the banking sector. In the study, the authors engage 89 project managers and project team members from 10 banks involved in the implementation of software projects. Complexity, centralization, and formalization are the three organizational structure aspects that the authors seek to relate to project success. Consistent with the existing literature, the authors find the three dimensions of organizational structure to be significantly influential in determining the success of IT projects. The authors find that apart from complexity, centralization, and formalization affecting the success of software projects individually, how they relate with each other also has an effect on project success. Although it may be impossible to eliminate disagreements in the design of the organizational structure, project managers must work to ensure that all structural conflicts, including conflicts between team members, are resolved amicably. This will enhance the ability of the organizational structure in supporting the design and outcomes of the IT project (Idemudia & Gbaraka, 2016, p.22).

A study by Nandi and Kumar (2016) delved further into the impact of centralization on the success of the implementation of ERP systems. The researchers engaged in a quantitative cross-sectional survey to collect data from 51 Indian organizations that had previously engaged in the implementation of ERP systems. Structured questionnaires were used to collect data from managers in these organizations. The success of the implementation of these projects was measured in terms of the user acceptance and utilization of the ERP system. The study established

that different types of centralization affected the successful implementation of projects differently. To start with, policy-related centralization (related to policy decision-making) was found to have a negative impact on user acceptance of the projects. The inhibition of user acceptance by policy-related organizations was more predominant in large organizations than small organizations. On the other hand, work-related centralization (related the employee autonomy) had an adverse impact on the utilization of the systems. Following these negative influences of centralization, the authors conclude that a decentralized organizational structure is more appropriate to ensure the successful implementation of ERP systems than the centralized structures. This contradicts the findings by Mburugu et al. (2016) and Ravasan et al. (2015). The findings in this study, however, could be compromised by the failure of the authors to consider project-related factors while assessing the influences on the success of the ERP implementation (Nandi & Kumar, 2016, p.728).

Decentralization is also found to be more favorable in enhancing innovation in IT projects when compared to centralization. Lee et al. (2016) set out to determine how the organizational structure impacts open innovation when using a sample of 2,811 open source projects. The study finds that a decentralized decision-making structure in IT project management ensures that no good suggestion is omitted, although it may also increase the probability of accepting bad suggestions. Despite this shortcoming, the overall effect of using the decentralized structure is an enhancement of inbound and outbound innovations in open source projects. The superiority of a decentralized organizational structure in enhancing innovation owes to the increased autonomy it grants project members. The bureaucracies that may limit the creativity of project team members in a decentralized structure are fewer when compared to those in a centralized structure (Lee et al., 2016).

Luna-Reyes et al. (2008) illustrate the significance of the organizational structure on IT project success by assessing how organizational forms and institutional arrangements influence the outcomes of IT initiatives by the Mexican government. To achieve this objective, the authors collected data on a sample of government projects by interviewing project managers. It was established that institutional arrangements were critical the realization of project success of these government IT projects. In particular, the frameworks guiding collaboration between the government ministries involved in the implementation of these projects played a key role in determining overall project success. The legal, cultural and social relationships between different government agencies were the key institutional arrangement factors that influenced project success. On the other hand, bureaucracy and relationships were the most critical success factors related to organizational forms.

Doherty et al. (2010) view the relationship of organizational structure and the implementation of IT projects as two-fold. On the one hand, the implementation of IT projects leads to the modification of the organizational structure. On the other hand, the organizational structure of a firm is a critical determinant of IT project success. Data was collected from IT managers and senior managers involved in ERP implementations. It was found that the implementation of ERP systems led to the flattening of the organizational structure, decentralization of decision-making, and increased levels of horizontal integration. The changes in the organizational structure witnessed during ERP implementation were largely attributed to the need to adjust the organizational structure to fit different stages of ERP project implementation (Doherty et al., 2010, pp.116-31).

2.4.3. Organizational Communication

Communication is also a key success factor in the implementation of IT projects. When assessing the influence of communication quality on project success, Aubert et al. (2013) conducted a single case study in a large international manufacturer. The manufacturer was engaged in an ERP implementation project that entailed deploying SAP software and the related organizational changes. From the study, it was established that the influence of different aspects of communication quality depended on the success dimension under consideration. The authors note that the influence of communication quality on success can largely be attributed to the user-related attributes. The effect of the communication quality on the technical adequacy of the project outcomes was minimal. No direct influence was found between the benefits of the project and the quality of communication. Another aspect of communication that had equal importance as the communication quality was the communication content. The authors conclude that project managers should enhance the quality of their communication to different stakeholders if they are to enhance success. While communication quality may not have a direct business impact, it may have a mediated business impact through the successful implementation of projects. This study has some limitations given that its findings are based on a single case study and different patterns may be observed if other case studies are to be explored (Aubert et al., 2013, p.64).

Naqvi et al. (2011) assess the impact of stakeholder communication on the outcomes of projects in the IT industry in Islamabad, Pakistan. When conducting this research, the researchers targeted 70 heterogeneous projects from 24 software houses. The success or failure of all the projects reviewed in this study relied primarily on stakeholder communication. Specifically, it was found that 65.7% of the projects managed to remain successful following the use of effective stakeholder communication while the rest failed as a result of substandard stakeholder communication. The

communication quality was perhaps the major determinant of project success with regards to stakeholder communication. The failure to prioritize stakeholder communication as a success factor was attributed to 28.6% of the projects suffering from cost overrun, client dissatisfaction, delays, and scope creep. The authors are quick to note that other success factors should not be ignored although their effectiveness is also tagged on the nature of stakeholder communication in these projects. Unfortunately, the design of the project fails to recognize other factors as playing a role in determining the success of the 70 projects sampled. The attribution of all project successes to effective stakeholder communication and all project failure to substandard stakeholder communication constitutes biased reporting (Naqvi et al., 2011, p.5824).

According to Flannes et al. (n.d.), some factors of project completion relies heavily on the technical aspects of the project while overlooking people issues that are involved. As project requirements become heavier, the technical requirements increase accordingly, which brings heavier emphasis on the individual performance of the project team. According to the case study of Flannes and Levin (2011), the foundation of effective interpersonal skills for project members is communication. Project members must be able to effectively communicate themselves in order to address project issues and align the direction of the project to the right track. Proper procedures for information generation, collection, dissemination, and storage must be carefully practiced to correctly dispose project information. (PMI, 1996) Hence, the quality of communication control and information passing is one of the critical factor for the successful outcome of the project. It must be ensured by all stakeholders of a project that timely dissemination of information is practiced and information flows to the right people involved.

Wilfong (2014) also identifies communication quality as a key ingredient of the success of IT projects. In his study, the author sought to establish how the project environment could be

improved to enhance the success rate of IT projects. It was found that communication was an important aspect of project execution given the role it played in creating relationships within the organization. The main aspects that the respondents found most significant in influencing project success included frequency, timeliness, and precision. Virtual connectivity, in particular, was found to play a key role in determining success. Since workers were placed in different locations, holding meetings was enabled by internet connectivity, whereby they could hold a single meeting in their respective places of work. This connectivity enhanced the frequency of meetings and communication. Communication consistency, especially from the project leaders, was also cited as a key success factor in this project. Apart from building relationships, high-quality communication in IT projects is concluded as enhancing trust, particularly between team members and team leaders. The use of innovative communication technologies ensured real-time communication, which was critical to project success (Wilfong, 2014).

Communication clarity is perhaps the main attribute of stakeholder communication effectiveness that affects the success of IT projects. Ramos and Mota (2014) investigated the success and failure factors in IT projects while focusing on Brazilian companies. To do this, an exploratory survey involving IT project managers was conducted to determine how they perceived different success and failure factors. In the study, the ineffectiveness of stakeholder communication was found to arise from the lack of clarity in the language used to communicate. In particular, clients often fail to understand the technical language that is commonly used in the IT field. When IT experts try to convey information to the client using the technical language they fail. Such failures cause process dysfunctions. The situation was the same in the Brazilian context, whereby communication ineffectiveness was the most factor remembered for causing failure in IT projects. In most cases, some stakeholders did not understand the real intention of communication regarding the project.

When this happened, disagreements and organizational conflicts were commonplace. However, this study suffers the limitation of having a few respondents, which may have resulted in bias (Ramos & Mota, 2014, pp.350-57).

De Araujo (2015) affirms the findings by Ramos and Mota (2014) in a study investigating the non-technical skills that project leaders should have to ensure project success. The author found that leaders required all the skills necessary to convey important information to different project stakeholders including project members and clients. Being proficient in written and verbal communication, effective listening, clarity in passing information, and effective questioning are all observed as important skills for effective communication. Project leaders are viewed as playing an intermediary role in the execution of IT projects, which makes their need for effective communication skills greater. In particular, they are required to understand the client requirements and then use a technical language to pass this information to developers and programmers. They must also translate the technical language from developers and programmers to fit the technical skills of the client. Without effective communication at the leadership level, there is likely to be conflicts and inconsistencies between client requirements and the product delivered (de Araújo & Pedron, 2015).

In yet another study, Xie et al. (2013) found communication, to be an important factor influencing the success of IT implementation in hospitals. In the study, the authors collected data from a public hospital in Dublin County on how communication and organizational culture influenced IT project success. It is argued that communication in IT projects is complex given the need to take into account the differences in mentalities, adaptation strategies, and thought patterns of the different stakeholders involved. In particular, effective communication is necessary for adapting to changes arising from the implementation of information technologies. The internal communication should

be highly effective such that it links the organizational members and enhances the flow of knowledge. The communication channels should also be adequate for improved project success. As noted in this study, factors that limited the communication channels such as multiple layers of bureaucracy led to ineffective communication, which inhibited project success. Effective communication was also found to be a critical factor in enhancing change management efforts at all organizational ranks (Xie et al., 2013, pp.165-73).

A research study by Taylor and Woefler (2011) highlights the significance of communication in ensuring successful IT project management. As such, they identified intra and inter-organizational communication as the most critical success factors for IT projects, while realizing the importance of team leadership and team communication (Taylor and Woefler, 2011). Presence of effective communication and collaboration skills among the IT project leaders has also been recognized as prominent in making the IT project successful (Taylor and Woefler, 2011).

Further research suggests that absence of effective communication, especially for global IT projects, increases the likelihood of project failure or the achievement of moderate success (Imtiaz et al, 2013). Ineffective inter-departmental and cross-functional communication increases the risk of failure to a great extent. On the other hand, the study also cites a vast variety of projects that indulged in active and effective communication throughout the length of the IT project (Imtiaz et al, 2013). Organization-wide communication, ongoing employee feedback and frequent team meets between organizational employees and project teams are some highly favorable factors in maximizing the probability of success of IT projects (Imtiaz et al, 2013).

2.4.4. Organizational Process Assets

In order to gain a deeper understanding of the influence of organizational process assets, it is imperative to initially identify what these assets are. Existing organizational process assets help guide the IT project towards a path that can determine overall success and sustainability of IT projects. The quality of organizational processes is ensured and maintained in the presence of vigilant process assets. Process assets are also a key determinant of the success of IT projects. Handzic et al. (2016) sought to investigate how the intellectual capital of IT firms influenced the success of the IT projects that they engage in. To do this, a questionnaire is used to collect data from individuals who had participated in IT projects about their perceptions of process-related aspects, as well as customer and team-related aspects of these projects. The authors established that the intellectual capital enhanced the success of IT projects significantly. The process-related aspects were found to play an important mediating role in the project's exploitation of human and relational capital to realize project success. By adopting a knowledge perspective, IT firms enhanced the success of projects. Besides, implementing a stepwise project process to include all the key steps from planning to verification activities was critical in ensuring the attainment of the project goals as specified. Despite the strength of this study, the strength of the causal inferences may be compromised by the use convenience sampling as opposed to systematic sampling (Handzic et al., 2016, p.471).

The project management practices adopted by a firm in the implementation of the IT projects are also critical to success. Tesch et al. (2008) conducted a survey of IT/IS project management experts to determine areas where improvements were required. Process factors were found to be the main areas where IT project management was facing the most challenges. Human resource management practices during IT project management emerged the leading factor influencing the success of IT

projects. The main challenge in this area, and which contributed to project failure, was the challenge of finding qualified IT personnel and managing their skills effectively. Project scope management and project risk management ranked second and third, respectively, among the leading areas where improvements could boost the success rate of IT projects (Tesch et al., 2008, pp.43-50).

The knowledge, skills, and competencies of project managers to effecting change management also affect the success of IT projects. In a study investigating the change management competencies that determine the success of project managers in IT firms, Kendra and Taplin (2004) relied on secondary literature to identify the ones common to project managers and organizational development practitioners. From the study, it was found that the use of project management methodologies is not enough to guarantee the success of projects in the IT industry. In fact, the approaches and methods used in the change management process were found to differ. The knowledge, skills, and competencies that ensured effective change management, however, remained similar. The reliance on a systematic literature review by the authors in this article may give credibility to the findings given the reliance on the views of multiple authors. Even then, this credibility may be compromised if the secondary literature relied upon to conduct the study is of low credibility (Kendra & Taplin, 2004, pp.20-32).

Contrary to the views of Kendra and Taplin (2004), Gowan and Mathieu (2005) seem to imply that the project management methodology, as opposed to other project characteristics, is the key determinant of project success in IS projects. As per survey of 449 IS project managers, the authors sought to determine how project management practices could be used to intervene in large and complex IT projects. In the study, the authors find that technical complexity and size of a project are not good predictors of project success with regards to timely delivery. The project management

methodology used, on the other hand, was found to be a key success factor in influencing the project success. In particular, the use of a project management methodology that is both formal and problem-specific enhanced the chances of project success. The findings of this study are limited, however, since they did not consider other project performance metrics such as cost and end-user satisfaction (Gowan & Mathieu, 2005, pp.235-53).

While Kendra and Taplin (2004) and Gowan and Mathieu (2005) disagree on the extent to which project management methodologies influence IT project success, Doherty (2014) did not find it to be a critical success factor. In the study, the author collected the views of 60 IT project managers to determine their views regarding the contribution of the project management methodology and other success factors to IT success. The respondents argued that project success when using the agile project management approach did not differ significantly from the project success when using the traditional project management approach. Even then, the two project management approaches faired differently with respect to composite project success factors. For instance, while the traditional approach was better in the people aspects of a project, the agile management approach was better in client involvement aspects (Doherty, 2014, p.10).

Ali et al. (2008) relied on the survey methodology to collect data from 497 IT project managers on the factors that affected the acceptance, utilization, and perceived success of software projects. From this study, the information quality available to the software users and project complexity are the main the management and project factors influencing the utilization and perceived success of these projects. The quality of information is found to play a more significant role in influencing software utilization than personal factors and ease of use. The use of software was also determined by the past performance of project managers. Managers with high perceived performance led to high software utilization. However, this study only focuses on a few variables that can explain

software utilization. The bulk of the variables are not included, which requires that the findings are interpreted cautiously (Ali et al., 2008, pp.5-17).

It is a common assumption that project members are required to have the right technical knowledge and experience in order to be proficient team players. However, according to research, it is more vital for project success to have project members that are competent in terms of leadership, communication, and planning; all of which are people skills (PM4DEV, 2018). Flannes et al. (n.d.) stated that every project member must have the right people skills in order to share the same vision and project orientation. Leadership plays an important role and a key responsibility of a project manager to properly direct the lifecycle of the project. Through effective leadership, every project member will have a clear vision of the objectives of the project. While leadership is always associated with the project leader, the initiative of project members to practice leadership is also essential. Relative to leadership, effective team communication is also a key individual skill to have a healthy team collaboration. Most project teams spend time communicating progress reports, raising and addressing issues, and aligning project direction to the right track. It is imperative that communication channels, whether formal or informal, are sustained for the continued operability of each project member. Effective team coaching and negotiation skills are also connected with effective communication. Leadership and communication skills are the essential factors in order to produce an effective project plan.

Project development may be enhanced through learning from past projects implemented. Historical data that presents factors of project success and project failure are important to note in developing future projects. According to Vignos (2014), organizations should evaluate past projects that were implemented in order to benchmark the best practices and avoid the same mistakes that were made. The fundamental factor of project success is determined by the ability of

the organization to learn from the performance of past projects. Picket & Elliot (2007) explained that historical data collection from past projects must be made to benchmark data, metrics, and project methodologies that may be applied or removed for the development of a new project. Each historical data must be manipulated into useful information that is beneficial for the success of future projects.

Some organizational practices aimed at improving the coordination of activities in IT project management have an insignificant or negative influence on project success. As established by Ward and Daniel (2013), the use of project management offices (PMOs) as a center for coordination operations in IS projects has some negative impacts on project personnel and has no influence on the overall project success. In the study, the authors collected data from 2400 managers from the European organizations and 157 senior managers to determine how the presence and involvement of a PMO in project management affected the success of IS projects and manager satisfaction. It was found that while the presence and involvement of a PMO did not affect the overall project success, it had an adverse impact on the satisfaction of project managers. Even then, the involvement of PMOs in the project planning stage and the review stage had a positive impact on project success. On the contrary, the involvement of PMOs when the project was ongoing had a negative impact on project success (Ward & Daniel, 2013, pp.316-30).

Stewart (2010) also conducted a study to determine if the presence of a PMO had an influence on the success of IT projects. The author collected data from the IT managers, who were also PMI members. From the project, it was found that having a formal PMO did not have a significant influence on project success. The study established that the main aspect of the PMO that influenced project success was the dedication of the project members in performing the PMO functions. For this reason, it is the resources that an organization dedicated to performing PMO functions that

determined project success, as opposed to the mere presence of the PMO (Stewart, 2010, p.96). However, Francis (2015) found PMOs to be a critical success factor in IT project success. In this study, the author interviewed IT professionals in the Tanzanian banking sector. PMOs were found to be effective in enhancing staff knowledge, which directly contributed to project success (Francis, 2015, pp.33-45).

Contrary to the findings in Ward and Daniel (2013), Karimi et al. (2000) established a positive relationship between the existence of management information system (MIS) steering committees and the success of IT management. The study was based on data from 213 firms in the financial industry collected through a survey of the senior IS executives in these institutions. The study found that the level of sophistication of IT management was directly related to the presence of steering committees. The high level of the sophistication of IT management is critical to the effective use of IT resources. Firms involved in IT projects such as enterprise business planning and electronic business were shown to benefit significantly from the use of these committees. Even then, the credibility of these findings may be limited by the use of a single IT expert in each of the participating firms, thus creating a single-respondent bias threat (Karimi et al., 2000, pp.207-25).

Ngwenyama and Nielsen (2014), on the other hand, are of the view that although some process assets have a high influence on IT project success, there are approaches that can be used to reduce the negative impacts of such process assets on success. Based on a review of previous literature, the authors had established that past project failures, weak support from the top management, and a lacking formal power and influence factors were associated with project failure. They used the case study of a software process improvement implementation project characterized by these factors to determine whether it was the use of organizational influence processes could ensure success despite them. Effective change management and technological implementation targeted

and influential parties in the implementation of the project were found to be effective in overcoming the barriers to IT project success (Ngwenyama & Nielsen, 2014, pp.205-18).

Influence processes are also mediating factor in the successful implementation of IT projects. Ochara et al. (2014) set out to investigate how the implementation effectiveness of IT projects was impacted by influence processes. The interviewing method was used to collect data from 25 respondents including project leaders, the top management, and user groups of IT projects based in three African countries. Influence processes with regards to the innovation process were found to have a significant impact on project success. The negative internal environment and negative innovation attributes in the projects involved in this study contributed to their failure. Given the failure of the projects as a result of influences beyond their control, their level of motivation was negatively affected during the implementation process (Ochara et al., 2014, pp.318-37).

According to Cuthbert (2012), PMOs are value-added to the project success because it acts as a governing body to the project teams and processes. The PMO acts as a facilitator between project members and stakeholders to promote healthier collaboration to achieve better project results.

PMOs can give a lot of benefit to an organization in the aspect of achieving efficiency, reducing cost overruns, and ensuring proper resource allocation. Stewart (2010) explained that even though PMOs does not necessarily impact the project success, it is the resources that an organization dedicated to performing PMO functions that determined project success- as opposed to the mere presence of the PMO.

2.4.5. Enterprise Environmental Factors

Both internal and external enterprise environmental factors (EEFs) play a role in the success of IT projects. Aside from organizational culture and structure, the working style of employees along

with the employee skill review record is of particular significance (Khan, 2014). In addition, government regulations, market conditions, political situation, infrastructural conditions and the geographical metrics are important external EEFs that may influence the success of an IT project (Khan, 2014). Certain other EEFs include product standards, quality standards, government standards, staffing guidelines and risk databases play an equally essential role in the success of IT projects (Pradip, 2017). Internal enterprise environmental factors also influence the success of IT projects. Inal and Guner (2015) sought to investigate the impact of the learning styles and characteristics of an IT project end users that influence the implementation of the project. To achieve this objective, the study recruited 191 potential end users of a software development project and subjected them to in-class training. The study established that the success of an IT project from the end users' perspective is dependent both on their characteristics and learning styles, as well as the training practices the firm. Learners exhibiting extraversion and openness had a positive perception to training and were more likely to adopt the IT project. The training of end users was also associated with enhanced project success as it improved their attitudes towards the software developed and their willingness to adopt it. However, the study may have suffered sample selection bias given the overrepresentation of female participants (Inal & Guner, 2015, pp.535-39).

Culo and Skendrovic (2010) explains that the presence and absence of information sharing will greatly affect the progression of the project. Information sharing is a key factor in project management that is closely associated with effective project communication. According to Ramim & Lichvar (2013), the importance of information sharing is exemplified as a critical aspect of inter-team collaboration. Hence, organizations have different approaches for effective information sharing. The most effective method commonly used by project teams are project management tools

that caters electronic communication between project team and its stakeholders (Culo and Skendrovic, 2010).

In a System Development (SD) project, it is common to experience abrupt changes in project specifically on the technical requirements which also demands complex technical knowledge for project members. Therefore, the sharing of technical knowledge, project perception, and individual opinions are important factors in shaping the project output. Moreover, a top-down communication channel is an efficient approach for project management teams as it considers the individual inputs of every team member. Trust is also an important factor to consider in information sharing. According to Mennecke, Hauser, and Byrd (1992), the cohesiveness of the team is developed through continuous team interaction. As team members are able to foster healthy relationship with one another, the trust built can be used as a powerful tool for effective team-collaboration. Hence, as explained by Ramim & Lichvar (2013), healthy team collaboration through effective information sharing is crucial for the project success.

Relational norms are also critical factors influencing the success of IT projects. Muller and Martinsuo (2015) set out to investigate how relational norms during the association between the buyer and the supplier impacted the success of IT projects in different governance contexts. Based on data collected from 200 respondents comprising of IT project managers from organizations involved in supplying software and buying software for subcontracted projects, it was found that the relational norms were critical to the success of these projects. The short-term and long-term success of these projects was dependent on different aspects of the relational norms including information sharing, flexibility, and informality. In the short term, the aspects had a positive effect on the cost, time, and end-user satisfaction project performance metrics. In the long-run, on the other hand, the main these variables influenced the project's ability to achieve its purpose (Muller

& Martinsuo, 2015, pp.154-71). Fan (2013) also finds information sharing, an aspect of relational norms within an organization, as playing a major role in influencing the success of IT projects. In the study, the author assesses how the performance of emergency information systems is influenced by information sharing in Shanghai, China. Based on data from 286 employees, it was determined that information sharing played a key role in determining the operational performance of the IT system (Fan, 2013).

The organizational IT capabilities are also highly influential in determining their success. Xu et al. (2010) use a team perspective to investigate how the success of IT projects is impacted by the IT infrastructure capabilities. The authors develop a base model based on the existing literature to assess this relationship. From the study, it was concluded that IT infrastructure capabilities were positively associated with IT project success. The relationship between these two variables is partly dependent on the quality of the teamwork. The actual and the perceived IT capabilities are found to be critical in determining the achievement of project success by the project team. It is concluded that the IT infrastructure capabilities are a critical success factor to IT projects, and the quality of teamwork is a key mediating factor in this relationship (Xu et al., 2010).

In another study, Farajji and Abdolvand (2016) set out to determine how human factors influence the success of IT project success. The authors conduct a field study to determine how human factors influence the success of information technology outsourcing projects. From the study of 94 companies, it was established that the level of knowledge transfer during IT outsourcing projects determines their success. The extent to which knowledge is transferred from the vendor company to the client company determines the level of project success. This owes to the fact that high levels of knowledge transfer imply that the client company has the necessary skills to utilize the IT outsourced from the vendor company. For successful IT outsourcing projects, therefore, the client

company must ensure that the vendor company commits to high-level knowledge transfer (Faraji & Abdolvand, 2016).

The skill level of IT experts within an organization also influence the level of IT project success. Aruna (2016) sought to investigate how the team skills in software quality impacted software development. The author used data from a survey on software project managers from 46 software companies. Managers' capabilities and employee capabilities were ranked first and third, respectively, among the factors that influenced the success of software development projects. Other factors that were found to have significant influence and which were related to the internal organizational environment included the working environment, the understanding of client expectations, and the clarity of the working procedures. Even then, the credibility of the conclusions made based on the findings from this study may be affected by the lack of standardized data from the software companies involved in the study. Consequently, the study may have been characterized by reporting bias (Aruna, 2016, pp.69-79).

Training programs prior to onboarding of project members is fundamental to ensure that all project members are educated to use the best practices of project management. A training plan is applied to all project members in the pursuit to align the perspective of a project member with the business objectives, performance goals, competency goals, knowledge goals, skill goals, and attitude goals of an organization. (EWPM, 2006) In a study conducted by Andersen (2011), it was highlighted that effective training to project members prior to onboarding to the project team has delivered better performance output in project development. The study indicated that project success is highly attributable to trainings of project members. According to Iacob (2013), the abilities of project members to perform well in a project will rely heavily on their personal project experiences

and periods of practical trainings. It is practicable to recognize that training serves as the foundation of project members as it gives direction to the individual performance of each member.

The significance of high skill levels of IT experts in IT project success is cemented by the impact of training on project success. Anderson (2011) conducted a survey to determine how the success of IT projects was influenced by training. In this study, IT managers from over 515 projects were surveyed to obtain their take on how training influenced project success. This study finds that although most IT project managers strive to minimize project risks by employing appropriate technologies, employing effective consultants, and using refined project management methodologies, such projects may still fail if the team talent is overlooked. By improving the project team skills, IT managers can reduce project risks significantly. This would be achieved through increased investment in training (Anderson, 2011, pp.1-6).

Change management is also a critical enterprise environmental factor that influences the success of IT projects. As explained by de Andrade et al. (2016), the IT environment in any environment experiences rapid changes that can affect how projects are implemented. While using the case study of a large government company in Brazil, the authors find that change management plays a key role in determining the success of projects in the information technology sector. To achieve enhanced project success, organizations are urged to have effective change management practices in place to enhance the way their employees respond to organizational changes (de Andrade et al., 2016, p.23). In another study to determine the critical success factors involved in the implementation of ERP systems, Soja (2006) found that the willingness to change of the project members influence project success significantly. While reviewing the previous literature to determine the main success factors in ERP implementation, the author found that the organization must have a high willingness to change if it is to achieve project success (Soja, 2006, p.647).

The influence of an organization's willingness to change on project success can partly be attributed to the need for flexibility in the implementation of IT projects. Venkatraman and Fahd (2016) set out to determine the success factors and barriers experienced by Australian small and medium enterprises (SMEs) during the implementation of ERP systems. Based on data from Australian SMEs, the authors find that SMEs work in dynamic environments that necessitate rapid and changes. These changes are witnessed in the internal and external organizational environments but require managers to respond to them effectively. For successful ERP implementation, SMEs must have high levels of flexibility. Characteristics inherent to SMEs, such as the small number of employees, customers, and orders, make them inflexible. For this reason, the ERP implementation is inefficient (Venkatraman & Fahd, 2016, p.6).

The influence of business flexibility is also demonstrated in the study conducted by Zhang et al. (2002) to determine the success factors in the implementation of ERP systems. In the study, the authors investigate how different generic and unique factors influence the success of ERP implementation in Chinese firms using a mail survey. Business process re-engineering was one of the critical success factors that were identified given that the implementation of ERP systems entails the re-engineering of the business processes. It was found that organizations often fail to realize the extent to which they ought to re-engineer their business processes for the successful implementation of ERP systems. When this happens, ERP systems, as well as other technologically sophisticated systems, fail. It is only by enhancing their flexibility that firms can avoid such failures (Zhang et al., 2002, p.5).

According to Davis (1989), the two key factors that promotes change in IT namely: perceived usefulness and perceived ease of use. Perceived usefulness refers to effectiveness of the new system as compared to the previous system while perceived ease of use refers to the simplicity of

the system. When a new IT project has either one of the two factors, change must be implemented in the structure, culture, and work methods of an organization. Stoffers & Mordant-Dols (2015) explained that transformational leadership is linked to the success and failure of change implementation. The willingness to change of employees is dependent on the competence and the ability of their managers to promote change. In a study of Jex & Britt (2008), it was observed that transformational leaders, who manifests transformational leadership qualities, brings positive effect on the behavior of employees' acceptance to change - which also yields positive effect on the implementation stage of a new project.

2.4.6. Measures IT Project Success

The evaluation of project success involves taking into account different measures of success to determine how well they were met before determining whether a project was successful or not. According to Ika (2009), the traditional measures of project success are time, cost, and quality. In fact, the time/cost/quality triangle, also known as the iron triangle, has often been used as the true measure of project success. However, there have been instances where projects met the requirements of the iron triangle but were still considered failures. In other cases, projects fail to meet certain aspects of this success dimension but are still considered successful. For this reason, project success must look beyond adhering to these three elements (Ika, 2009, p.7). In a study to assess what defines the success of IT projects, Peslak (2012) reports that project success is a function of numerous factors that go beyond the traditional measures of time, cost, and quality. For instance, meeting user requirements and achieving "happy" users have been classified as some of the main measures of IT project success. Other measures include individual impact and organizational impact (Peslak, 2012, p.32).

The success of an IT project can be measured by the degree to which the objectives of the project have been met. According to Wit (1988), the requirements and objectives of all stakeholders must be met in order to fully measure project success. According to PMI (2013), projects must be aligned with the strategic objectives of an organization in order to achieve the long-term goals. Hence, there are three measurable criteria that must be considered when scaling project success namely: cost, schedule, and quality of work.

An effective measurement of project success must incorporate hard and soft dimensions. The hard dimensions include the tangible, objective, and measurable measures such as time while the soft dimensions are made up of subjective measures that are hard to measure such as user satisfaction. When the client organization is different from the one managing the project, success ought to be determined from both ends. On the one hand, success measures such as time, cost and quality should be assessed from the project management side while the realization of project objectives, end-user satisfaction, and the satisfaction of other stakeholders should be measured from the client's side. However, when the project has been executed internally, time, cost, quality, and user satisfaction can suffice as adequate measures of project success (Ika, 2009, pp.8,13).

Contrary to the past view of end-user satisfaction as a peripheral measure of project success, Mahmood et al. (2000) explain that this measure is widely accepted for IT projects. In the authors' view, the alarming failure rates of IT projects despite the improvements in old-style measures of project success, such as time owes to the lacking involvement of end users in project planning and execution. How the end-user perceives the ease of use and usefulness of an IT product determines its adoption and utilization. For this reason, measuring the success of such IT projects is incomplete without the consideration of the end user. Such projects can only be considered successful if the end-users view them as being of importance and easy to use (Mahmood et al., 2000, p.751).

According to Atkinson (1999), time and cost are crucial factors in the planning phase of the project and any miscalculation may lead to the disruption of the entire project life cycle. Beleiu et al. (2013) explained that standard practices suggest that project success is attainable by completing the project objectives in strict compliance to the defined project cost, time budget, and performance of each project member.

Cost management is an essential project management tool that must be implemented to ensure that project components will be achieved within the allotted project budget. According to PMI (1996), effective cost management is achievable by careful resource planning, analytic cost estimation, proper cost budgeting, and controlling the costs for the project. Through careful planning and calculated estimations, the financial resources for project may be properly controlled. It is imperative that the project budget must be controlled because any problem that may arise in project cost management can be a major hindrance for project development-or a factor for project failure.

According to Pinto (2016), project scheduling is the heart of the project planning and is a key variable to control project development. Hence, in project, the project goals may be converted into achievable working areas. The timetable created in project scheduling represents the network logic of workable areas in a project. Moreover, resource allocation will be properly handled when an effective project schedule has been established. It must be ensured by the project manager that project development adheres with the project schedule to ensure timely completion of project.

Performance is the last variable that must be measured to achieve project success. According to Center for Business (2005), project performance is measured in order to help generate management decisions that are beneficial to project development. According to Anantatmula (2010), the leadership role of a project manager is an important consideration in order to achieve better project

performance. Moreover, the study suggests that good project performance in project management entails better user satisfaction for the stakeholders. Careful planning guided by proper cost management, proper project scheduling, and proficient project performance is a fundamental tool in order to complete the project goals. Overall, the successfulness of the project is dependent on its completed project output whether it met the requirements and objectives of the stakeholders.

2.5. Conceptual Model

In this research, a high-level conceptual framework (Figure 1) has been derived that is based on the existing literature to link organizational factors, as independent variables, to the success of information technology (IT) projects, as the dependent variable. The organizational factors can fall under any of five categories proposed by Zidane et al.: "organizational cultures and styles, organizational communication, organizational structures, organizational process assets and enterprise environmental factors" (p.163). This research is based upon and builds upon the existing literature regarding the organizational factors that influence project success, especially IT project success. It is assumed that each of the independent variables acts individually to influence project success, although the overall project success is a representation of all the cumulative impacts of the individual independent variables.
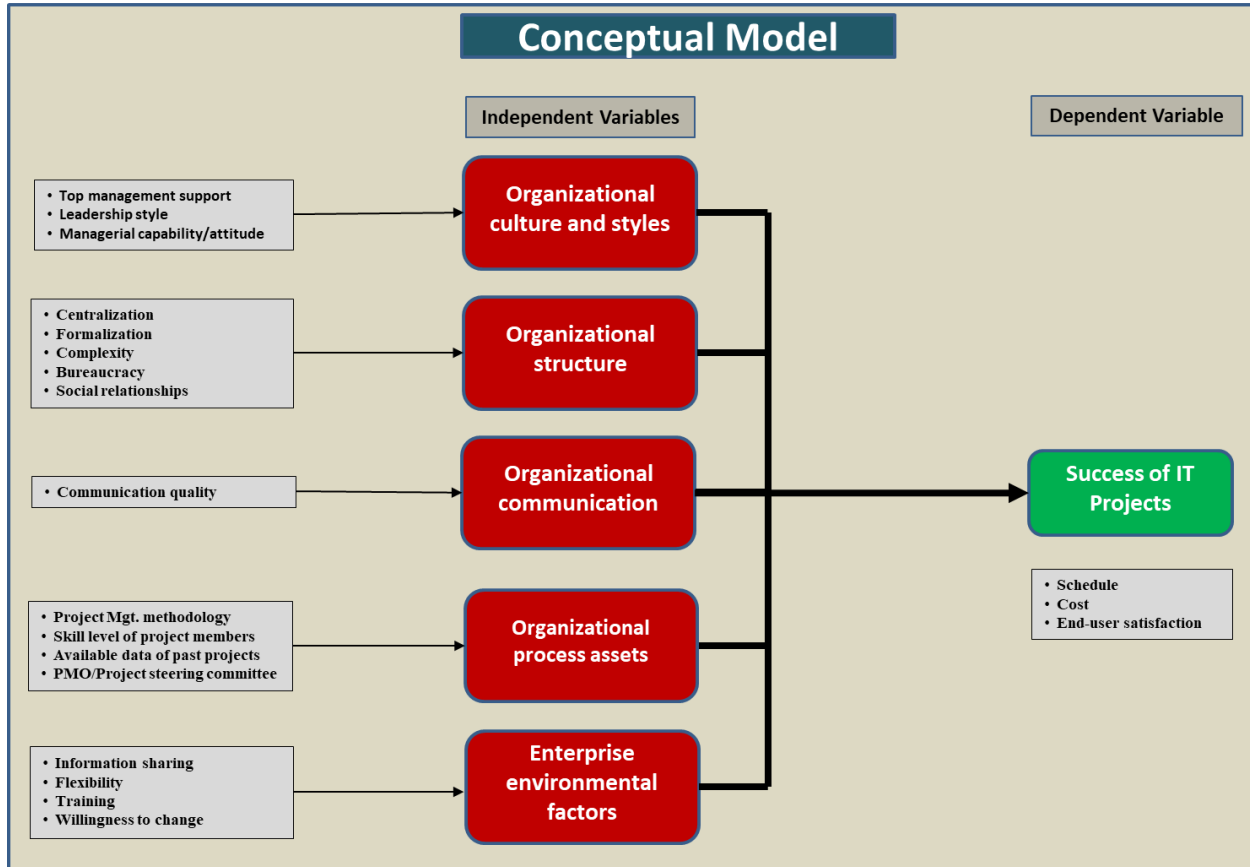
Figure 2: Conceptual Model

Each of the five independent variables is comprised of a number of critical success factors that will be considered as influencing the success of IT projects as suggested in the existing literature. Under the organizational culture and styles categorization, the main critical success factors that will be considered include the, leadership style (Chan & Mills, 2011; Ng & Walker, 2008; Shore, 2005; Gottschalk & Karlsen, 2005; Randeree & Ninan, 2011), managerial capability (Blaskovics, 2016) and top management support. On the other hand, the organizational structure category will consider centralization, formalization, complexity (Mburugu et al., 2016), bureaucracy and social relationships (Luna-Reyes et al., 2008) as the main factors determining the success of IT projects.

The organizational communication category of independent variables will focus primarily on the communication quality (Aubert et al., 2013). Since the focus of this study is on the organizational influences to project success, internal communication will be prioritized. The effectiveness of communication with external stakeholders such as the suppliers will only be considered from the project team's side. The organization process assets variable will be composed of the skill level of project members (Handzic et al., 2016; Kendra & Taplin, 2004), PMO/steering committee (Francis, 2015; Stewart, 2010; Ward & Daniel, 2013; Karimi et al., 2000), the project management methodology, and historical data of past projects (Ali et al., 2008; Gowan & Mathieu, 2005; Tesch et al., 2008) Lastly, the enterprise environmental factors category focuses on the factors within the internal environment including information sharing, flexibility, training, and willingness to change (Soja, 2006). Although the environmental factors that affect the success of IT projects include factors in the external environment (Agrawal & Haleem, 2003, p.27), this study only considers the internal environment.

The dependent variable – the success of IT project – will be considered at the project level only. The success evaluation metrics of the project were based on the existing literature discussing the success indicators in traditional projects and IT projects (Wilhite & Lord, 2006; Vivant, 1999; Misra, 2004; Hughes et al., 2004). The metrics that were adopted for this study include time (schedule), cost and end-user satisfaction.

The use of time as a success criteria is based on the adherence of the IT project to the set schedule. The assessment of project success based on cost is founded on the projects adherence to the set budget with no significant cost overruns. On the other hand, the end-user success measures are based on the reported effectiveness of the resulting IT product as assessed by the end users.

Based on the existing literature, the following hypotheses were arrived at:

- **H1:** There is a significant positive relationship between organizational culture and styles and the success of IT projects.

- **H2:** There is a significant positive relationship between organizational structure and the success of IT projects

- **H3:** There is a significant positive relationship between organizational communication and IT project success.

- **H4:** There is a significant positive relationship between organizational process factors and IT project success.

- **H5:** There is a significant positive relationship between internal enterprise environmental factors and IT project success.

- **H6:** There is a significant positive relationship between all the five categories of organizational factors and IT project success.

- **H7:** There is significant difference between the opinions of different roles (Project Managers, Team Leaders and Team members) regarding various factors affecting IT project success

This research document the findings from an analysis of data obtained by using a survey tool to appraise the relationship between the dependent and independent factors in the conceptual framework. The scope of this paper does not include the relationship between these factors and other critical success factors cited in the literature. The influence of other critical success factors, including project-related factors and stakeholder-related factors, and how they interact with the organizational critical success factors will be addressed in future research.

2.6. Chapter Summary

As identified earlier, this chapter presented a comprehensive literature review of the available empirical evidence with regards to the influence of organizational factors in successful IT project management. The chapter encompasses highly specific discussion of the key variables – organizational factors – that play a role in successful IT project management with reference to a variety of secondary sources. While focus was given to the inclusion of research articles published in peer-reviewed journals, certain other sources, including organizational websites and other organization sources have also been cited.

The chapter begins by identifying the role of organizational culture and management style in successful IT project management. In this regard, retrospect suggests that presence of a highly supportive organizational culture along with a rational management style that values inputs from lower level employees serves as a major enabler for successful IT project management and implementation. Additionally, vigilant organizational change management is also required to steer the organizational culture towards end-user acceptance.

Retrospect also suggests that an organizational structure with a clear distribution of roles and responsibilities, along with top, middle and lower level management support as critical success factors for successful IT project management. Additionally, an organizational structure with an open-door policy tends to be more beneficial for IT projects compared to the others. Centralized and formalized organization structures were specifically revealed as the most effective with regards to the success of IT projects.

Retrospective data indicates that clear and readily available organizational communication tools make it easier to implement, coordinate and complete IT projects across a vast variety of

organizations. An organization's stance towards eliminating communication barriers is also identified as a major contributing factor.

On the other hand, organizational process assets, including policies, procedures, planning and knowledge are equally important in successfully implementing IT projects. Rigorous organizational policies and procedures compel the employees towards optimum performance, thereby supporting prompt and successful completion of IT projects. Enterprise environmental factors also serve as major facilitators for successful IT project management.

This research has derived a conceptual framework (Figure 1), that is based on the existing literature review and the independent and dependent variables have been identified for further analysis.

3. CHAPTER 3   RESEARCH METHODOLOGY

3.1. Introduction

The methodology for this study emphasizes on the collection of data by conducting the surveys through questionnaire. The next step is the analysis of data using statistical tools to derive realistic results. This method is most relevant in attaining the objectives of the study. (Lin, 2011). This chapter highlights the procedures and methods used to for the preparation and finalization of closed ended questionnaire. The data was feed to the MS Excel and IBM statistical tool SPSS (Version 23) for evaluation and analysis. The quantitative data collected from 100 participants have been analyzed using statistical tools, including the SPSS software. This data will be analyzed using the Linear regression analysis approach. This is a quantitative data analysis approach that seeks to establish the existence of relationships between dependent and independent variables and the power of these relations. Regression analysis also seeks to establish whether it is possible to predict future relations between these variables and how controlling for different conditions affects the relationships (Uyanıka & Guler, 2013, pp.234-35). This data analysis approach fits the conceptual framework since it examines all the assumptions and hypotheses of the research.

3.2. Research Method

The principle research design for this study adhered to the quantitative analysis. Quantitative research methods included descriptive statistics, including regression analysis and Analysis of Variance to determine the association and influence of variables involved.

Since this was a quantitative research, selection of appropriate analytical methods was of prime significance. Among the analytical methods, descriptive analysis, Analysis of Variance (ANOVA) and Linear Regression Analysis were deemed appropriate. Reliability testing, mean, standard

deviation, skewness and kurtosis analysis were conducted as part of the descriptive statistics. These descriptive statistics are core analytical methods for any standard quantitative research that offer summaries of sample data as opposed to the variables involved. Another important reason behind selecting descriptive analytical methods was that it enables collection, organization and comparison of large numbers of discreet and non-discreet data such that it is more easily manageable and interpretable.

Involving inferential statistics to the current study was not an appropriate choice and was ruled out because inferential analysis is mainly utilized to understand the correlation between variables, and to determine the extent of randomness among the population that is under analysis. Descriptive analysis allowed in describing the gathered data such that it is easily interpreted and not subjectively evaluated prior to this study.

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SPSS version 23 was utilized as the statistical analysis software in order to analyze and interpret the quantitative data gathered through the above-mentioned techniques. To be specific, the statistical analysis included Analysis of Variance (ANOVA), reliability testing and regression analysis. Additionally, research also involved running descriptive statistics aimed at determining the dispersion and central tendency of data, mainly including mean, standard deviation and standard error along with percentages. The internal consistency of primary data was determined by virtue of reliability testing. ANOVA analysis was conducted in order to determine the extent to which the responses entailed variations. Conducting ANOVA assisted in verifying that the hypothesis is true, and that the means of all involved groups are similar. In case the hypothesis was rejected, a post ad-hoc analysis was conducted, assuming significant difference between the involved groups. ANOVA facilitated in identifying the differences underlying the role of respondents with respect to IT projects and their relative success.

Finally, regression analysis was also conducted for determination of the association between continuous variables involved, thereby facilitating hypothesis testing. For this purpose, linear regression analysis was considered more fitting, since the current study involved continuous variables.

3.3. Questionnaire Design

To fulfill the set objectives, a research study employing a quantitative research method is used in data collection. Survey approach was used to collect the data by using questionnaire, whereby questionnaires was disbursed to project managers and project team members of different IT projects. The questionnaires aimed at collecting quantitative data. A standardized, structured questionnaire is used. The standardization of the questionnaire allows for the easy comparison and contrasting of data collected from different respondents (Cargan, 2007, p.90). On the other hand, the use of structured questions is the most effective approach in collecting quantitative data (Moore, 2006, p.141). In line with the structuring of the questions, all responses are scaled on a Likert scale. This scale measures the attitudes of people to a topic. Respondents were asked to specify the extent to which they agree with a statement on the scale, with the extremes being strongly agree and strongly disagree.

The questionnaire type was semi-structured in essence. This implies that while the initial questions in the questionnaire had a predetermined sequence, mainly including the general information section, the rest of the questionnaire developed as the survey moved forward. Attention was given to inclusion of closed-ended questions, which included both, importance questions and Likert questions. The importance questions, as evident from the name, tend to gain the participant's opinion regarding their perceived importance about a specific topic. The questionnaire was mainly driven by Likert questions, to share the extent to which participants perceive the influence of the five organizational factors on IT project success. All responses are scaled at Likert scale. Likert scales apparently have many advantages. They are highly reliable, easy to administrate, perceived as an attractive model, measure diverse types of attitudes, and have produced important results in several studies (Nunnally 1978). That is why Likert scales are chosen for this study. Likert

questions, in their purest form, are questions that subjects the respondents to a range of choices, usually 5 or 7 in number as per standard research. Likert scale proves beneficial in the following ways;

- A universal method for primary data collection is utilized, which is easy to understand and interpret.

- Likert scale questions facilitate in completion of quantitative research studies, to draw analytical conclusions, graphs and other similar responses.

- Likert scale questions do not pressurize the participants to answer in agreement or disagreement, and allows them to be neutral to the concepts that they do not understand or do not want to respond to.

3.4. Questionnaire Structure

As identified earlier, both primary and secondary data were collected. For the purpose of primary data collection, a semi-structured survey questionnaire was utilized. The questionnaire was divided into 3 main parts entailing close-ended questions. The first part was specified for gathering general information about the research participants. This included names / pseudonyms, professions, years of experience with IT projects, and the time they spent managing each IT project. The second part was divided into 5 subsections comprising of questions with regards to organizational culture and management style, organizational structure organizational communication, organizational process assets and enterprise environment factors. Closed-ended questions associated with all 5 organizational factors were linked with the success of IT projects. The third part was specified fort closed-ended questions regarding Project Success in general, and comprised of a total of 3 importance questions subjecting the participants to share their own perspectives associated with project schedule, project cost and user satisfaction. An ethical consent declaration was

communicated to all the participants prior to their indulgence in this research study as a means of eliminating any ethical issues. The ethical consent highlighted that the research study purely meant for academic purposes, and that the results will not be utilized for any other purposes. Also, informing the participants about their right to complete anonymity and confidentiality of responses.

3.5. Pre-Test

Efforts have been made to comply with the standard research practice to a great extent, which is why the questionnaire was subjected to a pre-test. For this purpose, 8 random participants were selected to submit their answers against each section of the questionnaire. Pre-test proved to be quite influential in terms of determining the effectiveness of the questionnaire in fulfilling the research objectives. As anticipated, the pre-test responses proved to be adequate for descriptive and statistical analysis, thereby rendering the questionnaire as sufficient for the research objectives set forth. However, some minor amendments to the questionnaire were made related to communication section as the question was not clear to the participants. This exercise ensured that the participants fully understand the questions. Refer to the appendices section (8.2) for a copy of the final questionnaire.

3.6. Data Collection and Survey Validity

Prior to engaging in data collection through survey questionnaires, it is of utmost importance to determine the validity of the instrument. For the current research, content validity, construct validity and convergent validity were determined. Content validity was determined by carefully selecting the items of the questionnaire that aligned with the overall theoretical perspectives of this research study, such as organizational culture and management styles and their role in IT project

success. Convergent validity was determined by making sure that the questionnaire items are interrelated in accordance with the research aim and objectives. Construct validity was ensured by gathering adequate empirical evidence from peer reviewed journals, research articles and credible organizational websites.

The agreed questionnaire was circulated to project managers, team leaders and team members of different organizations there by ensuring that the participants have an experience of IT related projects.

For this study, the sample was collected from 102employees of different sectors by following two methods

- The Online questionnaire through google form was conducted.
- Personal feedbacks were taken by sending the questionnaire to the employees working in different organizations as it permits an open access to an unlimited number of respondents.

Two (2) respondents did not complete their survey fully so their responses have not considered as a part of data analysis. The total number of respondents considered for data analysis of this research is 100.

3.7. Summary

This chapter presented a detailed description of the principle research methodology utilized. The study adopted the deductive research approach, focusing on quantitative research for primary data collection, secondary data collection and descriptive data analysis. A semi-structured survey questionnaire was utilized and distributed among participants electronically through email. SPSS version 23 was utilized for running descriptive statistics, ANOVA, and linear regression analysis.

4. CHAPTER 4   DESCRIPTIVE ANALYSIS

4.1. Introduction

Data analysis was conducted using SPSS version 23 with descriptive and factor analysis. Descriptive statistics was conducted to determine the measures of central tendency and dispersion of the data i.e. to determine the distribution of data in terms of percentages, mean, standard deviation and standard error. Descriptive statistics was used in order to helps us to understand the distribution of the data in different variables. Descriptive statistics enables one to know the count and percentages of the various categories and thus it is a measure of central tendency.

4.2. Reliability Test

Reliability tests was conducted to determine the internal consistency of the data collected from the respondents. In order to ensure that the statistical methods and tools utilized to capture the data are reliable and consistent, Cronbach Alpha test was conducted to test the reliability. This test provides an overview of how the data items are closely related with one another.

The reliability analysis indicates that the organizational culture had Cronbach's Alpha (0.795), organizational structure (0.784), organizational communication (0.804), organizational process assets (0.874), enterprise environmental factors (0.773), and project success factors (0.816) as shown in table 1.

Table 1: Reliability Analysis

Variables	Number of items	Cronbach's Alpha
Organizational culture	9	.795
Organizational structure	5	.784
Organizational communication	3	.804
Organizational process assets	4	.874
Enterprise environmental factors	4	.773
Project success factors	3	.816

Generally, the Alpha value should lie between 0 and 1. If the value is closer to 1 then it signifies that there is higher internal consistency of items. The above values are close to 1 and denotes there is internal consistency and the data should be treated as reliable and precise.

4.3. Descriptive Statistics

Descriptive statistics was used to helps us understand the distribution of the data in different variables. Descriptive statistics enables us to know the count and percentages of the various categories. Thus, it is a measure of central tendency.

4.3.1. Demographic Information

Demographic variables were analyzed using descriptive statistics where frequencies were used and data is presented in figures. Majority of the respondents were aged between 35-44 years (43%), whereas 24-34 years constituted 24%, 18-24 years (23%), and 45-54 years (10%) as shown by **figure 3.**
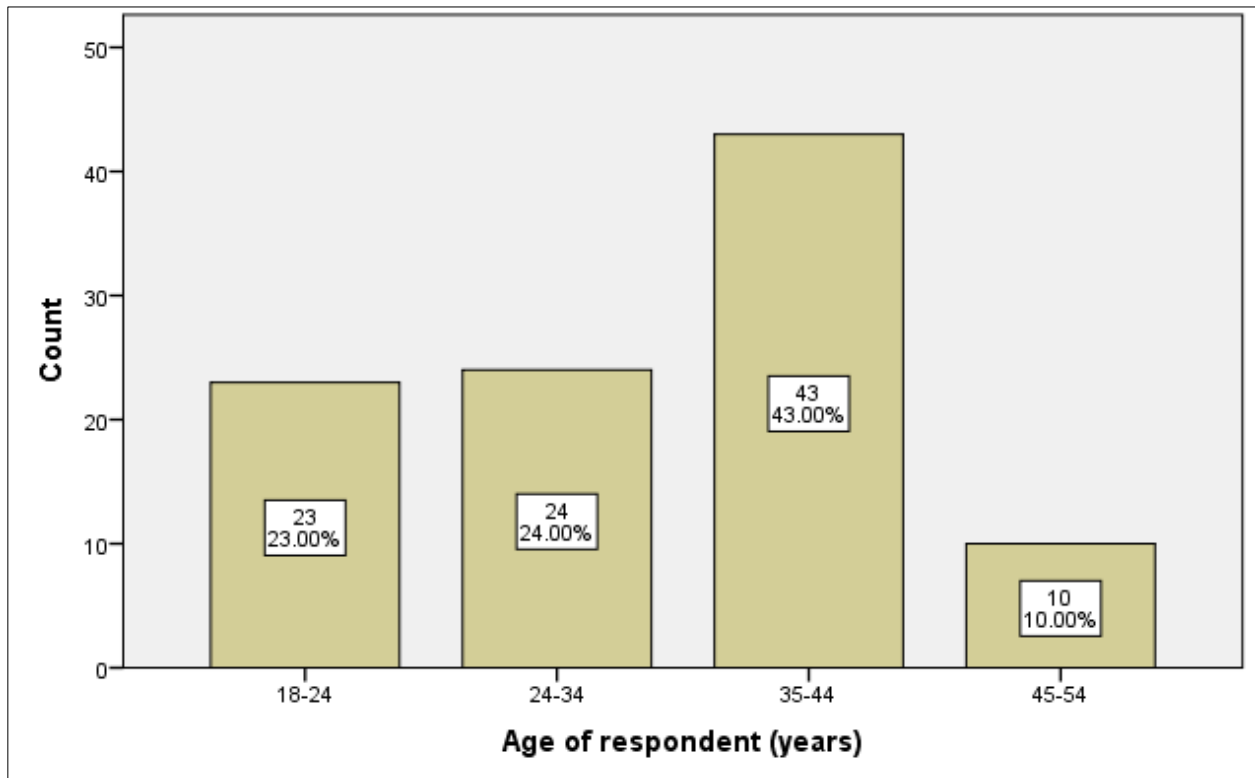
Figure 3: Age of Respondents

Most of the respondents were male (70%) while female accounted for 30% of the total population as shown by **figure 4.**
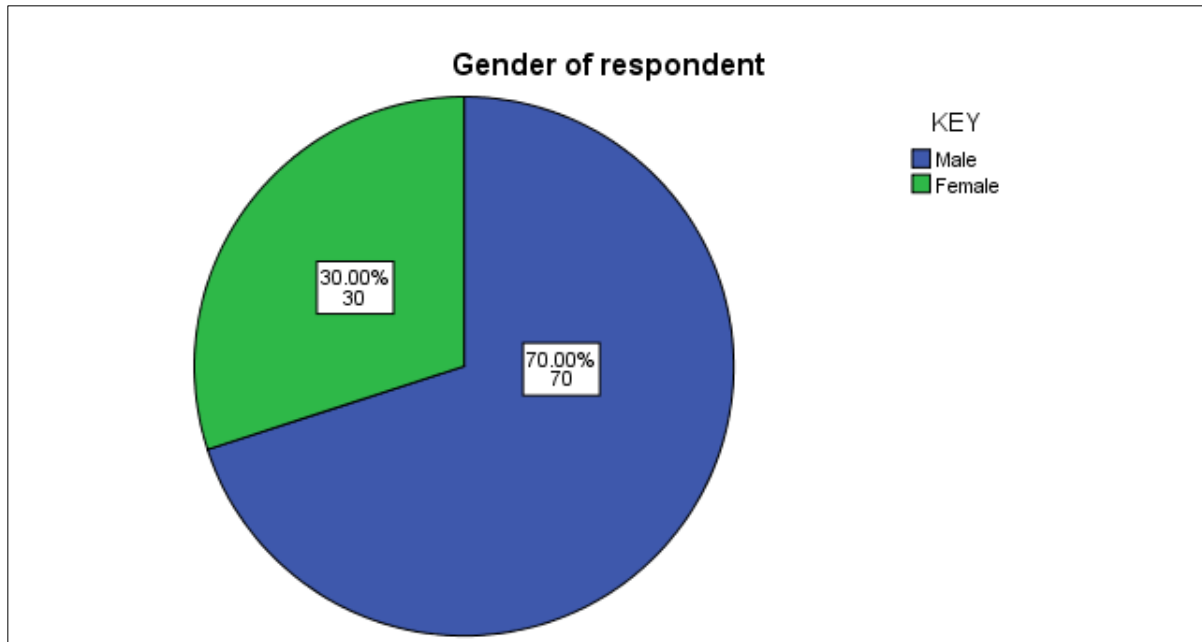
Figure 4: Gender of the respondent

Duration of the project was analyzed using frequencies where it is evident that most of the projects (52%) took 2-5 years whereas 30% of the project took 1-2 years, projects with less than one-year duration constituted 13% and above 5 years constituted 5% as shown by **figure 5.**
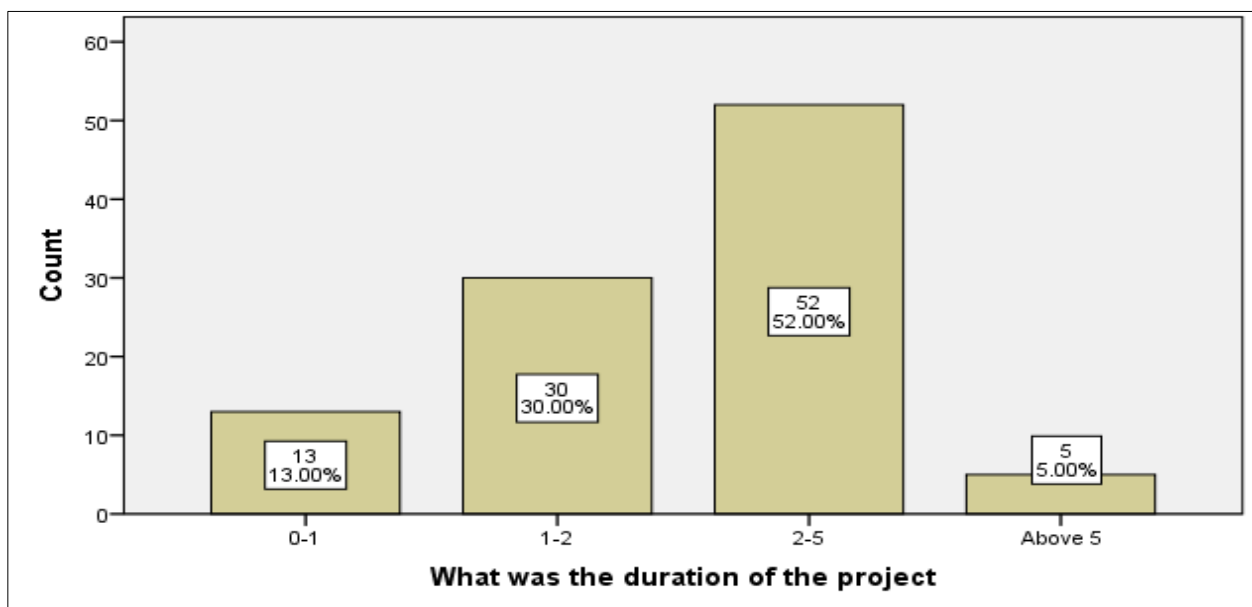
Figure 5 : Duration of the project

Most of the respondents played the role of team member (56%), whereas 26% were project managers and 18% were team leaders as shown by **figure 6**.
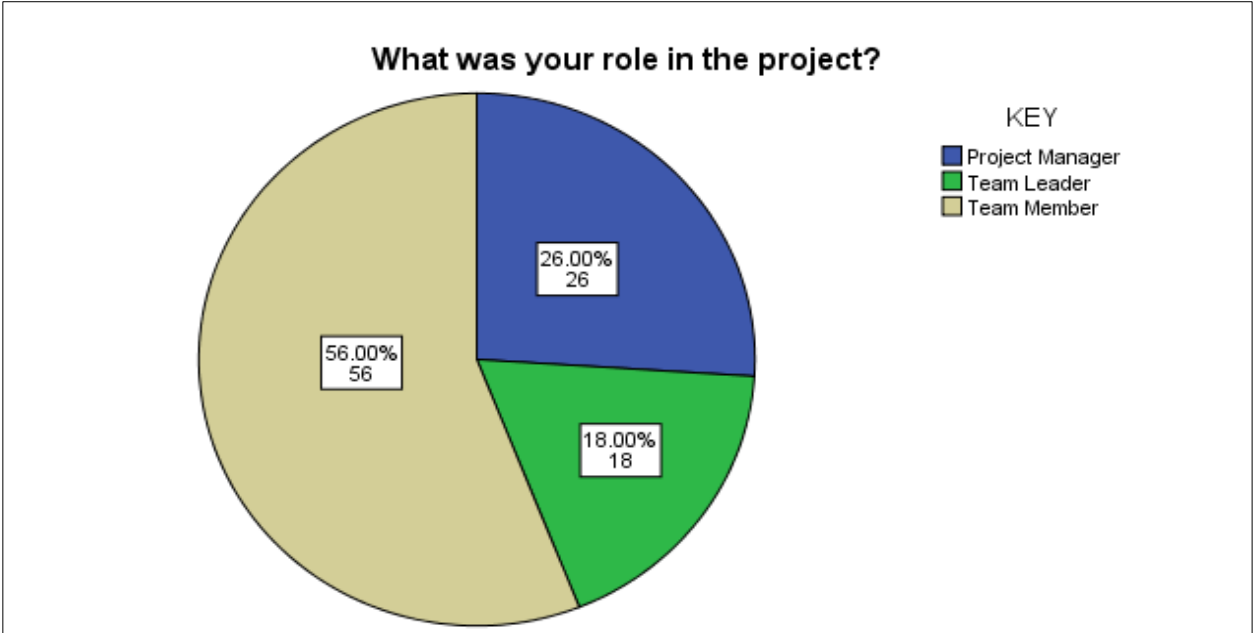
Figure 6: Role in the project

Approximately 53% of the respondents spent above 75% of the time on the project, whereas 33% of the respondents spent 51-75% of the total time on the project, 12% spent 25-50% of the total time on the project and 2% spent less than 25% of the total time on the project as shown by **figure 7**
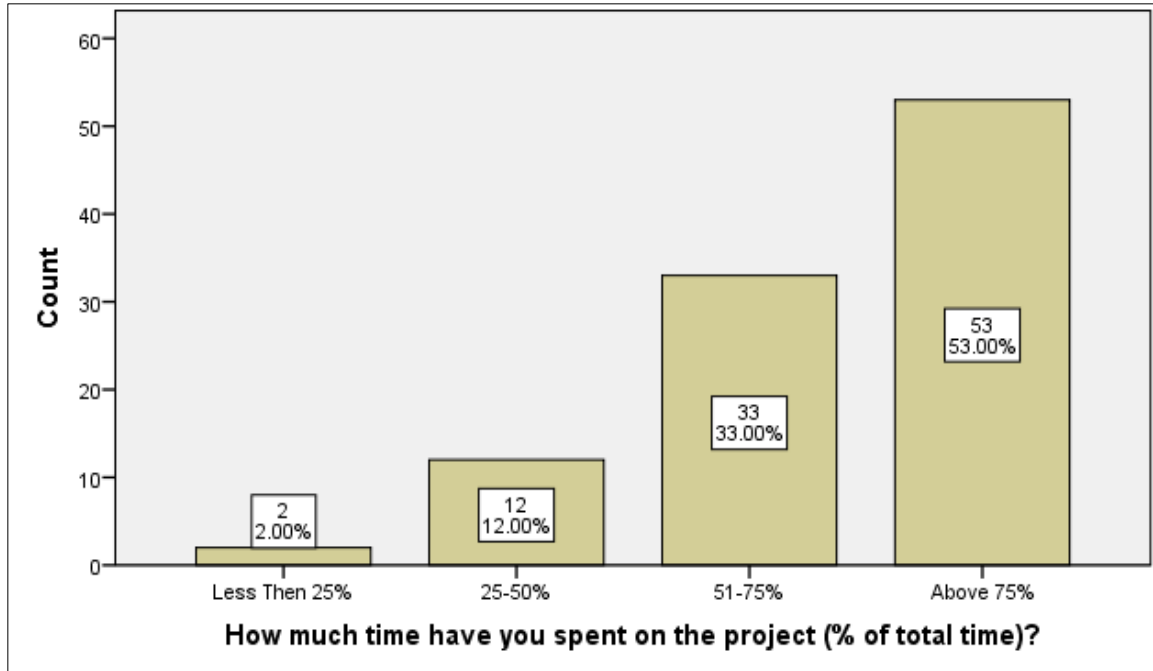
Figure 7: Percent of total time spent on project

4.3.2. Organizational culture

The mean of the variables under the organizational culture ranged from **1.56 to 1.92 indicating that most of the respondents strongly agreed and agreed on the variables**. The variables were normally distributed apart from two variables which were positively skewed as shown in table 1. Based on the normality test, organizational culture variables and its items were examined. This shows that the skewness and kurtosis fell in the range of -1.96 and 1.96 apart from 2 variables which were positively skewed (The project leader was actively involved in the activities of the subordinates (2.14) and the project manager was effective in leadership (2.317).

(Measurement scale: 1- Strongly agree; 2- Agree; 3- Neutral; 4- Disagree; and 5- Strongly disagree).

Table 2: Descriptive statistics of organizational culture

	Mean	SD	Skewness	Kurtosis
Project members were actively involved/engaged in project decision-making	1.74	.645	.304	-.677
The project leader was actively involved in the activities of the subordinates.	1.60	.603	.733	1.114
The project manager was effective in leadership.	1.56	.656	1.196	2.140
The top management was very supportive in executing the project.	1.83	.533	.261	2.317
The top management was in attendance during the project kick-off/follow-up meetings.	1.66	.607	.328	-.634
The project manager was highly focused in meeting the completion time and quality.	1.92	.580	.003	.001
The project manager was highly focused on motivating subordinates and communicating with stakeholders.	1.73	.617	.505	.783
The project manager was highly focused on the tools and assets necessary to deliver the set goals.	1.68	.695	.527	-.809
The project manager was highly focused on planning and breaking down the project into a well-built process.	1.79	.743	.511	-.501

Figure 8: Histogram showing organizational culture

Histogram shows that the mean of organizational culture is 1.72 with the standard deviation of 0.39.

Based from the data presented above, it can be deduced that most of the respondents have strongly agreed with the option "strongly agreed" for the organizational culture variables relative to IT related projects. The questions that were presented in this section are related to management approaches and how organizational culture towards project management are implemented across various organizations.

4.3.3. Organizational structure

The mean of the variables under the organizational structure ranged from 1.7 to 2.27 indicating that most of the respondents strongly agreed and agreed on variables. Based on the normality test, organizational structure variables and its items were examined. This shows that the skewness and

kurtosis fell in the range of -1.96 and 1.96. Therefore, all the variables were normally distributed as shown in table 2.

Table 3: Descriptive statistics of organizational structure

	Mean	SD	Skewness	Kurtosis
Decision-making was a preserve of a few individuals/highly centralized.	2.27	.815	.949	1.047
The procedures and rules in the project, as well as the responsibilities of different positions, were specified in writing/highly formalized.	1.90	.732	.316	-.561
The project involved a large amount of resources in terms of people, activities, and data points (the project was complex).	1.95	.642	.278	.316
The project was characterized by a hierarchy of authority and adherence to fixed rules (bureaucracy).	2.14	.829	.600	.074
There was strong interdepartmental collaboration.	1.70	.745	.702	-.335

Mean = 1.99
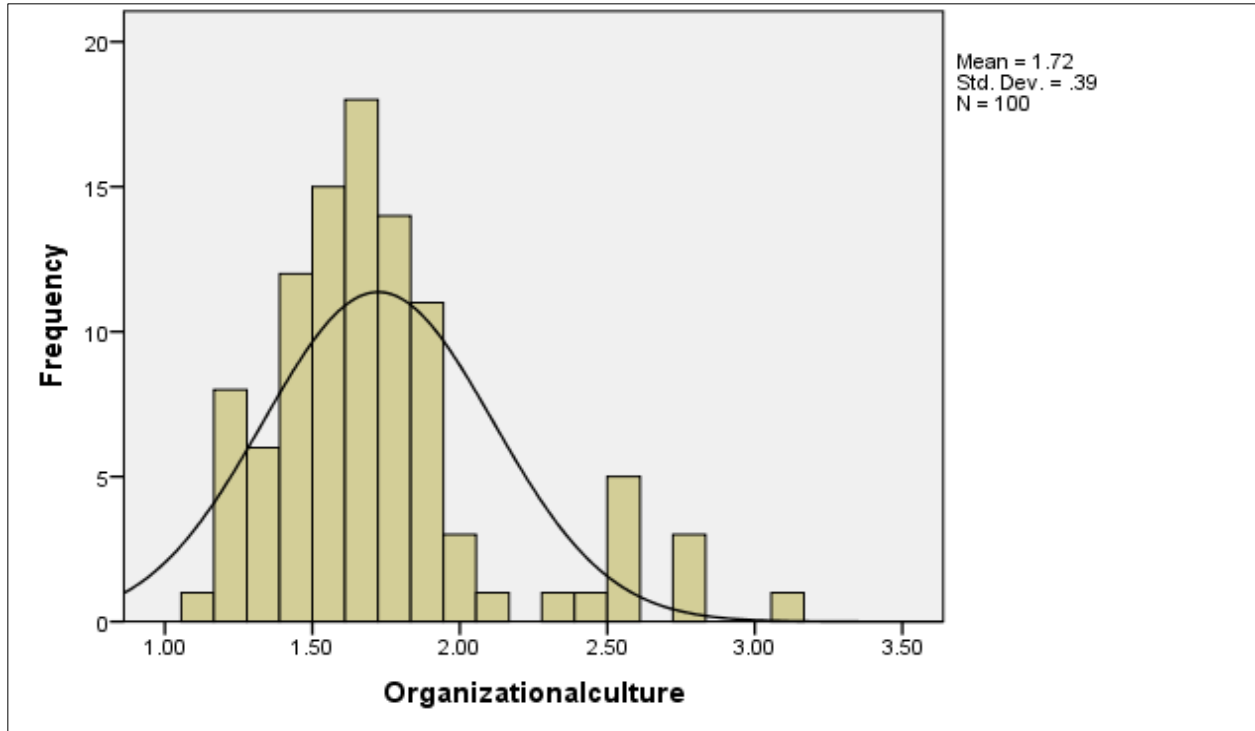Std. Dev. = .553
N = 100
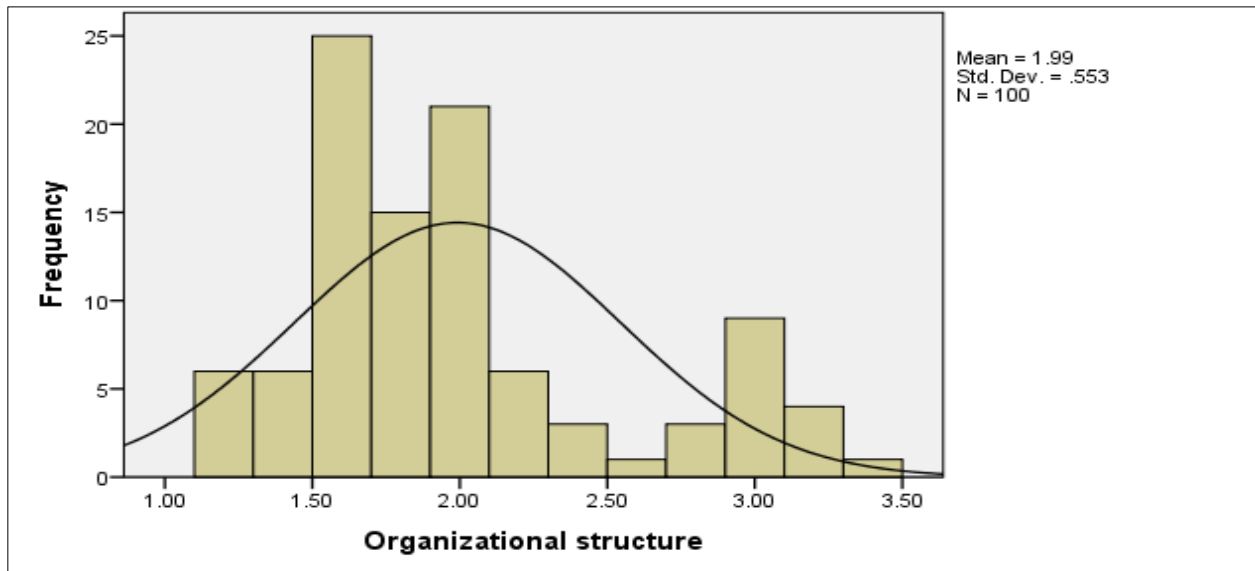
Figure 9: Histogram showing organizational structure

Histogram shows that the mean of organizational structure is 1.99 with the standard deviation of 0.553.

Based from the data presented above, it can be deduced that most of the respondents have strongly agreed with the option "strongly agreed" for the organizational structure variables relative to IT project development. Consensus of the respondents agreed with the questions on how organizational structure factors are being implemented. While most of the answers have a wide variation, the causality of the responses with the study is that the respondents came from various organizations with different implementation of organizational structures. The standardization of organizational structure will be dependent on the specific strategic goals per organization. Nevertheless, the consensus shows that critical factors for organizational structure have been established- making it a quantifiable factor in measuring IT project success.

4.3.4. Organizational communication

The mean of the variables under the organizational communication ranged from 1.74 to 2.04 indicating that most of the respondents strongly agreed and agreed on variables. Based on the normality test, organizational communication variables and its items were examined. This shows that the skewness and kurtosis fell in the range of -1.96 and 1.96. All the variables were normally distributed as shown in table 4.

Table 4: Descriptive statistics of organizational communication

|	Mean	SD	Skewness	Kurtosis
Information sharing (communication) was effective and useful to all stakeholders (client, project leadership, IT technicians, and suppliers).	1.74	.799	.991	.666
The project leader was effective in communicating technical information to the client in a way that they understood.	1.96	.634	.274	.400
There was no information breakdown in the project implementation.	2.04	.942	1.029	1.021
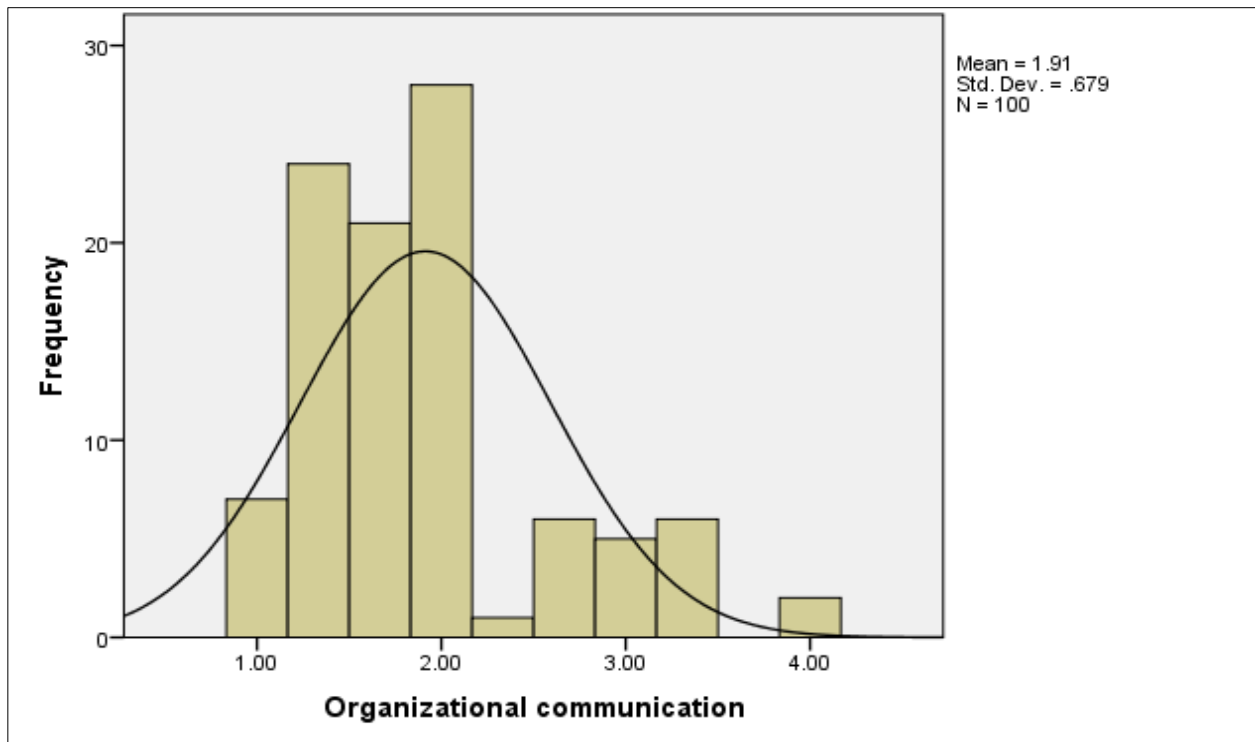
Figure 10: Histogram showing organizational communication

Histogram shows that the mean of organizational communication is 1.91 with the standard deviation of 0.679

Based from the data presented above, it can be deduced that most of the respondents have strongly agreed with the option "strongly agreed" for the organizational communication variables relative to IT projects. The questions that were presented in this section are related to management approaches and how organizational communication towards project management are implemented across different organizations. The consensus of the respondents believe that information sharing is an effective tool and communication is a must for IT related projects.

4.3.5. Organizational process assets

The mean of the variables under the organizational process assets ranged from 1.62 to 1.91 indicated that most of the respondents strongly agreed on variables as shown by table 5. Based on the normality test, organizational process assets variables and its items were examined. This shows that the skewness and kurtosis fell in the range of -1.96 and 1.96. All the variables were normally distributed.

Table 5: Descriptive statistics of the organizational process assets

	Mean	SD	Skewness	Kurtosis
The project management approach used was agile (focusing on continuous improvement).	1.77	.709	.536	-.200
The project members had high skill levels.	1.87	.646	.357	.336
Data on similar previous projects was available to the project team.	1.91	.614	.329	.793
There was a specific office/steering committee dedicated to the standardization of project-related governance processes.	1.62	.736	.895	-.012
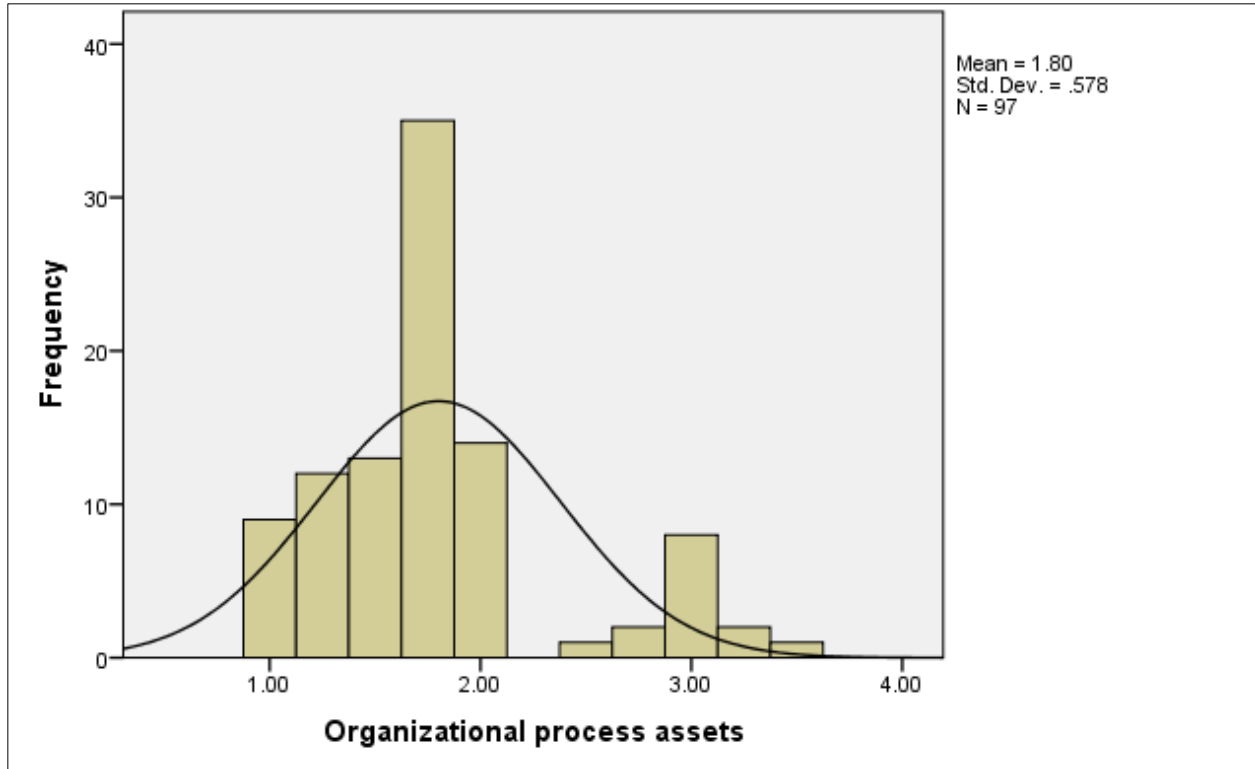
Figure 11: Histogram showing organizational process assets

Histogram shows that the mean of organizational process assets is 1.80 with the standard deviation of 0.578.

Based from the data presented above, it can be deduced that most of the respondents have strongly agreed with the option "strongly agreed" for organizational process assets variables relative to IT projects. The questions that were presented in this section are related to how organizations implement project management methodology and whether its effectiveness is relative to IT project success. The consensus of the respondents believes that project management methodology and its implementation is an effective tool to reach project success.

4.3.6. Enterprise environmental factors

The mean of the variables under the enterprise environmental factors ranged from 1.65 to 1.85 indicated that most of the respondents strongly agreed and agreed on variables. Based on the

normality test, enterprise environmental factors variables and its items were examined. This shows that the skewness and kurtosis fell in the range of -1.96 and 1.96 apart from two variables which were positively skewed (The project team underwent training related to the project (2.202) and the project team exhibited a high willingness to change (5.011)) as shown in table 6.

Table 6: Descriptive statistics of enterprise environmental factors

	Mean	SD	Skewness	Kurtosis
Useful information was regularly shared between departments and between different stakeholders.	1.85	.592	.048	-.232
The project team was flexible in responding to unanticipated changes in the operating environment, such as delays in supply, government policy, and technological advancement.	1.67	.587	.222	-.626
The project team underwent training related to the project.	1.71	.715	1.170	2.202
The project team exhibited a high willingness to change.	1.65	.783	1.738	5.011
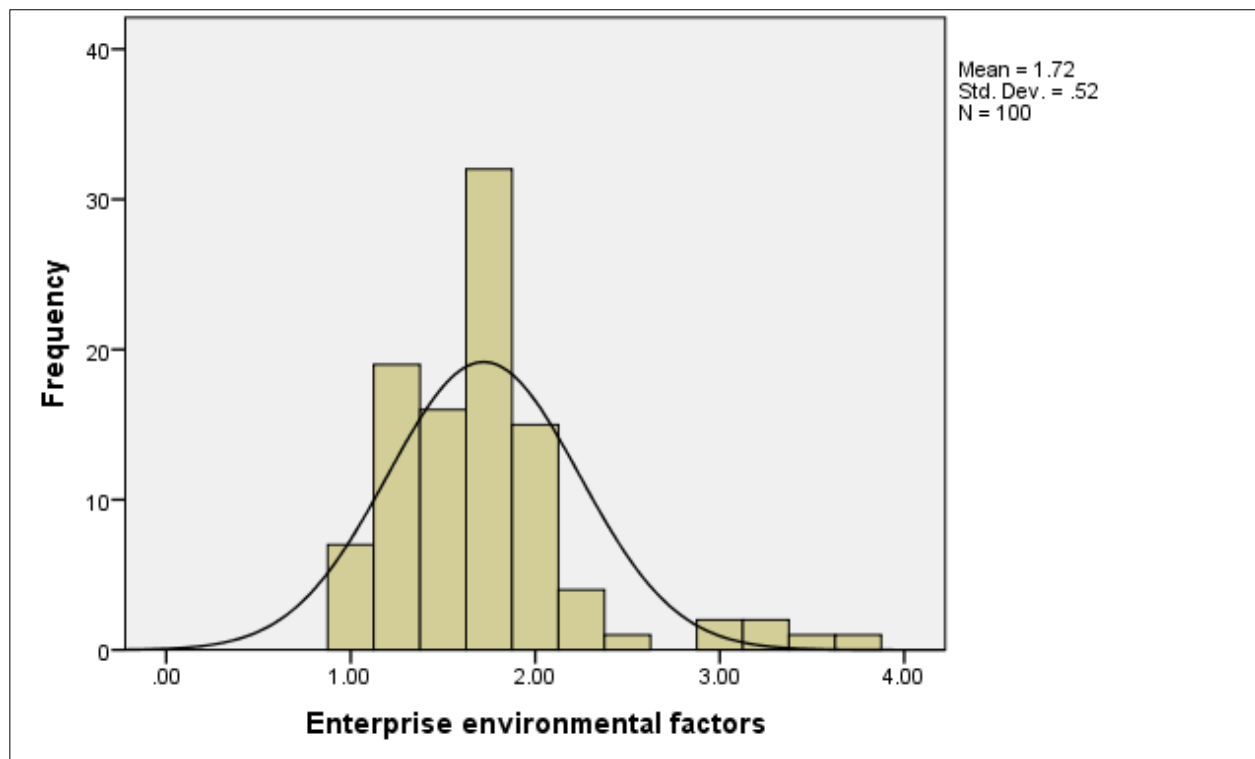
Figure 12: Histogram showing enterprise environmental factors

90

Histogram shows that the mean of enterprise environmental factors is 1.72 with the standard deviation of 0.52.

Based on the data analysis, it can be inferred that most of the respondents have strongly agreed with the enterprise environmental factors variables relative to IT related projects. The questions that were presented in this section are aimed at knowing how organizations formulate project in consideration of the individual participation of project members. The consensus of the respondents believes that the variables in enterprise environmental factors is a standard practice for IT related projects.

4.3.7. Project Success factors

The mean of the variables under the project success factors ranged from 1.80 to 2.04 indicated that most of the respondents strongly agreed and agreed on variables. Based on the normality test, project success factors variables and its items were examined. This shows that the skewness and kurtosis fell in the range of -1.96 and 1.96. Therefore, all the variables of the project success factors were normally distributed. The questions that were presented in this section aims to know whether project success variables (cost, time, and user satisfaction) are being considered by various organizations for IT related projects. The consensus of the respondents believes that the variables in project success factors is a standard practice for IT related projects.

Table 7: Project success factors

	Mean	SD	Skewness	Kurtosis
The project adhered to the schedule.	1.82	.796	.949	1.478
The project did not have cost overruns.	2.04	.530	.045	.656
There was high user satisfaction with the project output.	1.80	.711	.310	-.969
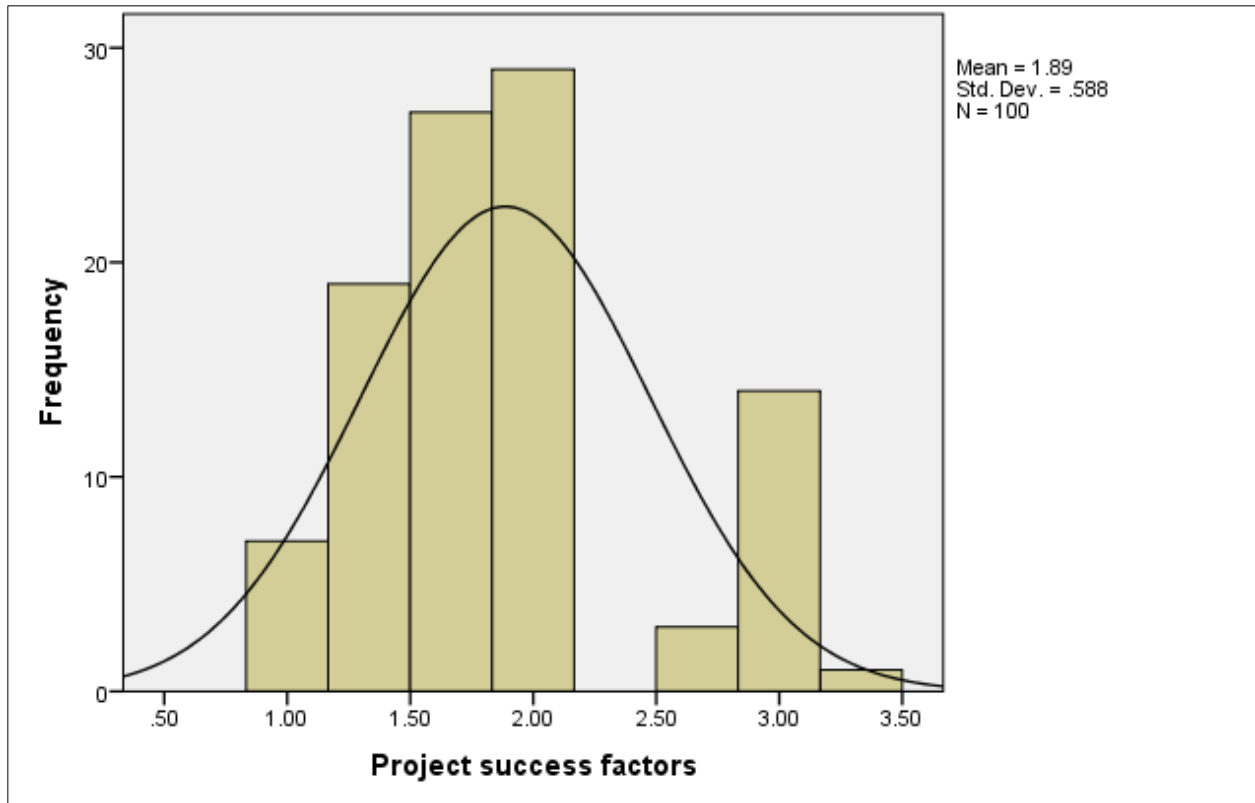
Figure 13: Histogram showing project success factors

Histogram shows that the mean of project success factors is 1.89 with the standard deviation of 0.588.

Based from the data presented above, it can be deduced that most of the respondents have either strongly agreed or agreed with the project success factors variables relative to IT project development. The questions that were presented in this section aims to know whether project success variables (cost, time, and performance) are being considered by various organizations in project development. The consensus of the respondents believes that the variables in project success factors is a standard practice in project development.

4.4. Summary

The purpose of this chapter was to present the overall results and findings from data analysis using descriptive statistics by using SPSS version 23. The descriptive analysis provides a narrative and graphical format of the data wherein survey results are analyzed and compared with the literature.

Reliability test provides the details of internal consistency of the data collected for this research. Cronbach Alpha test was conducted to determine the reliability of the data. The main purpose was to test the confidence level. The results of reliability test confirmed that the data is reliable and acceptable

5. CHAPTER 5   REGRESSION, ANOVA ANALYSIS & HYPOTHESIS TESTING

5.1. Introduction

Regression analysis determines the relationship between continuous variables and thus test the hypotheses of the study. Linear regression fits in our research because our variables are continuous in nature (ordinal or interval scale). Linear regression is used to specify the nature of the relation between two variables. Regression analysis is used to indicate the strength of the relationship between the variables and to know the direction of the relationship either positive or negative. Regression analysis also helps us to come up with the linear equation which is important in predicting the dependent variable.

5.2. Regression Analysis Results

5.2.1. Testing Hypothesis 1

H1: There is a significant positive relationship between organizational culture and styles and the success of IT projects.

Table 8: Model summary of organizational culture and project success

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.048[a]	.002	-.008	.59068

a. Predictors: (Constant), Organizational culture and styles

The regression model summary indicates that organizational culture predicts project success of IT projects by 0.2%.

Table 9: ANOVA table between organizational culture and project success

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.078	1	.078	.225	.636[b]
	Residual	34.193	98	.349		
	Total	34.271	99			

a. Dependent Variable: Project success factors

b. Predictors: (Constant), Organizational culture

The ANOVA table indicates that organizational culture is not satisfactory with the F-value (1, 98) = 0.225, p>0.05.

Table 10: Regression coefficient between organizational culture and project success

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.762	.269		6.552	.000
	Organizational culture	.072	.152	.048	.474	.636

a. Dependent Variable: Project success factors

- From the analysis, it is evident that the relationship between organizational culture and project success is insignificant at the t-value = 0.474, p>0.05 as shown by table 10 above. The above results signify that that there is no acceptable association between Organizational culture and project success. Therefore, hypothesis that the organizational culture and management styles play a significant role in influencing the success of IT projects has been rejected.

5.2.2. Testing Hypothesis 2

H2: There is a significant positive relationship between organizational structure and the success of IT projects.

Table 11: Model summary between organizational structure and project success factors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.347[a]	.120	.111	.55467

a. Predictors: (Constant), Organizational structure

The regression model summary indicates that organizational structure predicts project success by 12%.

Table 12: ANOVA table between organizational structure and project success factors

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	4.120	1	4.120	13.393	.000[b]
1	Residual	30.151	98	.308		
	Total	34.271	99			

a. Dependent Variable: Project success factors

b. Predictors: (Constant), Organizational structure

The ANOVA table shows that the regression analysis is satisfactory and further analysis can be conducted with F-value = 13.393, $p < 0.01$ as shown by table above.

Table 13: Regression coefficients between organizational structure and project success factors

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.152	.208		5.534	.000
Organizational structure	.369	.101	.347	3.660	.000

a. Dependent Variable: Project success factors

- The regression coefficient table indicates that there is significant positive relationship (0.347) between organizational structure and project success factors with the t-value = 3.66, p<0.01. The linear equation will be **y=1.152 + 0.369x.** This indicates that with one factor (organizational structure) we can predict the project success factors using the above linear equation where y is project success factors and x is organizational structure. The above results signify that that there is an acceptable association between Organizational structure and project success. Therefore, the hypothesis that there is a significant positive relationship between organizational structure and the success of IT projects has been proved and accepted.

5.2.3. Testing Hypothesis 3

H3: There is a significant positive relationship between organizational communication and IT project success.

Table 14: Model summary between organizational communication and project success factors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.287[a]	.082	.073	.56651

a. Predictors: (Constant), Organizational communication

The regression model summary indicates that organizational communication predicts project success by 8.2%.

Table 15: ANOVA table between organizational communication and project success factors

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.820	1	2.820	8.786	.004
	Residual	31.451	98	.321		
	Total	34.271	99			

a. Dependent Variable: Project success factors

b. Predictors: (Constant), Organizational communication

The ANOVA table shows that the regression analysis is satisfactory and further analysis can be conducted with F-value = 8.786, $p < 0.01$ as shown by table above.

Table 16: Regression coefficients between organizational communication and project success factors

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.411	.170		8.299	.000
Organizational communication	.248	.084	.287	2.964	.004

a. Dependent Variable: Project success factors

The regression coefficient table indicates that there is significant positive relationship (0.287) between organizational communication and project success factors with the t-value = 2.964, $p < 0.01$. The linear equation will be **y=1.411 + 0.248x**. This indicates that with one factor (organizational communication) we can predict the project success factors using the above linear equation where y is project success factors and x is organizational communication. The above results signify that that there is an acceptable association between Organizational communication and project success. Therefore, the hypothesis that there is a significant positive relationship between organizational communication and the success of IT projects has been proved and accepted.

5.2.4. Testing Hypothesis 4

H4: There is a significant positive relationship between organizational process factors and IT project success.

Table 17: Regression summary between organizational process assets and project success factors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.353[a]	.125	.116	.56064

a. Predictors: (Constant), Organizational process assets

The regression model summary indicates that organizational process assets predicts project success by 12.5%.

Table 18: ANOVA table between organizational process assets and project success factors

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	4.262	1	4.262	13.559	.000[b]
1	Residual	29.860	95	.314		
	Total	34.121	96			

a. Dependent Variable: Project success factors

b. Predictors: (Constant), Organizational process assets

The ANOVA table shows that the regression analysis is satisfactory and further analysis can be conducted with F-value = 13.559, p<0.001 as shown by table above.

Table 19: Regression coefficients between organizational process assets and project success factors

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.237	.187		6.613	.000
	Organizational process assets	.364	.099	.353	3.682	.000

a. Dependent Variable: Project success factors

The regression coefficient table indicates that there is significant positive relationship (0.353) between organizational process assets and project success factors with the t-value = 3.682, $p<0.001$. **The linear equation will be y=1.237 + 0.364x.** This indicates that with one factor (organizational process assets) we can predict the project success factors using the above linear equation where y is project success factors and x is organizational process assets. The above results signify that that there is an acceptable association between Organizational process assets and project success. Therefore, the hypothesis that there is a significant positive relationship between organizational process factors and IT project success has been proved and accepted.

5.2.5. Testing Hypothesis 5

H5: There is a significant positive relationship between internal enterprise environmental factors and IT project success.

Table 20: Model summary between enterprise environmental factors and project success

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.135	.018	.008	.58598

a. Predictors: (Constant), Enterprise environmental factors

The regression model summary indicates that enterprise environmental factors predicts project success by 1.8%.

Table 21: ANOVA table between enterprise environmental factors and project success

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	.620	1	.620	1.807	.182[b]
1	Residual	33.651	98	.343		
	Total	34.271	99			

a. Dependent Variable: Project success factors

b. Predictors: (Constant), Enterprise environmental factors

The ANOVA table shows that the regression analysis is not satisfactory with F-value = 1.807, p>0.05 as shown by table above.

Table 22: Regression coefficients between enterprise environmental factors and project

success

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.625	.203		7.990	.000
	Enterprise environmental factors	.152	.113	.135	1.344	.182

a. Dependent Variable: Project success factors

The regression coefficient table indicates that there is insignificant positive relationship between enterprise environmental factors and project success factors with the t-value = 1.344, p>0.05.

The above results signify that that there is no acceptable association between Enterprise environmental factors and project success. Therefore, the hypothesis that there is a significant positive relationship between internal enterprise environmental factors and IT project success has been rejected.

5.2.6. Testing Hypothesis 6

H6: There is a significant positive relationship between all the five categories of organizational factors and IT project success.

Table 23: Regression summary between all organizational factors and project success factors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.450[a]	.203	.159	.54683

a. Predictors: (Constant), Enterprise environmental factors, Organizational structure,

Organizational culture, Organizational process assets, Organizational communication

The regression model summary indicates that all the factors predicts project success by 20.3%.

Table 24: ANOVA table between all organizational factors and project success factors

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.910	5	1.382	4.622	.001[b]
	Residual	27.211	91	.299		
	Total	34.121	96			

a. Dependent Variable: Project success factors

b. Predictors: (Constant), Enterprise environmental factors, Organizational structure,

Organizational culture, Organizational process assets, Organizational communication

The ANOVA table shows that the regression analysis is satisfactory and further analysis can be conducted with F-value = 4.622, p<0.01 as shown in the table above.

Table 25: Regression coefficients between all organizational factors and project success factors

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.994	.312		3.185	.002
	Organizational culture	-.125	.159	-.082	-.789	.432
	Organizational structure	.232	.112	.218	2.058	.042
	Organizational communication	.154	.097	.173	1.586	.116
	Organizational process assets	.264	.110	.256	2.401	.018
	Enterprise environmental factors	-.070	.125	-.061	-.558	.578

a. Dependent Variable: Project success factors

The regression coefficient table indicates that there is significant relationship between organizational structure (0.218) and project success factors at t-value 2.058, p<0.05; and significant positive relationship (0.256) between organizational process assets and project success factors with the t-value = 2.401, p<0.05. The other variables are insignificant.

The linear equation will be:

$$y = 0.994 - 0.125x + 0.232x_1 + 0.154x_2 + 0.264x_3 - 0.070x_4.$$ This indicates that with the below factors we can predict the project success factors using the above linear equation.

Where:

y is project success factors

x= organizational culture

x_1= organizational structure

x_2= organizational communication

x_3= organizational process assets

x_4= enterprise environmental factors

Therefore, it is established that organizational process assets play a significant role in project success factors as compared to other factors. This indicates that when the variables are combined the organizational process assets plays a major role as compared to other variables whereas the other variables play each role individually. This hypothesis has been tested and rejected as all organizational factors are not playing a significant role.

5.3. ANOVA test between roles played in the project and different factors

ANOVA test was conducted to determine the significant mean difference between independent or factor variable (categorical) and dependent variables (continuous) in order to know which group had a significant difference.

5.3.1. Testing Hypothesis 7

H7: There is significant difference between the opinions of different roles (Project Managers, Team Leaders and Team members) regarding various factors affecting IT project success.

Table 26: Descriptive tests of different roles on factors

		N	Mean	SD	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Organizational culture	Project Manager	26	1.7991	.49990	.09804	1.5972	2.0011
	Team Leader	18	1.5123	.34117	.08041	1.3427	1.6820
	Team Member	56	1.7560	.32510	.04344	1.6689	1.8430
	Total	100	1.7233	.38989	.03899	1.6460	1.8007
Organizational structure	Project Manager	26	2.4615	.59805	.11729	2.2200	2.7031
	Team Leader	18	1.6444	.31849	.07507	1.4861	1.8028
	Team Member	56	1.8857	.44942	.06006	1.7654	2.0061
	Total	100	1.9920	.55335	.05534	1.8822	2.1018
Organizational communication	Project Manager	26	2.2051	.73076	.14331	1.9100	2.5003
	Team Leader	18	1.6852	.78775	.18567	1.2934	2.0769
	Team Member	56	1.8512	.57882	.07735	1.6962	2.0062
	Total	100	1.9133	.67937	.06794	1.7785	2.0481
	Project Manager	26	2.1923	.69393	.13609	1.9120	2.4726

		N	Mean	Std. Dev	Std. Error	Lower	Upper
Organizational process assets	Team Leader	15	1.5833	.59512	.15366	1.2538	1.9129
	Team Member	56	1.6786	.41755	.05580	1.5667	1.7904
	Total	97	1.8015	.57841	.05873	1.6850	1.9181
Enterprise environmental factors	Project Manager	26	2.0000	.66332	.13009	1.7321	2.2679
	Team Leader	18	1.5139	.51071	.12038	1.2599	1.7679
	Team Member	56	1.6563	.38895	.05197	1.5521	1.7604
	Total	100	1.7200	.52015	.05201	1.6168	1.8232
Project success factors	Project Manager	26	2.3077	.53269	.10447	2.0925	2.5229
	Team Leader	18	1.5370	.47333	.11156	1.3017	1.7724
	Team Member	56	1.8036	.54226	.07246	1.6584	1.9488
	Total	100	1.8867	.58836	.05884	1.7699	2.0034

The test indicates that most of the participants agreed on organizational culture but they had different views on other factors according to the mean as shown by the table above. From the ANOVA table below it is evident that project manager, team leader, and team member had similar views on organizational culture with the $p > 0.05$. They had different opinions and views on organizational culture ($F_{(2,97)} = 3.49$, $p < 0.05$); organizational structure (F-value $(2,97) = 19.020$, $p < 0.001$); organizational communication (F-value $(2,97) = 3.858$, $p < 0.05$); organizational process assets (F-value $(2,97) = 9.778$, $p < 0.01$); enterprise environmental factors (F-value $(2,97) = 6.188$, $p < 0.01$); and project success factors (F-value $(2,97) = 12.89$, $p < 0.001$).

From the above analysis, it is presumed that project managers were more conversant with the project factors such as organizational culture, organizational structure, organizational communication, organizational process assets, enterprise environmental factors and project

success factors as compared to team leader and team member. As per the results, this hypothesis has been rejected.

Table 27: ANOVA table

		Sum of Squares	df	Mean Square	F	Sig.
Organizational culture	Between Groups	1.010	2	.505	3.490	.034
	Within Groups	14.039	97	.145		
	Total	15.049	99			
Organizational structure	Between Groups	8.539	2	4.270	19.020	.000
	Within Groups	21.775	97	.224		
	Total	30.314	99			
Organizational communication	Between Groups	3.367	2	1.683	3.858	.024
	Within Groups	42.326	97	.436		
	Total	45.693	99			
Organizational process assets	Between Groups	5.531	2	2.766	9.778	.000
	Within Groups	26.586	94	.283		
	Total	32.117	96			
Enterprise environmental factors	Between Groups	3.031	2	1.515	6.188	.003
	Within Groups	23.754	97	.245		
	Total	26.785	99			
Project success factors	Between Groups	7.196	2	3.598	12.890	.000
	Within Groups	27.075	97	.279		
	Total	34.271	99			

Post hoc analysis was conducted to determine the significant difference between different groups of the respondents on various aspects of the study. For instance, post hoc analysis was conducted

to determine the significant difference between different roles in the study and their opinions regarding the various factors affect project success. Post hoc analysis indicates that there was significant difference on the organizational culture between project manager and team leader (mean difference = 0.2868, p<0.05); organizational structure between project manager and team leader (mean difference = 0.81709, p<0.01); project manager and team member (mean difference = 0.5758, p<0.05).

Table 28: TUKEY post hoc analysis

Dependent Variable	(I) What was your role in the project	(J) What was your role in the project	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Organizational culture	Project Manager	Team Leader	.28680*	.11665	.041	.0091	.5645
		Team Member	.04319	.09028	.882	-.1717	.2581
	Team Leader	Project Manager	-.28680*	.11665	.041	-.5645	-.0091
		Team Member	-.24361	.10308	.052	-.4890	.0017
	Team Member	Project Manager	-.04319	.09028	.882	-.2581	.1717
		Team Leader	.24361	.10308	.052	-.0017	.4890
Organizational structure	Project Manager	Team Leader	.81709*	.14528	.000	.4713	1.1629
		Team Member	.57582*	.11244	.000	.3082	.8435
	Team Leader	Project Manager	-.81709*	.14528	.000	-1.1629	-.4713
		Team Member	-.24127	.12837	.150	-.5468	.0643
	Team Member	Project Manager	-.57582*	.11244	.000	-.8435	-.3082
		Team Leader	.24127	.12837	.150	-.0643	.5468
Organizational communication	Project Manager	Team Leader	.51994*	.20255	.031	.0378	1.0020
		Team Member	.35394	.15676	.067	-.0192	.7271

	Team Leader	Project Manager	-.51994*	.20255	.031	-1.0020	-.0378
		Team Member	-.16601	.17898	.624	-.5920	.2600
	Team Member	Project Manager	-.35394	.15676	.067	-.7271	.0192
		Team Leader	.16601	.17898	.624	-.2600	.5920
	Project Manager	Team Leader	.60897*	.17243	.002	.1983	1.0196
		Team Member	.51374*	.12621	.000	.2132	.8143
Organizational process assets	Team Leader	Project Manager	-.60897*	.17243	.002	-1.0196	-.1983
		Team Member	-.09524	.15462	.812	-.4634	.2730
	Team Member	Project Manager	-.51374*	.12621	.000	-.8143	-.2132
		Team Leader	.09524	.15462	.812	-.2730	.4634
	Project Manager	Team Leader	.48611*	.15174	.005	.1249	.8473
		Team Member	.34375*	.11744	.012	.0642	.6233
Enterprise environmental factors	Team Leader	Project Manager	-.48611*	.15174	.005	-.8473	-.1249
		Team Member	-.14236	.13408	.540	-.4615	.1768
	Team Member	Project Manager	-.34375*	.11744	.012	-.6233	-.0642
		Team Leader	.14236	.13408	.540	-.1768	.4615
	Project Manager	Team Leader	.77066*	.16200	.000	.3851	1.1562
		Team Member	.50412*	.12538	.000	.2057	.8026
Project success factors	Team Leader	Project Manager	-.77066*	.16200	.000	-1.1562	-.3851
		Team Member	-.26653	.14315	.155	-.6073	.0742
	Team Member	Project Manager	-.50412*	.12538	.000	-.8026	-.2057
		Team Leader	.26653	.14315	.155	-.0742	.6073

*. The mean difference is significant at the 0.05 level.

There was significant difference on the organizational communication between project manager and team leader (mean difference = 0.52, p<0.01). Post hoc tests also indicates that there was significant difference on the organizational process assets between project manager and team

leader (mean difference = 0.609, p<0.01); project manager and team member (mean difference = 0.544, p<0.05). There was also significant difference on the enterprise environmental factors between project manager and team leader (mean difference = 0.486, p<0.01); project manager and team member (mean difference = 0.344, p<0.05). There was significant difference on the project success factors between project manager and team leader (mean difference = 0.771, p<0.01); project manager and team member (mean difference = 0.504, p<0.001).

This indicates that project managers were more conversant with the project factors such as organizational structure, organizational communication, organizational process assets, enterprise environmental factors and project success factors as compared to team leader and team member. As per the above results, this hypothesis has been accepted.

5.4. Summary

The purpose of this chapter was to present the overall results and findings from data analysis, including the results of analysis of variance, and the linear regression analysis conducted. Results of the study indicate that organizational process assets play the most pivotal role in determining the success of IT projects, followed by organizational communication, organizational culture and organizational structure. Enterprise environment factors have little to do with the success of IT projects.

6. CHAPTER 6   DISCUSSION

6.1. Introduction

The purpose of this chapter is to present a thorough discussion of the main research findings and research outcomes. As such, this chapter aims to discuss whether the research aim and linked objectives have been met appropriately. In addition to discussing the findings, the chapter also discusses results of hypothesis testing, while highlighting the research implications, limitations and recommendations for future research.

6.2. Discussion

According to the data analysis conducted, the most significant success factors for IT projects are organizational process assets. This study finds that process related aspects are crucial in an IT project. Hence, standardization of work process in the aspect of process assets plays an important role in project development because it formalizes and solidifies the developmental phases of IT projects. Therefore, it is measured that organizational process factors contribute as one of the critical success factor in IT projects.

Organizational structure is the next success factor that plays a significant role for IT projects. Different organizations with varying organizational goals must find the suitable organizational structure that fits the demands of their clients. Moreover, a good foundation of an organizational structure is advantageous for the work synergy of project teams. In totality, the organizational structure supports the functionality of project team-which is why it is considered as a critical success factor for IT projects.

Organizational communication is the last success factor that is significant for IT projects. Communication is essential in every type of work because it acts as an active channel that connects

every project resource in place. Project management practitioners believe that communication is the most essential variable for effective team collaboration. Thus, organizational communication is a direct factor that is related to project success.

The other two factors namely: organizational culture and enterprise environmental factors does not mark any significant relationship to IT project success based on the study conducted. However, the two factors still contribute to the overall improvement in the performance of IT projects. The variation may be measured by the differences in organizational culture of objectives thus making the two factors unquantifiable for project success.

Normality tests were conducted, based on which, the following interpretations were deduced;

- Organizational culture variables and its items were examined, and showed that the project leader was actively involved in the activities of the subordinates while the project manager was effective in leadership. This shows that management styles have a direct positive influence in determining successful implementation and completion of IT projects. However, the research findings also show that the impact of organizational culture was not as significant in determining IT projects success. This can be deemed somewhat inconsistent with literature stating its potential impacts on project success as argued by Gichoya (2005).

- Based on the normality test, organizational structure variables and its items were examined, showing that all the variables were normally distributed as shown by table 2. Results also showed that organizational structure is a critical factor that affects the success of IT projects, implying that with organizational structure project success factors can be predicted, which is in accordance with secondary research findings by Sarif et al. (2016), who argued that the organization structure is among the key organizational factors that influence the success of IT project implementation.

- Based on the normality test, organizational communication variables and its items were examined, showing that the skewness and kurtosis fell in the range of -1.96 and 1.96.

- Based on the normality test, organizational process assets variables and its items were examined. This shows that the skewness and kurtosis fell in the range of -1.96 and 1.96. All the variables were normally distributed. Results from this study also found that the organizational process assets are a critical success factor in IT projects. Secondary research findings by Handzic et al (2016) are in direct correlation with these findings, suggesting that adoption of a knowledge perspective enables IT firms to enhance the success of projects.

- The normality test for enterprise environmental factors variables and its items were examined. This shows that the project team underwent training related to the project and the project team exhibited a high willingness to change as shown by table 6. The results from primary research revealed an insignificant positive relationship between enterprise environmental factors and the success of IT projects.

- Based on the normality test, project success factors variables and its items were examined. This shows that the skewness and kurtosis fell in the range of -1.96 and 1.96. Therefore, all the variables of the project success factors were normally distributed.

This also indicates that project managers were more conversant with the project factors such as organizational structure, organizational communication, organizational process assets, enterprise environmental factors and project success factors as compared to team leader and team member.

- H1 states that there is a significant positive relationship between organizational culture and styles and the success of IT projects. From the analysis, it is evident that the relationship between organizational culture and project success is insignificant, hence the hypothesis is

rejected, stating an insignificant role of organizational culture and styles in success of IT projects.

- H2 states that there is a significant positive relationship between organizational structure and the success of IT projects. Linear regression analysis shows that there is significant positive relationship between organizational structure and project success factors. This indicates that with one factor (organizational structure) project success factors can be predicted. Therefore, the second hypothesis has been tested and proved

- H3 states that the There is a significant positive relationship between organizational communication and IT project success. Results of statistical analysis suggest that there is significant positive relationship between organizational communication and project success factors. Therefore, the third hypothesis has been tested and proved.

- H4 states that there is a significant positive relationship between organizational process factors and IT project success. According to the results of statistical analysis presented earlier, organizational process factors can supplement the prediction of IT project success, which is why the fourth hypothesis has been tested and accepted.

- H5 states that There is a significant positive relationship between internal enterprise environmental factors and IT project success. The regression coefficient table indicates that there is insignificant positive relationship between enterprise environmental factors and project success factors, thus resulting in the rejection of the hypothesis.

- H6 states that there is a significant positive relationship between all the five categories of organizational factors and IT project success. The regression coefficient table indicates that there is significant relationship between organizational structure and project success factors, resulting in the rejection of hypothesis.

- H8 stated that project managers, team leaders and team members have different opinions regarding various factors affecting IT project success. Results of the Post-hoc analysis suggests that there is significant difference between the opinions of different roles regarding various factors affecting IT project success, thereby resulting in the acceptance of hypothesis.

6.3. Research Implications

Among the most prominent implications of this research study, one that stands out is that researchers, project managers, project facilitators and team leaders along with the organizational management can effectively utilize the above identified variables in order to predict whether the projects will turn out successful, or if there are better alternatives available. Additionally, the research results can be utilized to reproduce research studies on a larger scale.

6.4. Research Limitations

The main limitation of this research is that the quantifiable factors are only restricted to organizational factors regardless of the cultural and strategic difference per sample group. The hypotheses that were tested on the sample groups were unable to measure the variance due to cultural or strategic factors per organization.

The other key limitation of this research study is that it only involved project members, team leaders and team members residing in specific geographical location such as such as Middle east and India. his means that the research results cannot be generalized upon the entire population, since project management is a vast field and organizations operate in multiple industries with varying organizational cultures, environments and structures. For example, an e-commerce company may run on a sole-proprietorship mode of business, thereby eliminating organizational

structure completely. The research study also involved time and resource limitations, due to which a more expansive research study could not be organized.

6.5. Summary

The purpose of this chapter was to present a discussion on the research findings, and to share findings from hypothesis testing. Results of the study indicate that not all the organizational factors have significant relationship with IT project success. As such, all organizational factors cannot be utilized for predicting the success of IT projects. This resulted in the rejection of 3 hypothesis.

7. CHAPTER 7   CONCLUSION & RECOMMENDATIONS

7.1. Introduction

This chapter is intended to provide conclusive remarks on the entire research study, its aim, objectives and the extent to which they have been achieved. The chapter also highlights the specific findings that hold significance, and the areas that need further research and development. Explanation of how the current study has filled a prevailing research gap has been duly included.

7.2. Achievement of Research Aim and Objectives

The central aim of this research study was to explore the organizational factors that impact IT projects success. Since the research aim is rather broad due to a multitude of organizational factors and absence of concrete empirical evidence, the scope of this study was narrowed down to include five categories of organizational factors. These included organizational culture and management style, organizational structure, organizational communication, organizational process assets and enterprise environmental factors. To fulfil the central research aim, influence of each of these five categories to IT project success was evaluated in light of both, literature and primary research, by dividing them into five specific research objectives.

To conclude, it can be stated that all research objectives have been successfully achieved, thereby indicating the achievement of the central research aim. As evident from previous chapters, descriptive analysis and ANOVA results, the relationship between organizational culture and project success is insignificant, implying that organizational culture and management styles play an insignificant role in influencing the success of IT projects, which is rather inconsistent with literature stating its potential impacts on project success as argued by Gichoya (2005). Results show that organizational structure is a critical factor that affects the success of IT projects,

implying that with organizational structure project success factors can be predicted. This is consistent with findings by Sarif et al. (2016), who argued that the organization structure is among the key organizational factors that influence the success of IT project implementation. The quality of communication is positively related to the IT project success, as found by the research study, demonstrating significant positive relationship between quality of communication and IT project success. This is contrary to the study by Aubert et al (2013) who contend that there was minimal impact of organizational communication on technical adequacy of the project. The study also found that the organizational process assets are a critical success factor in IT projects, and that the enterprise environmental factors play an equally positive role in determining IT project success; insignificant positive relationship. These findings are consistent with literature suggesting that adoption of a knowledge perspective enables IT firms to enhance the success of projects (Handzic et al, 2016).

7.3. Areas that need Further Research

From the research study, the areas that need further research include the ones that have revealed contradictions between literature and primary research. To be specific, future research studies need to consider the extent to which organizational culture and management styles, and organizational communication can be attributed to IT project success in order to eliminate the underlying inconsistencies. Multiple research studies must be conducted in order to prove the validity of research findings.

7.4. Fulfilled Research Gaps

Since there was a scarcity of prevailing literature with regards to the role and influence of organizational factors in IT projects success, the current study has helped fill in this gap to a great extent. Prior to this research study, no research studies considered multiple organizational factors in a single study, thereby resulting in fragmented outcomes. The current study eliminated this prevailing research gap, while also providing rational directions for future research.

7.5. Recommendations for Future Research

Bearing in mind the research limitations, the following recommendations are proposed;

- Future researchers can consider the inclusion of a larger sample size that could be considered representative of the population.
- Future researchers may also consider organizational factors separately with regards to IT project success. For example, the process assets need to be considered individually and not collectively in order to determine their influence over successful IT project management and implementation.
- Inconsistencies between findings show that further research studies must be conducted in order to substantiate the validity of research findings. Future research studies need to consider the extent to which organizational culture and management styles, and organizational enterprise environmental factors can be attributed to IT project success in order to eliminate the underlying inconsistencies. Multiple research studies must be conducted in order to prove the validity of research findings.
- Future researchers might also consider for a longer period of research study and in-depth analysis of related case studies that are current practices in the IT industry. IT is abruptly changing and some IT standards which are considered as best practices today are becoming

obsolete as time progresses. Hence, the relevance of the research study to current IT practice is critical in formulating test hypotheses. This is to ensure that the right hypotheses would be tested to the sample group based on the reliable sources.

-   Future researchers might also consider expanding the scope of study to various IT organizations across different nations in order to determine the cultural differences of organizational factors and how it affects IT project success.

The researcher strongly believes that redesigning the study as per the above recommendations would make a holistic understanding of the practical factors that makes IT project successful.

7.6. Summary

The current chapter provided conclusive remarks on the research study as a whole. To conclude, it can be stated that the overall research aim and objectives have been successfully achieved, as proved through hypotheses testing and descriptive analysis.

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9. Appendices

9.1. Questionnaire

I am seeking your help to fill the below academic research questionnaire related to the "Organizational factors that influence the success of IT projects". This questionnaire seeks to get your feedback on the most recently completed IT project that you have taken part in. Kindly take a few minutes to complete the survey. Your responses are highly appreciated and will be used for academic purpose only. There will be a complete anonymity in the gathered data and all analysis will be conducted at the aggregate level without identifying any respondent or organization.

Tick as applicable

PART 1: GENERAL INFORMATION

1. Name:

2. Organization (Optional):

3. Position:

4. Age of respondent (years)

18-24 ☐   25-34 ☐   35-44   ☐   45-54 ☐   Above 55 ☐

5. Gender of respondent: Male   ☐   Female   ☐

6. What was the duration of the project?

   <1 year ☐   1-2 years ☐   2-5 years ☐   >5 years ☐

7. What was your role in the project

   Project Manager   ☐   Team lead   ☐   Team member   ☐

8. How much time have you spent on the project (% of total time)?

   <25%   ☐   25-50%   ☐   51-75%   ☐   >75% ☐

PART 2: ORGANIZATIONAL FACTORS

A. ORGANIZATIONAL CULTURE AND STYLES

Can you Please rate the influence of the following "Organizational Culture and Style" on

project success?

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Project members were actively involved/engaged in project decision-making	☐	☐	☐	☐	☐
2. The project leader was actively involved in the activities of the subordinates.	☐	☐	☐	☐	☐
3. The project manager was effective in leadership.	☐	☐	☐	☐	☐
4. The top management was very supportive in executing the project.	☐	☐	☐	☐	☐
5. The top management was in attendance during the project kick-off/follow-up meetings.	☐	☐	☐	☐	☐
6. The project manager was highly focused in meeting the completion time and quality.	☐	☐	☐	☐	☐
7. The project manager was highly focused on motivating subordinates and communicating with stakeholders.	☐	☐	☐	☐	☐
8. The project manager was highly focused on the tools and assets necessary to deliver the set goals.	☐	☐	☐	☐	☐
9. The project manager was highly focused on planning and breaking down the project into a well-built process.	☐	☐	☐	☐	☐

B. <u>ORGANIZATIONAL STRUCTURE</u>

Can you Please rate the influence of the following "Organizational Structure" on project

success?

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
10. Decision-making was a preserve of a few individuals/highly centralized.	☐	☐	☐	☐	☐
11. The procedures and rules in the project, as well as the responsibilities of different positions, were specified in writing/highly formalized.	☐	☐	☐	☐	☐
12. The project involved a large amount of resources in terms of people, activities, and data points (the project was complex).	☐	☐	☐	☐	☐
13. The project was characterized by a hierarchy of authority and adherence to fixed rules (bureaucracy).	☐	☐	☐	☐	☐
14. There was strong interdepartmental collaboration.	☐	☐	☐	☐	☐

C. ORGANIZATIONAL COMMUNICATION

Can you Please rate the influence of the following "Organizational Communication" on

project success?

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
15. Information sharing (communication) was effective and useful to all stakeholders (client, project leadership, IT technicians, and suppliers).	☐	☐	☐	☐	☐
16. The project leader was effective in communicating technical information to the client in a way that they understood.	☐	☐	☐	☐	☐
17. There was no information breakdown in the project implementation.	☐	☐	☐	☐	☐

D. <u>**ORGANIZATIONAL PROCESS ASSETS**</u>

Can you Please rate the influence of the following "Organizational Process Assets" on

project success?

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
18. The project management approach used was agile (focusing on continuous improvement).	☐	☐	☐	☐	☐
19. The project members had high skill levels.	☐	☐	☐	☐	☐
20. Data on similar previous projects was available to the project team.	☐	☐	☐	☐	☐
21. There was a specific office/steering committee dedicated to the standardization of project-related governance processes.	☐	☐	☐	☐	☐

E. <u>ENTERPRISE ENVIRONMENTAL FACTORS</u>

Can you Please rate the influence of the following "Enterprise Environmental actors" on

project success?

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
22. Useful information was regularly shared between departments and between different stakeholders.	☐	☐	☐	☐	☐
23. The project team was flexible in responding to unanticipated changes in the operating environment, such as delays in supply, government policy, and technological advancement.	☐	☐	☐	☐	☐
24. The project team underwent training related to the project.	☐	☐	☐	☐	☐
25. The project team exhibited a high willingness to change.	☐	☐	☐	☐	☐

PART 3: PROJECT SUCCESS

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. The project adhered to the schedule.	☐	☐	☐	☐	☐
2. The project did not have cost overruns.	☐	☐	☐	☐	☐
3. There was high user satisfaction with the project output.	☐	☐	☐	☐	☐