CRITICAL SUCCESS FACTORS IN THE DEVELOPMENT OF MALAYSIAN ISLAMIC MARRIAGE MANAGEMENT SYSTEM

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UNIVERSITY MALAYA
KUALA LUMPUR

2022

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RESEARCH PROJECT SUBMITTED TO THE FACULTY OF BUILT ENVIRONMENT UNIVERSITY MALAYA, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF PROJECT MANAGEMENT

FACULTY OF BUILT ENVIRONMENT UNIVERSITY MALAYA KUALA LUMPUR

2022

UNIVERSITY OF MALAYA

ORIGINAL LITERARY WORK DECLARATION

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Matric No: S2019391/1

Name of Degree: Master of Project Management

Title of Research Report: Critical Success Factors in the Development of Malaysian Islamic Marriage Management System

Field of Study: Project Management

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CRITICAL SUCCESS FACTORS IN THE DEVELOPMENT OF MALAYSIAN ISLAMIC MARRIAGE MANAGEMENT SYSTEM

ABSTRACT

The aim of this research is to develop a framework depicting the critical success factors in developing an IT system in JAKIM and JAWI. Using quantitative methodology by distributing questionnaire to selected 63 officers and support staff of JAKIM and JAWI, the results were analysed using Relative Importance Indicator. The finding from this research shows that the dominant critical success factor is "human management" factor. Although system development project management is a highly technical project, the "human factor" in project management exerts the most important factor. The importance of leadership/top management or the "human aspect" in project management has been repeated by many researchers. The finding of this research have proven that in a hierarchical governmental organisation, the human aspect of leadership/top management, combined with user's competencies and the availability of financial resources are the critical factors needed for success. This research has contributed in the understanding of officers and support staff of JAKIM and JAWI in acknowledging the critical factors that contributed to the success of the development of the system. Further improvement with regard to the aspect of top management, leadership and human management can be incorporated in the area of management training and career development of current and future government officers and not limited to those who are in project management related fields, but also other fields of management as well.

Keywords: critical success factors, top management, human factor

FAKTOR KEJAYAAN KRITIKAL DALAM PEMBANGUNAN SISTEM PENGURUSAN PERKAHWINAN ISLAM MALAYSIA

ABSTRAK

Tujuan penyelidikan ini adalah untuk membangunkan rangka kerja yang menunjukkan faktor kejayaan kritikal dalam membangunkan sistem IT di JAKIM dan JAWI. Menggunakan metodologi kuantitatif dengan mengedarkan soal selidik kepada 63 pegawai dan kakitangan sokongan JAKIM dan JAWI, dapatan daripada soal selidik tersebut dianalisis dengan menggunakan penunjuk kepentingan relatif. Hasil penemuan daripada kajian ini menunjukkan bahawa faktor kejayaan kritikal yang dominan adalah dari segi aspek pengurusan yang diterajui oleh manusia atau pegawai itu sendiri. Walaupun pengurusan projek pembangunan sistem adalah projek yang sangat teknikal, "faktor manusia" dalam pengurusan projek merupakan faktor yang paling penting. Kepentingan kepimpinan/pengurusan atasan atau "aspek manusia" dalam pengurusan projek telah banyak kali dibangkitkan oleh ramai penyelidik. Hasil penyelidikan kali ini telah membuktikan sekali lagi bahawa dalam organisasi kerajaan yang bersifat hierarki, aspek manusia kepimpinan/pengurusan atasan, digabungkan dengan kecekapan pengguna dan ketersediaan sumber kewangan adalah faktor yang diperlukan untuk menjayakan sesuatua projek atau idea atau apa sahaja yang ingin dibangunkan oleh pegawai atau agensi kerajaan tersebut. Diharapkan supaya penambahbaikan skop atau topik berkenaan aspek pengurusan atasan, kepimpinan dan pengurusan manusia dapat dimasukkan dalam bidang latihan dan pembangunan kerjaya pegawai kerajaan yang ada pada masa ini dan pegawai-pegawai pada masa depan bukan sahaja bidang dalam pengurusan projek, tetapi bidang pengurusan yang lain juga.

Kata kunci: faktor kejayaan kritikal, pengurusan tertinggi, faktor manusia

ACKNOWLEDGEMENT

English poet John Donne wrote in 17th century that “No man is an Island”. For this, first and foremost, I would like to take this opportunity to express my humble gratefulness to the Almighty Allah Subhanahu Wa Ta'ala, the Creator of Heaven and Earth and anything and everything in between, the Most Merciful, the Most Gracious, without whom I would have never had the opportunity to further my studies in Master of Project Management in University of Malaya, without whom I would have never had the strength and the passion to complete this Research Project. May Your love and mercy continue to guide me on this earth and hereafter.

To my supervisor, Associate Professor Dr. Norhanim binti Zakaria, no words can describe how much I am indebted to you for patiently guiding me and relentlessly showering me with your knowledge and experience. I am forever thankful. To all the lecturers and program coordinators of Faculty of Built Environment, who have been wonderful and passionate in sharing your knowledge and experience, guiding me to the right path of learning and researching, please accept my highest appreciation. To the wonderful administration staffs of the faculty, where would I be without your kind assistance. To all my classmates of Master of Project Management, I thank you all for giving me this wonderful opportunity to know you, to share great moments with you, to be with you all in all our moments of needs. Special mention and appreaciation to Encik Muhammad Fairudz bin Saderi and Puan Norhafiza binti Azizan who facilitated my research project.

To the loves of my life - my wife, Norazni binti Azizan and daugthers, Syameen Zara and Nia Salsabilla, thank you for being there for me, thank you for all the support and thank you for believing in me.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

The older Malaysian generations can still remember the hassle that people have to go through with multiple forms people need to fill up each time people need to deal with government agencies. Thanks to the advancement in Information Technology (IT), and a constructive forward thinking government policy in 1996 that have introduced and give rise to new and better ways to deliver services to the public; the electronic government, or popularly known todays with as e-government was born to fruition.

Lengthy processes with various procedures which requires piles of paper documentations submissions was the typical identity and standard operating procedure of a government agency which have been a constraint in ensuring a better delivery system, or in other words, the service level of government agency, particularly Islamic religious affairs department, has not been up to client's expectation. But the situation started to change once the policy of e-government was enforced. Government agency was in the race to come up with a better system to fulfil the requirement of the policy. Though the e-government policy was established decades ago, and many online or IT systems were already developed in the government agency, no formal studies was conducted to understand the success stories behind developing these systems, especially in an Islamic religious agency which is perceived as being too slow to adapt to change. This research will not highlight not just an IT system of a government agency, but a system that has benefited millions of Muslims in Malaysia.

This research will focus on the critical success factors in development of Malaysian Islamic Marriage Management System (MIMMS), or known officially as *Sistem*

Pengurusan Perkahwinan Islam Malaysia (SPPIM), which is a system developed in collaboration with the Family, Social and Community Development Division (KSK) and the Information Management Division (BPM) of the Malaysian Islamic Development Department (JAKIM) that has benefited millions of Muslims in Malaysia.

The development of this system began in 2004 with the name known as Islamic Marriage Information System (*Sistem Maklumat Perkahwinan Secara Islam*) or SIMPI. This system has undergone a transformation in accordance with current circulation and needs produced by JAKIM and was subsequently known by the name MIMMS (*SPPIM*) in 2012. Prior to the existence of this system, the whole Islamic marriage processes were done manually and in hardcopy forms.

The development of this system is provided based on a complete work process in the aspect of Islamic marriage management in Malaysia. It starts from the process of applying for pre-marriage courses, marriage permission applications, marriage registration, divorce and reconciliation (*ruju'*) as well as marriage consultations in all State Islamic Religious Departments (*Jabatan Agama Islam Negeri*), especially at the District Islamic Religious Office (*Pejabat Agama Islam Daerah*) level throughout Malaysia more efficiently and systematically.

Through MIMMS, the State Islamic Religious Departments clients can facilitate their work process. Among the modules contained in MIMMS are:

i. Registration of Islamic Pre-Marriage Course Speakers
ii. Registration of Islamic Pre-Marriage Course Organizers
iii. Issue a Certificate of Permission to Organize a Pre-Marriage Course

iv. Issuing Islamic Pre-Marriage Course Certificate

v. Issuing Marriage Permission Letter

vi. Process Marriage, Divorce and Reconciliation Registration Application

vii. Issuing a Marriage Certificate

viii. Issue a Divorce Certificate

ix. Issuing a Letter of Reconciliation (Ruju ')

To date, seven (7) states and three (3) Federal Territories have adopted this system to assist in the management of Islamic marriages in the states involved, namely Negeri Sembilan, Melaka, Perlis, Kedah, Perak and the Federal Territory of Kuala Lumpur, Putrajaya and Labuan, Selangor and Johor. Ongoing efforts will be undertaken by JAKIM to conduct joint integration with other states to adopt this system. The reason that this system is not simultaneously adopted by all states is because Islamic religious matter falls under the jurisdiction and purview of the State, as stated by the Malaysian Constitution, therefore each states has full authority to choose how to manage their Islamic affairs in general, and the management of Islamic marriage in particular.

The importance of the MIMMS usage can be explained by showing how several coordination of Islamic marriage procedures in the states involved that have been successfully achieved through MIMMS, namely:

i. Marriage Certificate Card

ii. Marriage, Divorce and Reconciliation Forms

iii. Online Marriage Permission Application

iv. Standard work process flow for marriage permission application, marriage registration, divorce and *ruju', Islamic* pre-marriage consultations and courses.

Standish Group (1995) observed in their research conducted in United States of America, that no organisation, especially government organisation, can take information technology (IT) project management for granted. Looking at the figure from a developed country like the United States of America (USA), the failure rate of IT projects is shocking. Research done over twenty-six years ago in the USA found that more that 30 percent of software projects will be terminated before completion, and more than half the projects will cost an average of two hundred per cent of their original estimates. Whittaker (1999) concluded in her research that even with the hundreds of billion spent each year in the USA alone on IT application development, the cost of failures and overruns is indeed very high. Hence it is significant to understand the reason behind all these costly failure in order to learn from them, and ultimately to avoid them from the future projects. This is the reason why the need to truly understand what determined success of developing an IT system project in paramount. A deeper understanding of the factors contributing to the success of an IT project could be replicated by all sectors.

1.2 Problem Statement

Islam places a great deal of emphasis on the marital and familial management and system (Yusof, 2016). In line with e-Government initiative by the federal government of Malaysia, JAKIM, who is responsible in the Islamic Religious Affairs at the national level, joined the bandwagon and developed, among others, the Malaysian Islamic Marriage Management System, to modernised the management of Islamic marriage. It is

understood that the Malaysian Constitution gives special jurisdiction to each Head of State/Sultan to manage matters pertaining to Islam. Therefore, even if JAKIM has developed a system to manage Islamic marriage, each individual states in Malaysia has the right to determine and use their own system, and need not follow any consensus reached at national level (Yusof, 2016). This is the reason why the Islamic marriage management system is developed in stages, and used in only 7 states and 3 Federal Territories currently. Sabah still uses physical manual form for marriage application, while Kelantan develops their own system for marriage application called *e-Qaryah*, Terengganu develops their own system for marriage application called *eMunakahat* and Sarawak developed their own web based online portal for marriage management system called *KISWA MUNAKAHAT*.

Ramli (2017) and Chen et al. (2006) in their research, summarised that one of the challenges faced by Government Officers in Malaysia is low computer literacy and dedication of resources. Many of them also do not place electronic government at a high priority due to lack of knowledge on the issue. Ramli (2017) also gave several e-Government system examples to further explained the issues and challenges faced by e-Government systems by highlighting the *e-Tanah* System (e-Land), and *e-Syariah* system. The e-Land system is used for land administration by the Federal Territories Director of Land and Mines Office under the Ministry of Natural Resources and Environment, and the *e-Syariah* is used by the Malaysian Syariah Judiciary Department (*Jabatan Kehakiman Syariah Malaysia*) for filing of court cases and other related syariah court services in Malaysian Syariah Court. Ramli (2017) also mentioned that in the past, the department was notoriously known for its red-tape inefficient services to the public.

The author pointed out that one of the challenges faced by the *e-Syariah* system was not about the system in itself, but, rather the working culture of the internal officer and staff who have been too comfortable with the old system, which gave rise to the strong resistance in adapting and implementing the new system. The resistance to change from these internal officers and staff of the government agency is understood as they feared that with the advancement of technology might one day replace their jobs. The author continues by stating that despite the challenges faced in the initial implementation of the system, the system is still considered as successful and has improved the image the Syariah court and modernised their internal working system. For example, the system has lessened the registration processing time from 8 minutes to just 3 minutes. Furthermore, the author acknowledged that leadership and the environment was the instrumental factor behind the success of the system, and specifically mentioned the commitment and the positive attitude, strong and determined leadership displayed by the Chief Justice of the Syariah Court. Though the author did not discuss on the project management aspect of the development of the system, it can be construed that the success of developing the e-Syariah system, in a very conservative and change resistance Islamic government agency, is due to the influence of their leadership, combined with the internal user's attitude towards the usage of the system.

Record also shows JAKIM continues to received funding to further upgrade the Malaysia Islamic Marriage Management System, with a total budget of RM10,587,774.73 million received from the Economic Planning Unit, Prime Minister's Department. The project to transform the Malaysia Islamic Marriage Management System was awarded on September 2021 to a local company, with the target of completing the full upgrade of the system by year 2023 (Keputusan Item View Page – MYPROCUREMENT, 2022). This continued support with large amount of funding from the Federal Government of

Malaysia is a testament and a clear sign of confidence from the government that this system has been successful. This research project will provide the opportunity in exploring the critical success factors and to answer the question of which factors that determine and influence the success of the development of this system from the aspect of project management by further investigating, exploring, analysing and discussing the critical success factors in order to determine the dominant critical success factors in the development of the Malaysian Islamic Marriage Management System and the relationship of the critical success factors with the development of the system.

1.3 Research Questions

This research is to set out to answer pertinent questions regarding the development of The Malaysian Islamic Marriage Management System:

i. The Malaysian Islamic Marriage Management System has been around for some times and being utilised by not just the Federal Islamic Departments, but also at the several State Islamic Departments level. What factors contribute or play important roles in the successful development of the system?
ii. What are the critical factors of a successful The Malaysian Islamic Marriage Management System?
iii. What can be defined as success?

1.4 Research Aim and Objectives

This research aims to propose a framework depicting the critical success factors in developing Malaysian Islamic Marriage Management System in Department of Islamic

Development Malaysia *(Jabatan Kemajuan Islam Malaysia*) and Federal Territory Islamic Religious Department (*Jabatan Agama Islam Wilayah Persekutuan*).

This aim is reinforced by the following objectives:

i. To explore the critical success factors that contribute to the success of the development of Malaysian Islamic Marriage Management System.
ii. To identify the relationship between the critical success factor and the Malaysian Islamic Marriage Management System.
iii. To develop a framework depicting the critical success factors in the development of the Malaysian Islamic Marriage Management System.

1.5 Research Methodology

The commencement of the research project consists of carrying out exploratory work with the intention of zeroing down on issues that are both timely and pertinent. Because of this research, it will be feasible to find a definition of the problem that is both clear and precise. After that, the research will carry out literature review on the topic of the research from articles as early as 1961, right up to articles published in early 2022, and it will utilise the quantitative survey method to collect data. In order to investigate each and every piece of data, quantitative approaches using relative importance index are used. Selected officers and support staff of JAKIM and JAWI as well as one former IT officer from JAWI are surveyed using questionnaire. The most common tools that are utilised to provide assistance with data analysis is known as SPSS, which is an acronym for the Statistical Package for the Social Sciences, MS EXCEL and Relative Importance Index (RII). The details of the methodology used for this research will be further explained in Chapter 3.

1.6 Research Design

The quantitative research method is used in this research. The response data from the selected respondents are collected through the use of a questionnaire survey. The survey begins with a quantitative analysis, which serves as a supplement to the questionnaire survey that follows. Analytical studies are utilised to determine the aspects that contributed to the success of Malaysian Islamic Marriage Management System. The objective of this research project is to explore the critical success factors that will lead to the successful development of Malaysian Islamic Marriage Management System, analysing the factors and the relationships of the factor with the system, and finally to develop a framework of critical success factors in developing the Malaysian Islamic Marriage Management System.

1.7 Scope of Research

The coverage of this research will focus of data/information and feedback obtained from JAKIM as the system developer and super administrator as well as the Department that maintains and control the system, and the Federal Territory Islamic Religious Department as the department that operates the system at Federal Territory level. This research is to demonstrate not just the importance of a system that is currently being used to better manage the existing marriage processes and procedures, but also to show the significance of the system in the successful policy and implementation of e-government in an Islamic religious department. This research focuses on an established general assumption that this system has been an exemplary system that is both successful in term of its development, as well as successful in term of its outcome in reforming the government service delivery system.

1.8 Significance of Research

Developing an IT system is no easy task, especially in government agencies that traditionally move in a slower pace to reform their delivery system. As this system influenced and has touched the welfare of millions of Muslims in the most important phase of their lives, the parties behind the successful development of this system, who are the actual unsung heroes of this system needs to be highlighted. The knowledge from the understanding of the critical factors that influence and determine the successful development of this system can be used and replicated as the future reference for all government agency that plan to develop a similar IT system project.

The reason on the significance of researching, determining, understanding the critical successful factors is because they simplicity of the concept and the ease of understanding, a way of striking the nerve of those in managerial or leadership positions which lead to their support. It is also able to aid an individual manager to think about his or her information needs and being able to better manage them. In other words, there are a lot of important factors in determining the success of a project, but only a handful can be regarded as critical to the success of the project.

1.9 Organisation of Chapter

The chapters of this research project are arranged based on the research process in this research. It can be is summarised as follows:

Chapter 1: Introduction. A brief discussion of the topic and the historical background of the organisations involved in this research project.

Chapter 2: Literature Review. This chapter provides the definition of critical success factors and various researches on critical success factors in various industries conducted by other authors.

Chapter 3: Research Methodology. This chapter is details the methodology used in this research project.

Chapter 4: Data Analysis. This chapter presents the details of the results of the survey conducted using various statistical tools.

Chapter 5: Finding and Discussion. This chapter details the finding from the results of the analysis of this research project and discussed the finding of this research.

Chapter 6: Conclusion and Recommendation. This chapter concludes the finding of this research project. It also proposes some recommendation for improvement in related training areas.

1.10 Summary of Chapter

Chapter 1 discussed the issue and research area of the research project. The background of the Islamic agencies was also briefly introduced for further understanding of the topic. The focus of the research is the development of the Malaysian Islamic Marriage Management System that has been widely used by the Islamic agencies that manages Islamic marriage. The research statement emphasizes that in order for an idea or a project to take off, and be successful, it is the human management factors that plays the most important role, and this research will focus on which specialisation of human management factors that can be identified as the critical success factors.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literatures that discuss critical success factors from various international and regional researchers, from as early as 1961, right up to articles published in early 2022, particularly those articles that focus on critical success factors related to "human" factors in project management. However, this research is unable to review any published articles, either published electronically in websites, or physically published papers, that focus on project management aspects of the development of an Islamic Marriage Management IT System. Most published articles were focused on the Islamic laws or Islamic edicts aspects of the Islamic marriage management system.

The discussion of the Malaysian Islamic Marriage Management System is incomplete without first looking at the overview of e-Government. E-Government originates in a foreign language and refers to "electronic Government". There are numerous definitions of e-Government in various countries, depending on the government system's perspective:

a) According to the US government, e-Government is a term that refers to the delivery of government information and online services via the internet or other digital media. While Nevada, a state in the United States, defines e-Government as follows:

i. e-commerce services Eliminate customary barriers to providing easy access to government services for communities and companies;
ii. Government operations for internal constitutions can help to streamline the requirement for operations for all government agents and employees.

b) According to the New Zealand Government, e-Government is a way for the government to leverage new technology to serve the community by increasing access to

government services and information, as well as by improving service quality and providing opportunities for citizens to participate in democratic processes and institutions.

c) According to the Italian government, e-Government is defined as the application of current information and communication technologies to state administration, specifically:

i. Computerized design enhances operational efficiency by involving workers in each department and division.
ii. Computerized services for communities and businesses, frequently including the integration of employees from many departments and divisions,
iii. Provision of ICT access to end users via government information services.

There are numerous definitions of e-Government, but the most of them agree on the following which is government's use of information communication technology to enable citizens and businesses to communicate and transact with the government via various electronic media. It is about how government organises itself: how its administration, laws, regulations, and frameworks are designed to facilitate service delivery and to coordinate, communicate, and integrate internal activities. (Mariati, Suhendara, E.S., 2018).

The definitions mentioned above concludes that IT system is the backbone of e-Government, and looking deeper specifically at the success or failure of an IT system, King & Teo (1996) demonstrated unequivocally that top management support aided the successful deployment of strategic Information System applications, whereas a lack of top management support hampered strategic Information Technology/Information System use.

According to research conducted by Ang et al. (2001), senior management support has a significant impact on an organisation's adoption of information technology. When senior management is very supportive, the amount of Information Technology use in firms will increase. Hussein et al. (2007) in their research on the organisational elements that influence organisations. More importantly, senior management commitment and support are likely to stimulate increased usage of information technology. Top management assistance helps overcome resistance and promotes acceptance of new information technology solutions.

The effectiveness of information systems in e-government agencies in Malaysia revealed that senior management support was critical in sustaining Information System initiatives and eventually facilitating organisational success, especially public organisations. More importantly, senior management commitment and support are likely to stimulate increased usage of information technology.

Top management assistance helps overcome resistance and promotes acceptance of new information technology solutions. The organisational dimension's impact on information system success has been extensively explored from a variety of angles.

When referring to organisational dimension, various studies have utilised a variety of terminology, including contexts, variables, and factors. According to Ang et al. (2001), organisational determinants affecting Information Technology use include the structure of the organisational, the size of the organisational, the technical knowledge of the managers, strong backing from the top management, financial availability, objective alignment, and budgeting approach. Hussein (2007) identified six organisational characteristics that influence information systems.

The six criteria are as follows: decision-making framework, executive backing, objective alignment, the depth of knowledge in Information Technology, management style, and resource management. Additionally, Ziemba (2013) identified organisational elements such as coordination of public ICT investments, e-Government visionaries and leaders, top management support, and electronic communication across government units from a variety of perspectives.

It is considered that establishing success criteria serves as a condition for an organisation's success and serves as a means of determining the organisation's maturity level (Khandelwal and Ferguson, 1999). Cooke-Davies (2002), Judgev and Muller (2005), and Ika et al. (2012) offered lists of the most frequently used Critical Success Factors, however the overall conclusion is that no single Critical Success Factors list is applicable to all projects.

Although there are many critics, the literature on project management frequently refers to Cost, Time, and Quality as project success criteria (De Wit, 1988; Deane and Clark, 1997; Shenhar and Levy, 1997; Atkinson, 1997; Turner, 1999). Several of them have emphasised the importance of considering other project success factors such as profitability, business success, and satisfying expectations that are acceptable to all project stakeholders. Additionally, a few empirical studies (Shenhar and Levy, 1997; Pinto and Mantel, 1990; Wateridge, 1998; Linberg, 1999) undertaken in a variety of industrial settings with a variety of aims support the inclusion of stakeholders' perspectives in deciding a project's success.

There are two empirical studies that address the success criteria for software projects in particular: The first is by Wateridge (Wateridge, 1998), who conducted a survey of project

managers, system analysts, sponsors, and users to determine the five most critical success factors for Information Systems/Information Technology (IS/IT) projects. According to users and project managers, meeting user needs is the most critical success factor for IS/IT projects, albeit it appeared to signify something different to each group. Users ranked satisfied users as the second most important criterion, while project managers ranked it eighth. For project managers, the most critical criteria are that the project be within budget and on schedule, followed by that the project meets user needs. This demonstrates that users equate satisfying their needs with happiness, whereas project managers prioritise fulfilling senior management's budget and time targets over creating a solution that makes users happy.

The other research is case research of a Linberg software project (Linberg,1999). This research discovered a discrepancy between software professionals' opinions of project success and the widely accepted definition of project success as meeting budget, time, and quality objectives. A completed project's success is determined by the quality of the result, but a cancelled project's success is decided by the lessons learnt from the preceding project. They credit their development initiatives' success to the fulfilment they obtain from their work as a result of their creativity and learning when working on a project. It is believed that success criteria should take into account two independent aspects of a project: (1) internal project organisation characteristics such as time, cost, and scope completion; and (2) external project organisation characteristics such as customer satisfaction with the project output (Shenhar and Levy, 1997; Pinto and Mantel Jr, 1990). The first is advantageous for project execution, monitoring, and control, whereas the second is more critical for the value of deliverables to the project's end users, which has a long-term impact.

Internal qualities of a project are directly tied to its technical components, whereas exterior qualities are concerned with the project's business implications. External performance is certainly sensitive to a variety of hidden and unknown factors in the real world, such as the user-developer relationship, which may be essential in deciding the project's success for external stakeholders. Nonetheless, the best method will be to find a balance between the two and pursue them concurrently in such a manner that the internal structure fits the first set of criteria while producing an outcome that fulfils the second set. Clearly, the finding of Wateridge and Linberg imply that software development organisations are more inward-looking. While it is possible to accomplish both internal and external objectives when developers and managers pursue their creative zeal to suit customer desires, plenty of room for conflict exists when developers (and others) pursue their creativity regardless of client requirements.

2.2 Background of the Department of Islamic Development Malaysia (JAKIM)

The Department of Islamic Development Malaysia or more popularly known with its acronym JAKIM, is a federal Islamic religious institution. The purpose of establishing JAKIM is to meet the aspirations of the people and the country to see the development and development of the Ummah in line with the true Islamic demands.

The establishment of JAKIM is seen as one of the platforms in meeting the needs of the Muslim community in line with the development and development of the country that has made Islam the official religion and has been recognized in the Federal Constitution Article 3 (1). It clearly provides that Islam is the religion of the Federation.

To ensure the uniformity and effectiveness of religious administration in each state, the Council of Rulers at its 81st conference, on October 17, 1968, agreed to establish the National Council for Western Malaysian Islamic Affairs. The establishment of the National Council of Islamic Religious Affairs of Malaysia (MKI) was formed on July 1st, 1969. The ceremony was later renamed the National Council for Islamic Religious Affairs on June 17, 1971 when Sabah and Sarawak became members.

On February 1st, 1974 when the Federal Territory was formed, the MKI secretariat's duties were growing, thus, the MKI secretariat was upgraded into a religious division, the Prime Minister's Department. During that year the structure of the Dakwah Division was renamed the Institute of Preaching and Islamic Training.

Later, from January 1st, 1984 the organisational structure of the Religious Division, the Prime Minister's Department was enlarged by increasing the number of units and upgrading the positions of divisions, branches and units. Further on May 21, 1985, the name of the Religious Division, the Prime Minister's Department was changed to the Islamic Affairs Division (BAHEIS), the Prime Minister's Department based on the increase in responsibility and expansion of the Sabah State Government after handing over three of its preaching training centres in Kudat, Kundasang and Keningau to be governed by the Federal Government on May 21, 1984.

In line with the development of the country and the needs of the current Muslim community, the 24th Islamic Religious Affairs Development Committee (JKI) meeting on June 24, 1995 agreed to establish a Task Force Committee to restructure the functions and organisations of BAHEIS, Prime Minister's Department. Following the results of the research, the Task Committee has approved the government for the function of the

BAHEIS to be revamped and the new structure is established. Finally on January 1, 1997, BAHEIS was further enhanced by the new administration became a full department under the new name of the Islamic Development Department of Malaysia or JAKIM as known today.

Given the great responsibility, JAKIM has devised and drafted several important steps to enable it to play a role in developing and developing the Muslim community in the country. Among the steps taken are to determine the vision, mission, objectives and functions that need to be implemented.

In this case JAKIM has set the vision of "Leading in Building the Solid Civilization of the Ummah". Meanwhile, JAKIM's mission is to "create efficient and effective Islamic affairs management". Among the objectives outlined by JAKIM are:

(i) Ensure that the teachings of Islam are widespread to the whole community;

(ii) Establish credible leadership and produce trained, skilled, dedicated and wise management energy; and

(iii) Produce a management system based on Islamic values and ethics.

Whereas the three (3) cores of JAKIM's functions under the National Council's instructions for Islamic Religious Affairs Number 1 of 1989 are as follows:

(i) the drafting and uniformity of Islamic law;

(ii) Coordination of Islamic Administration; and

(iii) Coordination and development of Islamic Education.

To strengthen management and produce more efficient work, JAKIM is divided into 4 major sectors:

1) The policy sector consists of 5 sections:

(i) Planning and Research Division

(ii) the Division of Islamic Development

(iii) Fatwa Management Division

(iv) Legal Coordination Division

(v) a part of the relationship

2) The Human Development Sector consists of 5 sections:

(i) Propaganda Section

(ii) Human Development Division

(iii) Media Division

(iv) Family, Social and Community Division

(v) Publication Division

3) The management sector consists of 4 sections:

(i) Human Resource Management Division

(ii) Finance & Development Division

(iii) Information Management Division

(iv) Management Services Division

4) Sector under the Office of the Director General namely the Federal Territory Islamic Religious Advisor and Department of Islamic Religious Department, including Darul Quran, Malaysian Islamic Training Institute, Halal Hub, JAKIM Sabah Branch and JAKIM Sarawak Branch. These sectors have formed twenty-one parts and all are under JAKIM.

2.3 Background of Department of Federal Territory Islamic Religious Department (JAWI)

The Federal Territory Islamic Religious Department or better known with their acronym JAWI, is a government agency responsible for managing matters related to Muslims within Federal Territories of Kuala Lumpur, Putrajaya and Labuan. At the beginning of its establishment, it began with the establishment of the Federal Territory Islamic Religious Council (MAIWP) on 1 February 1974. The establishment was following the establishment of the Federal Territory chaired by Tun Abdul Razak, the second Prime Minister of Malaysia. In Phase 38A, the Federal Territories Order 1974 states that policies that have been decided by the Federal Territories Islamic Religious Council (MAIWP), must be implemented by a Secretariat. In fact, the MAIWP secretariat at that time was a unit under the Management of the National Council for Islamic Affairs, Prime Minister's Department. In 1976, This Secretariat Division has been upgraded to a department. When this Institution was approved by the Federal Government, then the Federal Territory Islamic Religious Department (JAWI) was born. Then placed under the Management of the National Council for Islamic Affairs, Prime Minister's Department. The first building was located in the old Islamic Center Building, which has now been turned into the Museum of Islamic Art in 1978. Next JAWI was placed under the Ministry of Federal Territories until the Ministry was abolished in 1987. Next it was placed under the Federal Territories Development Division in 1987 until 1998. Finally starting on 4 February 1998, it was placed under the Department of Islamic Development Malaysia (JAKIM). JAWI is an Islamic religious institution in the Federal Territory and its function is to manage, administer and coordinate the Muslim community in the Region. This institution primary roles are to manage and provide multitude of Islamic services in the area marriage, strengthening of family institution, education, management of the deceased and Muslim cemetery, mosques and surau's management, Islamic preaching, the newly converts,

Syariah law enforcement and research, with the role to form Muslims who are progressive, responsive, dynamic, and positive to the demands of Islam. The administrative centre of JAWI is in the Federal Territory of Kuala Lumpur, and has two branches following the establishment of two new Federal Territories, namely the Labuan branch which was established on 16 April 1984 and the Putrajaya branch which was established on 1 August 2001.

2.4 Background of the Islamic Marriage System

"*If you fear you might fail to give orphan women their (due) rights (if you were to marry them), then marry other women of your choice - two, three, or four. But if you are afraid you will fail to maintain justice, then (content yourselves with) one or those (bondwomen) in your possession. This way you are less likely to commit injustice."* – The Holy Quran, Surah An-Nisaa, Verse 3.

Marriage is a legal contract. Legal in both divine and human laws terms, together with a process of simple and carefully worded solemnization (*akad nikah*) that legally binds the couple together, until death do they part. These are all done with a *kadi*, who is a religious official of the Islamic Religious Department who, after all paper works are in order, to preside over the solemnization. In a normal situation, the groom's biological father was expected to undertake this function on behalf of the bride. This ceremony is, in fact, an oral contract between the bride's father or his representative (in this case, the *kadi*) and the groom during which they exchange vows. The contract is sealed by the payment of a sum of obligatory gift, in the form of a certain amount of money as a compulsory gift known as the *mahar* to the bride. There are three witnesses who must hear the discussion, and it must be articulated correctly in order for them to hear it.

It is the simplicity of this rite that draws attention to the enormous obligations that the groom has to care for his bride, and this is emphasised in a brief lecture on marriage and its responsibilities that is to be presented later by the *kadi* who will also remind that on the condition that if the groom fails to give both spiritual and bodily sustenance for his wife within a period of four momths, the marriage may be dissolved if an application for dissolution is filed with the court.

As a contract in which both parties freely agree on many terms and circumstances, including the form of the *mahar* and its value, going back on what has been agreed upon is deemed unreasonable in most cases. It is the intention of these passages on marriage to safeguard women from injustices, implying that women should not be considered property or objects in the possession of men or their family. What's more, whatever a woman owns, including her *mahar* and any gifts given to her, cannot be taken away by her spouse or claimed by his or her children.

According to Section 16 of the Islamic Family Law [Islamic Family Law (Federal Territory) Act 1984], which is in effect in all states of Malaysia, an application for marriage permission must be submitted to the Registrar for the *kariah* masjid in which the woman resides in the prescribed form for permission to marry.

Muslim couples must civilly register their marriage before or at the same time as their Islamic wedding in order to ensure that women are completely protected by the law of marriage and family.

2.5 Key Definition

The next section discusses the critical definitions used in this research, particularly the definitions of critical success factor, project success, and information technology system found in the current literature. This is important as this research focus is not on a broader sense of success, but is limited by the definition and understanding of a specific term of success. Firstly, is the identification of the components of project success. The two components of project success that has been identified by Baccarini (1999) are project management success and product success. The brief explanation for the two components is as follow:

i. Project management success gives attention to the project processes. This is in line with the definition of project management in Project Management Book of Knowledge which basically define project management as the management of processes that are required to complete a project using specific knowledge, well learned skills, appropriate tools, and techniques.

ii. Product success deals with the effect of project's final product, whether the product came out as planned, or failed to function or worked as intended to.

In order to define project success and subsequently the understanding of the critical success factors that enable or affecting the project success, these two components need to be clearly distinguished and never to be confused because one deal with processes to make the product and the other deals with the outcome of the product. According to Pinto & Slevin (1988), after surveying over 650 project managers, project success is simply not just meeting cost, schedule and performance specifications, the client's satisfaction is also

needed to be taken into account. It is also important to note that there is a distinctive difference between success criteria and success factors.

2.5.1 Success Criteria

Success criteria are the outcome area of what is to be attained, which is referred to as the 'What' (Westerveld, 2003). It is the criterion that is utilised to determine the success of a project. De Wit (1988) defined it as the measures by which success or failure of a project or business will be inferred.

Though over 20 years ago De Wit (1998) had pointed as to what could be defined as success criteria, Imam and Zahir (2021) in their research pointed out that there is no well establish approach in measuring success and the absolute meaning of project success is continued to be debated.

2.5.2 Critical Success Factors

Daniel (1961) is the first to use the term "success factors" in his paper on the crises in organisations caused by rapid organisational change, which was published in the journal Management Science. However, according to Leidecker and Bruno (1984), the concept did not pique the public's imagination until the 1970s. Further research into crucial success variables in the context of project management is done by Rockart (1979), who extends the notion further. Following that, additional authors began to use this notion in the context of strategic management, and it has since been widely accepted (Boynton and Zmud, 1984 and Jefferies et al., 2002). The word crucial success elements have also been referred to as key variables, strategic factors, key occupations, key outcome regions, and pulse points in various contexts and contexts.

Specifically, Daniel (1961) believes that a corporation must be discerning in its selection of and emphasis on only three to six success criteria, which he refers to as core occupations, and perform exceptionally well on these success elements in order to be successful. However, he does not provide a description of these success characteristics, but rather provides instances of crucial occupations in order to underline the meaning of the phrase. Rockart (1979) is one of the first authors to be more specific in his explanation, and he defines critical success factors as 'the limited number of areas in which results, if they are adequate, would ensure that the organisation achieves successful competitive performance'. They are the few critical areas where everything must be done correctly in order for the firm to succeed.

Several scholars have contributed to the refinement of the definition of crucial success factors. According to Munro and Wheeler (1980), it is defined as those tasks (Leidecker and Bruno 1984), those characteristics, conditions, or variables (Leidecker and Bruno, 1984), those few things (Boynton and Zmud, 1984), and those fundamental issues (Jeffries et al., 2002) that are critical, influence, and have a significant impact on the success of a firm. These important success criteria must be effectively preserved, maintained, and controlled in order to achieve long-term success.

Early definitions of crucial success factors place a strong emphasis on the profitability and competitive advantage of businesses operating in a specific sector. Between industries, there may be disparities in the important success criteria that must be considered. However, for each business, a collection of common important success elements that are specific to that industry may be easily determined. These factors are known as crucial success factors (Jiang et al., 1996, and Cleland, 1999). Other researchers later called into doubt the accuracy of these measurements. Lui (2004) claims that her

research into important success elements from a variety of businesses, ranging from financial services to engineering, has yielded generic characteristics that are applicable across all industries. De Wit (1988) defined it as selected inputs to the management system that contribute directly or indirectly to the success of the project or business.

There is no rules or limit to have the number of critical success factors. This was shown by Napitupulu et al. (2018) who have listed a total of 56 critical success factors, and even recommended that all 56 critical success factors listed to be adopted by government agencies of Indonesia in support of implementing e-Government projects. The authors have analysed and listed, among others, top management support, funding continuity, system quality, awareness, participation of users and stakeholders, alignment of organisation's goals and ICT direction and continues improvement as the critical success factors.

2.6 The Grouping of Critical Success Factors

Belassi and Tukel (1996) argued that grouping of success factors is more beneficial in analysing and understanding the interaction between those individual success factor. The authors continue to state that project success, or failure is the result of combination of many factors at different stages of a project life cycle. The uniqueness of projects give rise to different success factors, and individualising the success factors may not be applicable to all projects. Group of success factors may lead to the determination of the combined effects of these factors in the success or failure of project. The authors also gave an example for this combined effect. The performance of a project manager on the job is affected by factors related to the organisation, particularly the support of top management, by the project manager's ability to implement a project, by factors related to technology, the economy, and society, and by factors related to the project itself, such

as its size, value, and urgency. All of these factors combine to have an impact on the performance of the project manager. As a consequence of this, project managers will be able to recognise and get rid of the elements that have a detrimental impact on their performance if they conduct an analysis of the cause-effect link presented in the framework. The authors also pointed out that the advantage in grouping is that it will enable the process of identifying whether the success or failure of a project is related to the project manager and/or due to external factors. As a consequence of this, project managers will be able to better manage by recognising and eliminating the elements that have a detrimental impact on their performance if they conduct an analysis of the cause-effect relationships of these group of factors.

In relating the interaction of various factors that influences project success, Ballous and Bashir (2022) have iterated that project success is not resulted from a single independent event and are caused by the domino effect of various events put together.

Garousi et al. (2019) in their research have also listed 41 subsets of critical success factors and grouped them into seven groups, which are “organisational factors”, “team factors”, “customer factors”, “project factors”, “process factors”, “product-quality factors” and “satisfaction factors”.

Pakpahan et al. (2021) has listed 14 critical success factors for an IT outsourcing project conducted by Indonesian Government’s Employment Social Security Agency. These 14 critical success factors were grouped into four groups namely organisational environment, project management, partnership management, and contract/project management. The finding of their research has revealed that the highest ranking success

factor was top management support, followed by project management skill, knowledge transfer and lastly project budget and size.

2.7 The Main Critical Factor for Success

Abdullah and Ramly (2006) observed in construction industry, where the projects are technical in nature, and those involved in in project management required technical and professional training, concluded that the criticality of the success criteria is rated in the following order, according to the categorization of the factors:

i. Human
ii. Organisational
iii. Process
iv. Contractual

The building industry is regarded as a highly technical-oriented sector of the economy. In order to be able to contribute to a project's implementation, all stakeholders, including designers, project managers, experts, professional consultants, supervisors, sub-professionals, and even semi-skilled workers, must get specialised technical and professional training. However, the early analysis appears to suggest differently, with the possibility that, as in other industries, human management is the most important aspect in ensuring project success above all others (Abdullah and Ramly, 2006).

Coming back to e-Government, Ramli (2017) concluded that the implementation in the Republic of Korea has shown the importance of successful leadership influences which has been highlighted by the country's experience. Successful e-Government initiatives in the Republic of Korea were fuelled by its leader, who established a Special Committee on e-Government under the leadership of the President, which was established and

elevated as a Presidential agenda, with the e-Government project being implemented throughout all government ministries and institutes (Im and Seo, 2005).

Shan et al. (2020) concluded in the finding of their research that among the ten critical success factors that they have listed, the employee's experience in the project, support from senior management, and competency of the project manager contributed to the critical success factors of managing green building project.

2.8 Human Management and Top Management Support

The human management, which is so often overlooked or disregarded, is the primary factor in project management. Henric and Sousa-Poza (2005) underline the fact that even with the best project management techniques and processes, the project will not be properly managed even if the people engaged abused or insufficiently implemented the techniques and procedures. It is the people aspect, utilising the tools of the trade that the companies provide, that will ensure success (Gray and Lawson, 2002). Cooke-Davies (2002) and Clarke (2002) both reaffirm the significance of human resource management by arguing that human dimensions are present in all success factors and that "the people side of the success factors is woven into their very fabric." These authors suggest that the human dimensions exist in all success factors. They assert that the people are the ones who determine whether or not a procedure is adequate.

According to Belout (1998), even if there are processes and procedures, the most important thing in understanding the circumstances and the scenario is the human element's capacity for flexibility and judgement even though there are set protocols. Levine (2002) makes the observation that many project managers have a propensity to standardise the processes of project management and approach the administration of

works activities in a manner that is similar to automation. According to him, these project managers do not grasp or comprehend that there are uncertainties and dangers in projects, which should be dealt with by human management and judgement. Moreover, he claims that they do not even try to understand or comprehend this fact.

According to Slevin et al. (2002), researchers found that the most significant problems in building projects are not caused by technical issues but rather by issues related to human management. They demonstrate that projects that, among other things, have the ability to be flexible in the face of predicaments and issues are more likely to be successful. This is because flexibility allows projects to respond more effectively to unforeseen challenges. This degree of adaptability could only be accomplished through the engagement and intervention of humans. Cooke-Davies and Arzymanow (2003) are in agreement with one another when they state that the human dimension of project management consists of the people, and that the application of the expertise, knowledge, and judgement of the people makes the difference.

Top management support includes the provision of necessary resources whenever they are needed by the project (stuckenbruck, 1981; Pinto and Slevin, 1994, and Thite 2000), the readiness to take appropriate action in order to provide timely decisions (lyer and Jha, 2005), and the willingness to delegate relevant and sufficient authority, including the authority to make decisions (stuckenbruck, 1981; Pinto and Slevin, 1994, and Thite 2000). (Easton and Day, 1981; Pinto and Slevin, 1994; Jang and Lee, 1998; and Rao, 2001). In addition to that, it also includes the willingness to provide the project team with "clout" (Tettemer, 1981), the readiness to stand up for the project team when it comes to operational difficulties (lyer and Jha, 2005), and the bravery to engage in "battle" with

others in order to defend the project (Helm and Remington, 2005). In short, top management need to take the tough actions when needed.

According to Jugdev and Thomas (2002), the level of an organisational structure's efficacy is impacted by the length of time it has been in place. They describe maturity as either the organisation's knowledge-based operations or their "explicit, codified practise or know-what." It also includes the organisation's culture, which plays a role in determining the level of maturity possessed by the business (Cooke-Davies and Arzymanow, 2003). Every organisation, according to the idea of organisational maturity, progresses through a series of five stages of maturity as it develops through time. These stages are as follows: initial level, repeatable level, defined level, managed level, and optimised level. According to Cooke-Davies and Arzymanow (2003), the efficiency of the organisation improves as it progresses through the maturity stage in a step-by-step manner. Ives (2005) claims that there is a dearth of research in the field of project management literature concerning the influence of organisational context on the successful completion of a project.

Even while some of the characteristics that contribute to success have changed over the years, those that were identified almost twenty years ago still have a substantial impact on the outcome of projects in the manufacturing industry. These four factors are support from senior management, a clear mission statement for the project, and the competence of the project team. (Kuen, Zailani, and Fernado, 2009 p.025).

Adedeji et al. (2019) has listed human factors as one of the critical success factors in successful adoption of e-Procurement system in Nigerian construction industry. The authors also noted that the organisational factors which include top management support

and attitude towards the use of the technology, and added that budget and financial allocation, employees' knowledge in the system are also the critical success factors.

Lang (2021) has listed the role of top management as one the critical factor in ICT project in digital transformation process in Germany that aims to make further improvement by combining several technologies together, which are information technology, computer technology, communication technology and connectivity technology. The author further explained that the role of top management is clustered into sub categories of top management support, expertise as well as strategy and vision.

Raharjo et al., (2018) in their research on Indonesia's IT project which are highly dependent on Project Management Office (PMO), have shown that top management support ranks as the top critical success factor, followed by having an organisation that is visionary, with a clear mission and having a standard process. The authors continued by stating that the next most importance critical success factors are the quality of leadership in the organisation and having a knowledgeable team in the PMO. The authors concluded that IT project should not only focus on their project teams, but also need to make extra effort to obtain and gain top management supports.

2.9 Project Success Framework

De Wit (1988) developed a framework for the successful completion of a project that takes into account the various stakeholders, the goals of the project, and the management of the project, as depicted in figure 2.1. He propagates the idea that there are two components to project success, namely the criteria for success and the way in which these objectives are reached, and he arrives at the conclusion that "the degree to which these objectives have been met defines the success or failure of a project."

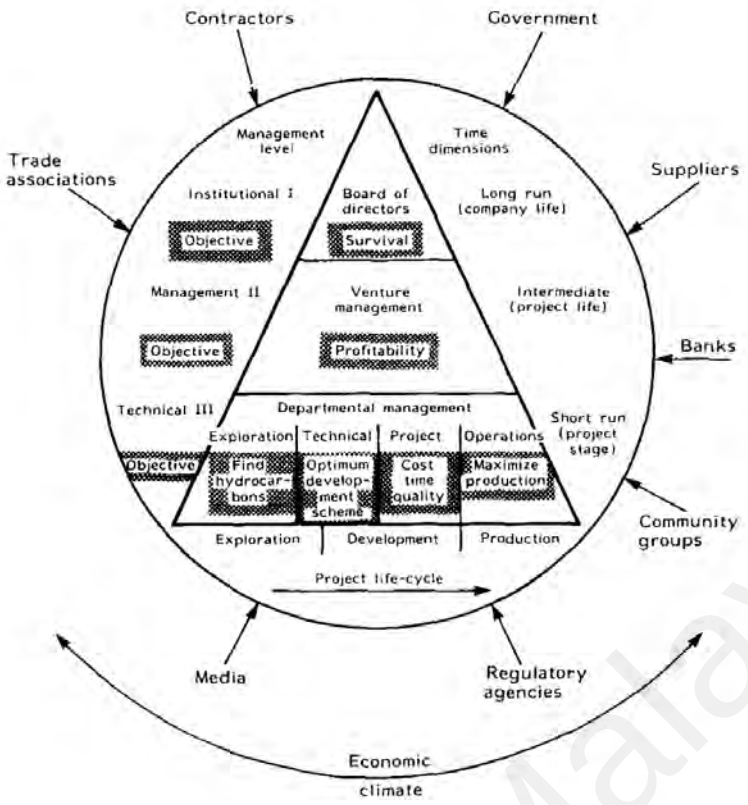

Figure 2.1: **Project Success Framework by De Wit (1988)**

Alias et al. (2014) in their research of project success used a conceptual framework shown in figure 2.2 to show the connection between the variables affecting project performance, the Critical Success Factors, and the final result of the project

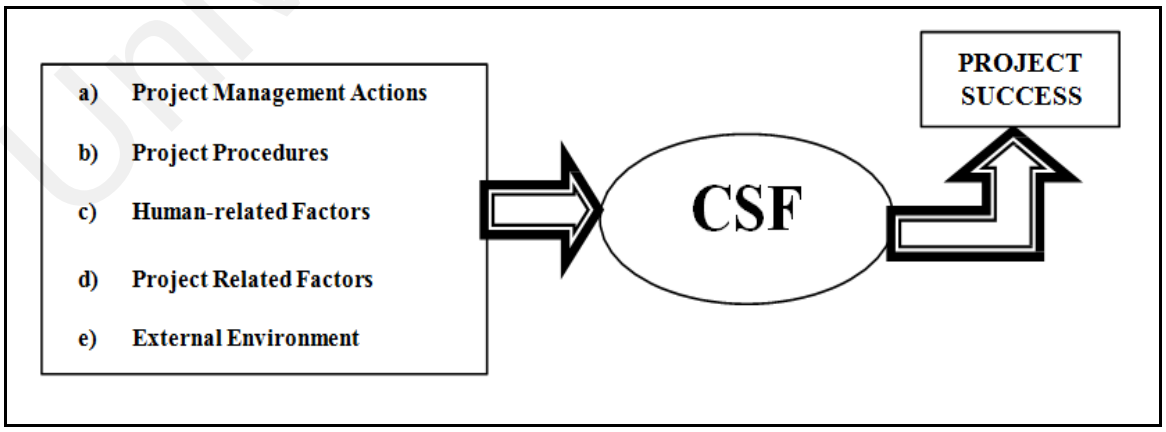

Figure 2.2: Conceptual Framework by Alias et al. (2014)

2.10 Summary of Chapter

The literature review was presented in Chapter 2, and it related to both the topic in general and the success of the project in particular. In the beginning, it highlights topics that are relevant to the implementation of the project, such as the definition of the project, project management, crucial success elements, and the life cycle of the project. After that, it delves deeper into the concept of what constitutes a successful project and provides an in-depth explanation of the project's two constituent parts, namely success criteria and success factors.

The literature review was helpful in developing the idea of project success and determining the many different criteria and elements that contribute to project success. According to the research that has been conducted, a successful project is one that is finished on time, under budget, with high quality, and to the satisfaction of the stakeholders. Each of these criteria can be met by utilising the factor groups of human management, process management, organisational management, and contract and technical management. In addition, the research that has been done on the topic emphasises the fact that the human factor is invariably included as a component of project success criteria and success factors in the majority of studies.

Chapter 3: METHODOLOGY

3.1 Introduction

The research methodology is critical in leading the researcher through the process of achieving the research 's goals and objectives. This chapter will outline the approach that was employed in the course of doing this research. The research was carried out in two stages: initially, through a review of the literature, and then with questionnaire. Thereafter, the questionnaires, as well as the results and inferences drawn from them, are provided. Following that, there will be discussions and ideas, and eventually conclusions will be reached to bring the research to a conclusion.

3.2 Research Design

The instrument used for this research is using a structured questionnaire. According to Dillman et al. (2008), an effective questionnaire is analogous to a conversation that follows a clear, logical progression of questions and answers. This involves starting with questions that are simply understood and salient, as well as grouping-related questions that are related to similar topics. In particular, while conducting web surveys, the initial questions must be carefully picked. Unlike with mail surveys, respondents are unable to look at all of the survey questions at the same time. As a result, the initial questions are critical in piquing their interest in the survey. As a result, all respondents should be able to answer these questions. In addition, respondents should be informed about the survey's topic and given the opportunity to give their consent before to taking part in it during the survey's introduction. As previously stated, there is evidence that an engaging survey topic can enhance the response rate, and this can be taken into consideration in the survey's introduction (Groves, 2004; Zillmann, 2014). Despite the fact that it is impossible to evaluate a topic-related selection bias in survey participation, researchers

should take this possibility into account (Nielsen et al., 2016). A poll on environmental concerns, for example, is more likely to yield responses from those who have a strong interest in environmental matters or a high level of worry about environmental issues. A potential bias of this nature could be reduced by broadening the scope of the poll and survey topic (e.g., quality of life in a region which also includes environmental issues).

According to some polls, respondents must be screened out at the outset of the survey if they do not fall within the desired demographic. In this situation, after answering the screening questions, both eligible and ineligible respondents should be routed to the main survey in order to record their non-response. Those who are found to be ineligible should receive a thank you letter following their screening process.

It is a well-known fact that replies to survey questions can be influenced by the context in which they are asked (Schuman et al., 1981; Tourangeau et al., 2000; Moore, 2002; Dillman et al., 2008). There are two kinds of context effects that can be distinguished (Tourangeau et al., 2000, p. 198). At the outset, when answers to a target question such as choice experiment tasks are dependent on whether context questions such as relevant attitudinal questions are placed before or after the target question, the directional context effect is present. Another type of correlational context effect arises when the correlation between replies to the target and context questions is modified by the sequence in which the questions were presented to the participants. Because of this, the link between attitude assessments and responses to choose tasks can be influenced by the order in which questions are asked, for example, Due to the fact that assessing important attitudes prior to choice tasks may give an "interpretive framework" (Tourangeau and Rasinski, 1988) with regard to the choice questions, it is likely that reported preferences will be influenced

by the context of the question (Tourangeau and Rasinski, 1988, p. 306). The presence of this type of context impact in surveys has only been explored in a few research papers. The inclusion of relevant belief and attitude questions prior to the valuation question, as demonstrated by Pouta (2004) in a contingent valuation research, increases the likelihood that an environmentally friendly alternative will be chosen, as well as the respondents' willingness to pay for environmental forest regeneration practises in Finland. Within the context of an ethical consumption research, Liebe et al. (2016) discover positive evidence for a directional context effect in the choice experiment design they used. This should be considered when developing a questionnaire because stated preferences and estimations are likely to be altered by whether or not relevant attitudes are polled before to or after the choice tasks in the experiment. In certain circumstances, it may be regarded important to guarantee that respondents have evaluated their own attitudes before responding to preference eliciting choice activities; in other cases, it may not be considered important to do so.

To ensure that respondents can make educated judgments that are consistent with their interests, the hypothetical market must be defined in as much detail with as much precision as feasible. The goal here is not to overwhelm respondents with information, but rather to identify the most significant elements of the market environment.

It is possible to design questionnaires to specific research aims, which is a significant advantage of using a survey approach rather than relying on secondary data sources (Tricker, 2001). Despite the fact that this research deals with subjective and abstract measurements, they can be converted into numerical data through the use of a scale and examined using statistical analysis (Mahdzan, 1992). Thus, the important scale and the

ranking scale employed are the five-point scale of 1 to 5, with the following values for 1 and 5: (l) least important, (2) quite important, (3) important, (4) very important, and (5) most important are the five categories of importance listed above. Additionally, the grade of agreement was based on a Likert scale from 1 to 5, with 1 being least important and 5 being most important.

The questionnaire is distributed via online messaging to 42 officers and support staff of Family, Sosial and Community Division of the Department of Islamic Development Malaysia (*Jabatan Kemajuan Islam Malaysia*) who serves as the super administrator and technical expert and directly engaged in the development and upkeep of this system at national level, as well as 20 officers and support staff of the Federal Territory Islamic Religious Department (*Jabatan Agama Islam Wilayah Persekutuan*) from different background consisting of management and support staffs from Marriage and Family Development Division who are the user of the system and the management and support staffs from Information Technology Management Division, who monitor the system at the Federal Territory of Kuala Lumpur, Putrajaya and Labuan state level. 1 former IT officer from JAWI was selected too as the officer has had more than 10 years of experience as administrator of the system. The officer was just transferred to another ministry in year 2020. The selection of these internal 63 officers and support staff of selected divisions of JAKIM and JAWI is based on their direct involvement with the development and the usage of the system. Survey from external users is not conducted as external users who are those applying for marriage, is not involved in the development of system. Officers and support staff from other divisions are also not surveyed as other divisions in JAKIM and JAWI do not use the system.

3.3 Questionnaire Design

The content of the questionnaire was developed based on the literature review done for the related information about the critical success factors. A short explanation is attached to the questionnaire to explain the details of each of the sections.

All the questions in the questionnaires require the respondents to choose the level of importance of the listed success factors which are divided into three groups. The respondents are asked to evaluate each factor according to the level of importance using a Likert scale ranging from 1 to 5. The number denotes the crucial level of importance for each group of factors. The higher the value of the number reflects, the greater the level of importance. The respondent's demographic information is collected in the first section of the questionnaire (section A). In Section B, respondents will be asked a series of questions on "Human Management" factors which consist of a total of 17 questions. In Section C, respondents will be asked a series of questions on " "Process" factors which consist of a total of 12 questions. In Section D, respondents will be asked a series of questions on "Organisation" Factor, which consist of a total of 14 questions.

3.4 Relative Importance Index (RII)

The statistical method of Relative Importance Index (RII) is employed in this research to analyse the response obtained from the selected respondents. The score calculated will then be ranked and sorted from the highest score to the lowest score for each factor. The RII has the range score from 0 to 1. The score of RII is an indicator of level of importance of the critical factors in this research. The higher the score, the most important the critical factor is (Husin et al., 2019).

The frequency from the responses of the questionnaire on the critical success factors are tabulated using SPSS. From there, the data are transferred to MS EXCEL sheet for calculation using the formula RII = ΣW/ A*N, where W is the scale for rating a factor (Likert scale from 1 to 5, 1 being the least important, and 5 being the most important), and A is the highest weight in the Likert scale, which is 5. N is total number of respondents, which is a constant 60, as 60 respondents answered all questions in the questionnaire. The RII is calculated for each section of the questionnaire, which is section B, the Human Management factor section, section C, the process factor section, and section D, the organisation factor section. Section A, the demography section of the respondent is not calculated as it only shows the background of the respondents.

3.5 Summary of Chapter

This chapter provides an overview of the methodology that were employed in order to carry out the research. Analytical research conducted on the many portals available on the internet and literatures have uncovered all of the potential success criteria and success factors. The answers that were given by those who participated in this research were used to determine the most critical success factors for a successful project. In order for the researcher to accomplish this goal, a structured questionnaires were distributed to a group of carefully selected officers and staffs of the Islamic religious agencies who were involved as either the user of the system or the administrators of the system.

CHAPTER 4: DATA ANALYSIS

4.1 Introduction

This chapter describes the simple and direct analyses of data through the rate of responses obtained from the questionnaire distributed to the selected respondents. There are two parts to the analyses. Firstly, the analyses are on the background of the respondents. Secondly, the analyses are on the interpretation of responses with regards to critical success factors using statistical tools of SPSS, MS EXCEL and Relative Importance Index (RII).

4.2 Background and Selection of Respondents

A total of 63 respondents are identified and selected based on their suitability and responsibility in using and administering the system, or have direct involvement in the system. These respondents are officers and staff of in management and professional group and support group, from both Islamic Affairs (*Hal Ehwal Islam*) and Information Technology schemes, and are mainly from JAKIM and JAWI, with only one respondent is from the Ministry of Youth and Sport. The respondent from Ministry of Youth and Sport has served in JAWI Information and Communication Technology Branch for over 14 years before being transferred to Ministry of Youth and Sport in July 2020, and was among a few long serving Information Technology Officer who were involved in the administration of the system. The age of the majority of the respondents (56.7%) are between 31 to 40 years of age, while 31.7% are between 41 to 50 years of age. The remaining 11.7% are between 20 and 30 years of age. More than half of the respondents or representing 55% are from the Management and Professional Group, while the rest, or 45% are from the Support Group. Both Management and Professional Group and Support Group consist of only Islamic Religious Affairs (*Hal Ehwal Islam*) and Information

Technology Schemes. The majority of the respondents (33 respondents or 55%) have working experience in government sector of between 10 to 14 years, while 21.7% of the respondents have served the government for between 5 to 9 years, 20% of the respondents have between 15 to 19 years of working experience, 1 respondent has less than 5 years of working experience and only one respondent has more than 20 years of working experience in the government sector. Half of the respondents (30 respondents or 50%) have more than 5 years working experience with the Malaysian Islamic Marriage Management System, 36.7% or 22 respondents have between 1 to 3 years of experience with the system, 6 respondents have between 3 to 5 years of experience with the system, while only 2 respondents have only less than 1 year of experience with the system. With the wealth of experience with the system that the respondents have, it is anticipated that they will be able to provide accurate and reliable feedback in the questionnaire given. The graphical representations of the demography of the respondent are shown as below:

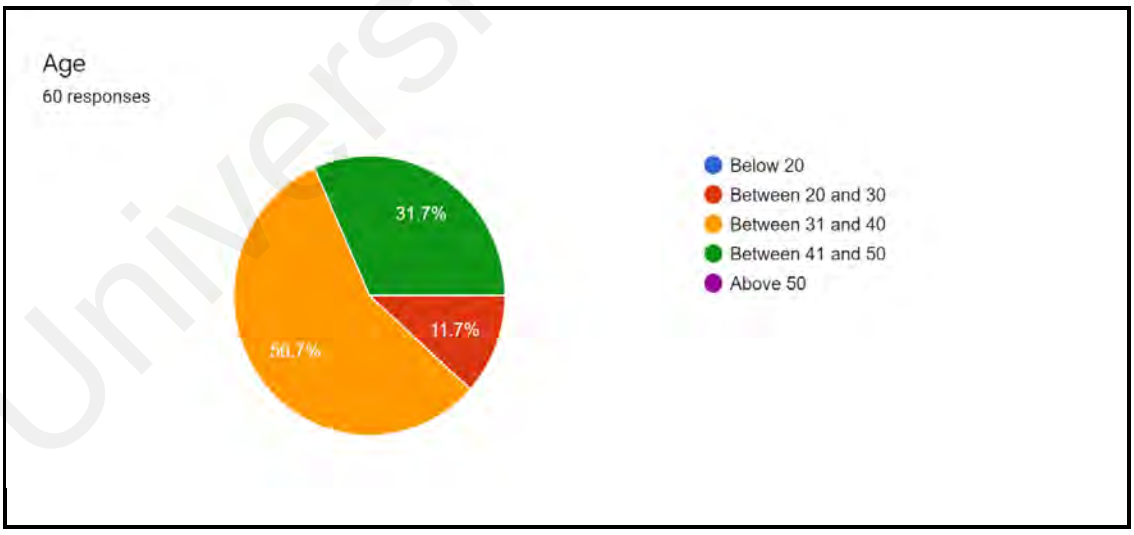

Figure 4.1: Age

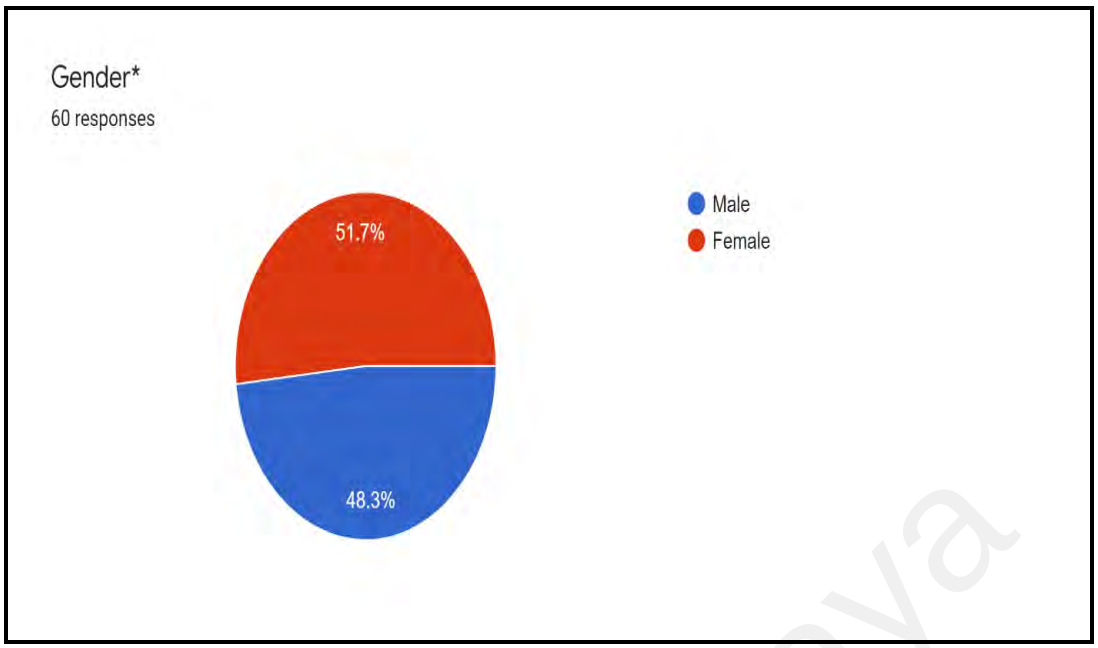

Figure 4.2: Gender

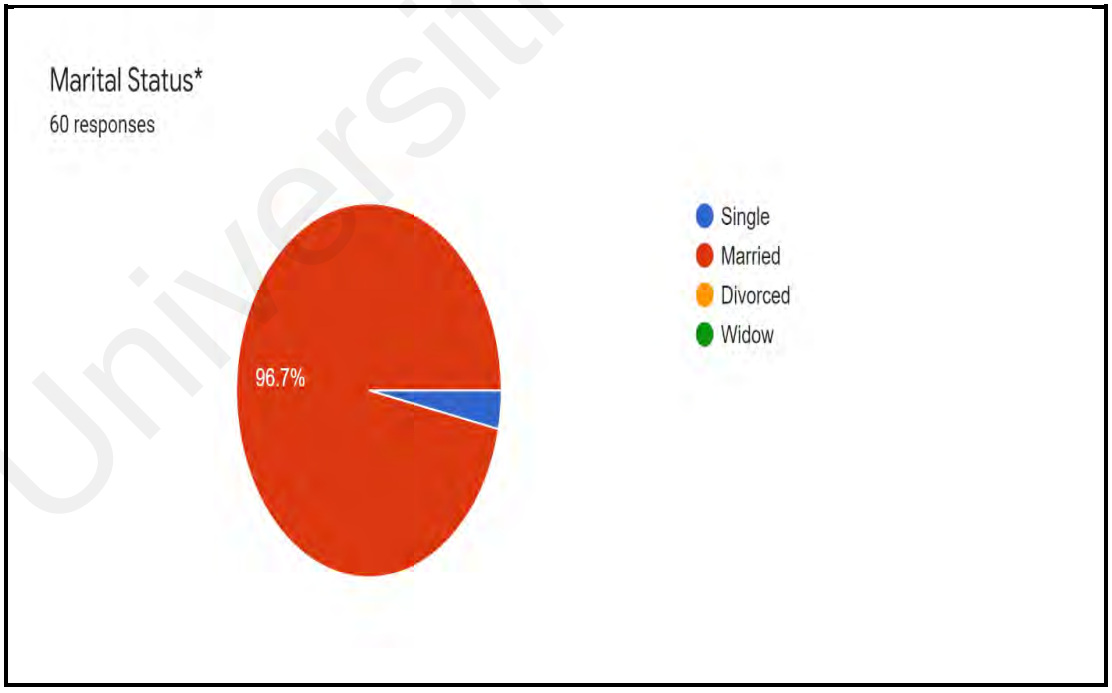

Figure 4.3: Marital status

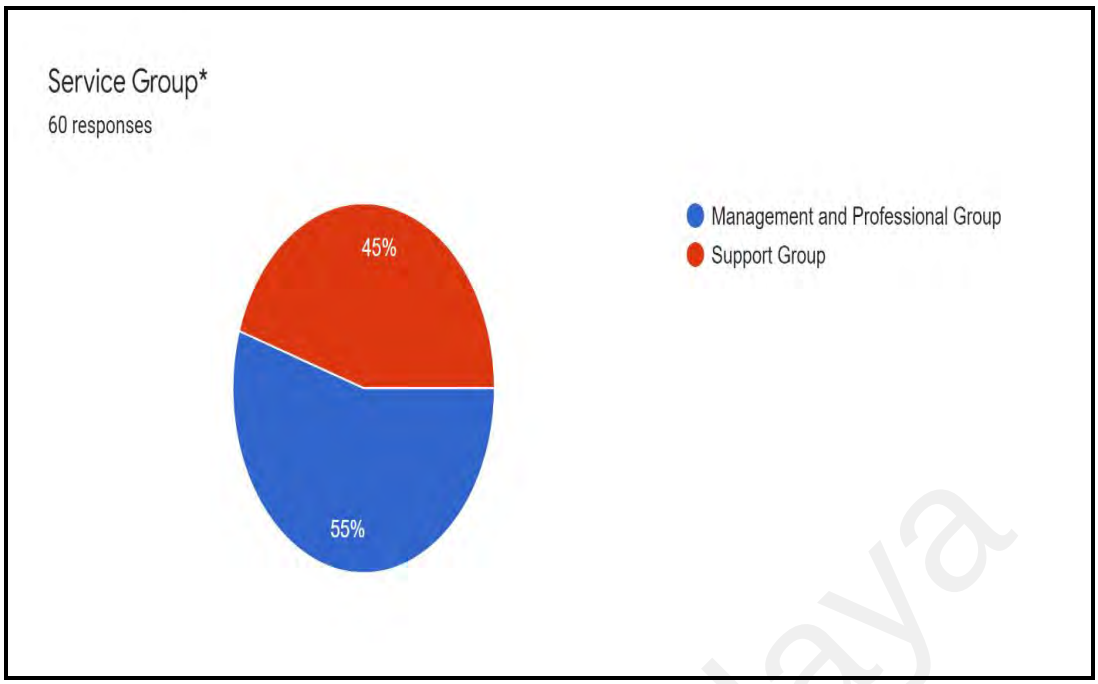

Figure 4.4: Service group

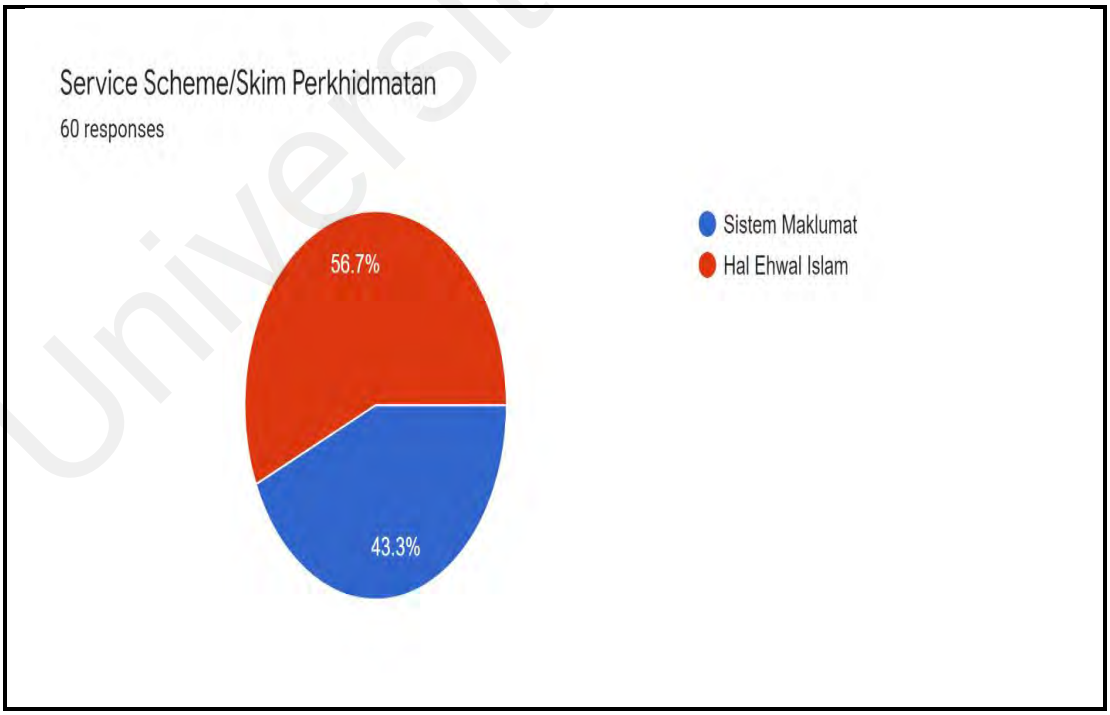

Figure 4.5: Service scheme

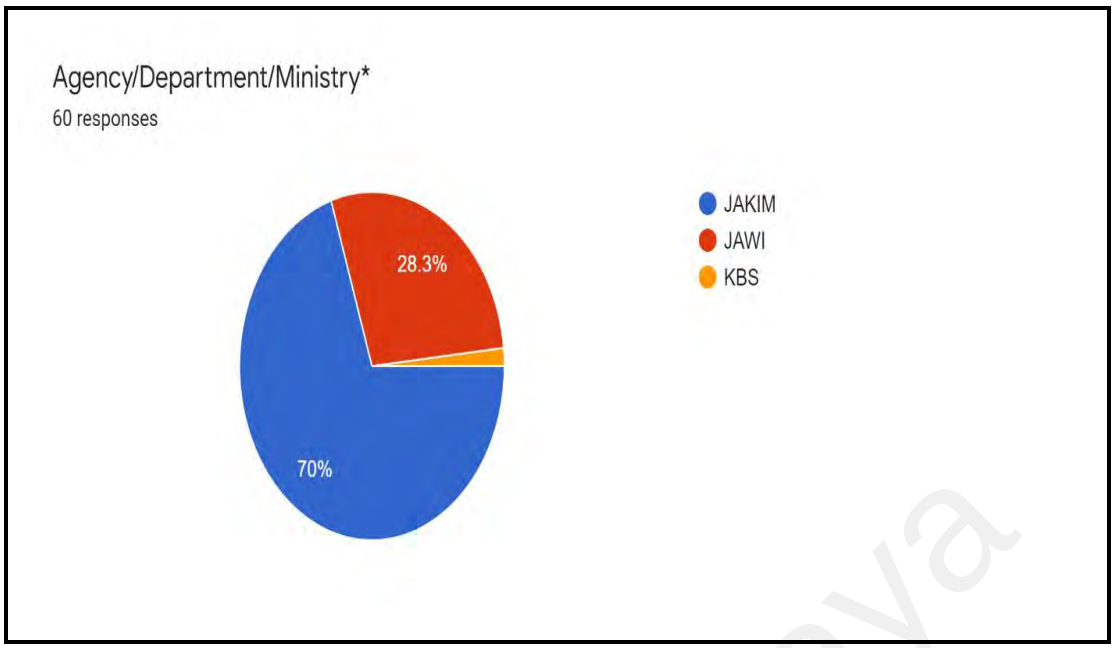

Figure 4.6: Agency/department/ministry

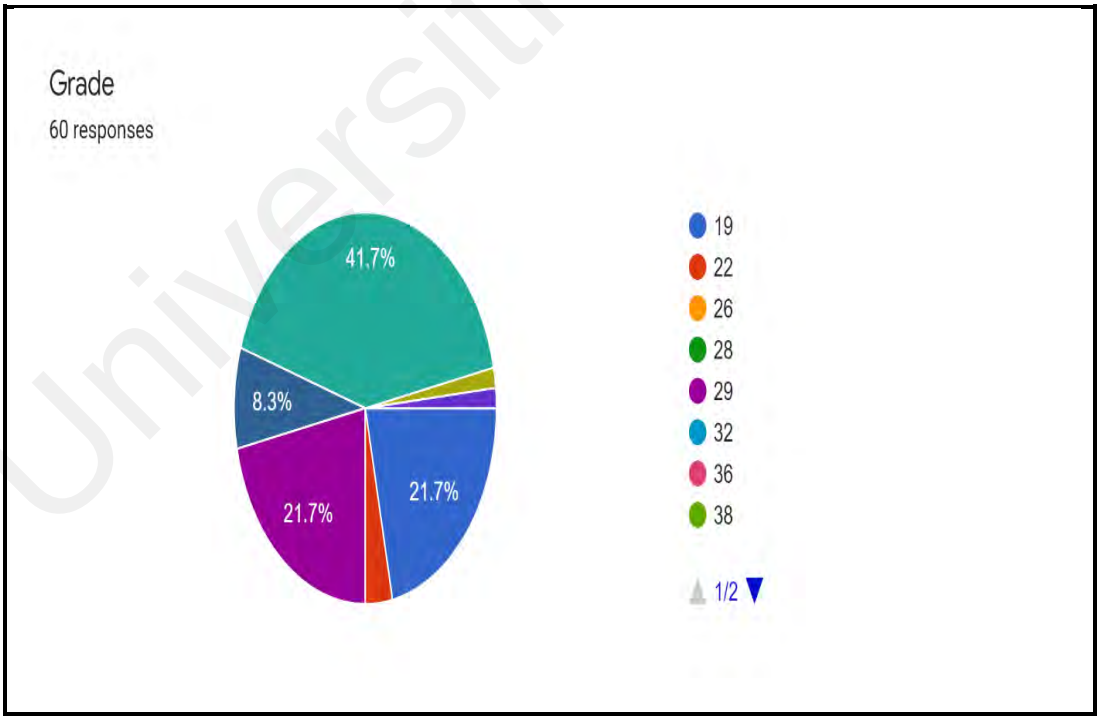

Figure 4.7: Grade

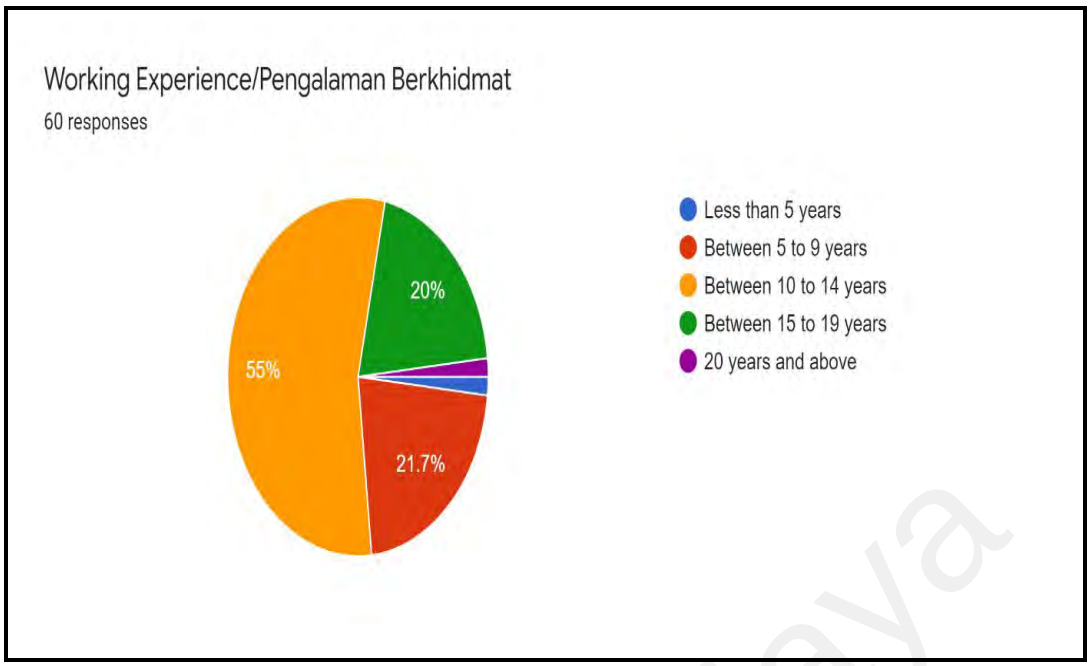

Figure 4.8: Working experience

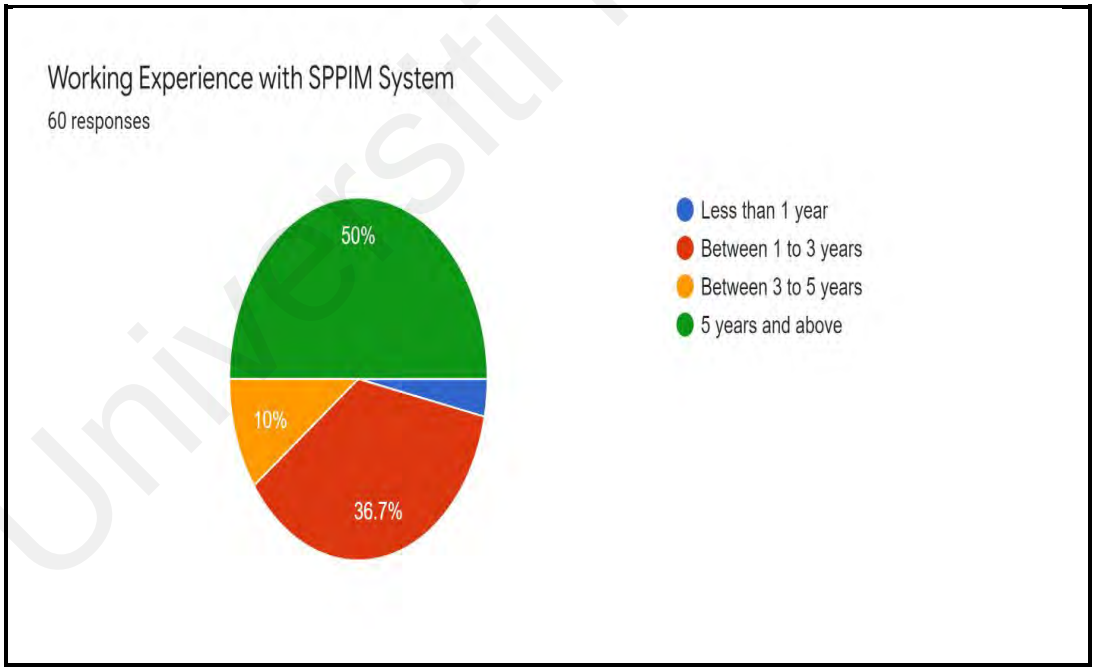

Figure 4.9: Working Experience with Malaysian Islamic Marriage Management System

4.3 Response Rate

In this survey the questionnaires were sent to 63 identified respondents from JAWI and JAKIM. Out of 63 identified respondents, 60 replied to the survey questionnaire. This gives a response rate of 95.24%.

4.4 Analysis from the Questionnaire's Response

The success factors pertaining to "Leadership/Top Management (Support, Awareness, Knowledge, Policy and Flexibility)", "Readily Available Financial Resource" and "Users (Awareness, Knowledge, Acceptance)" have the highest ranking within the "Human Management" success factor group, with 57 out of 60 respondents selected "most important" for these factors. While most respondents selected moderately important to important on the "process" group of success factors, especially on factors relating to quality plan and quality control and project to be completed within the required quality and only 6.7% to 11.7% of respondent selected the factor as "most important", indicating that the "process" group of success factors do not represent a significant important as the critical success factors for the development of the system. For the "organisation" group, the responded emphasized on the "supportive office environment", "supportive colleagues" as well as "sufficient financial resources" as the most important factors. All these finding have confirmed the various previous studies done by other researches in determining the critical success factor of a project success. The graphical representations are shown below:

"Human Management" Factor:

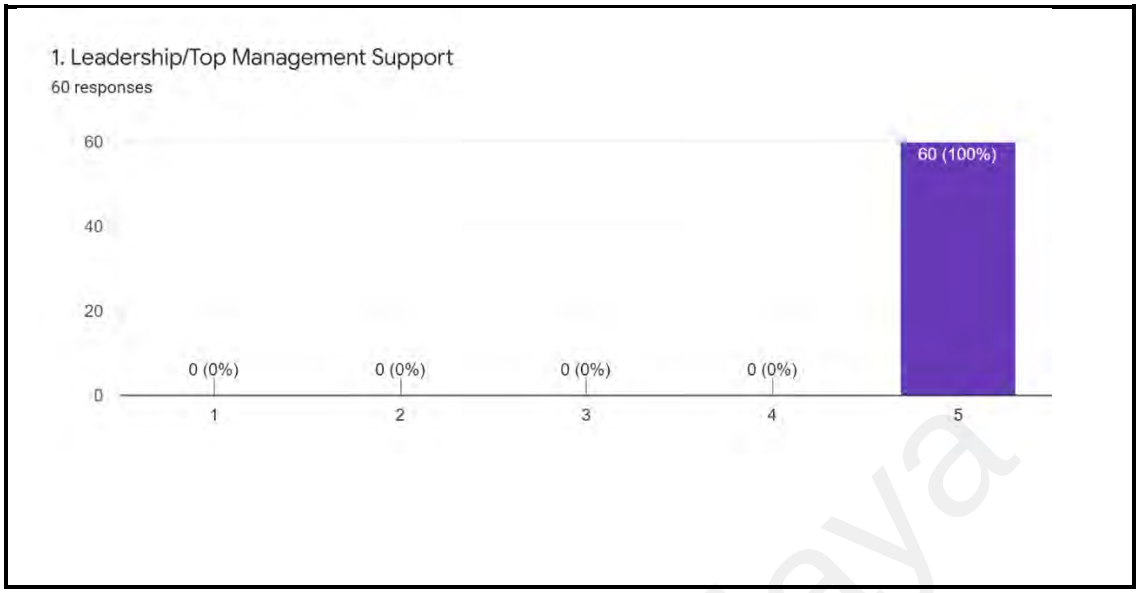

Figure 4.10: Leadership/top management support

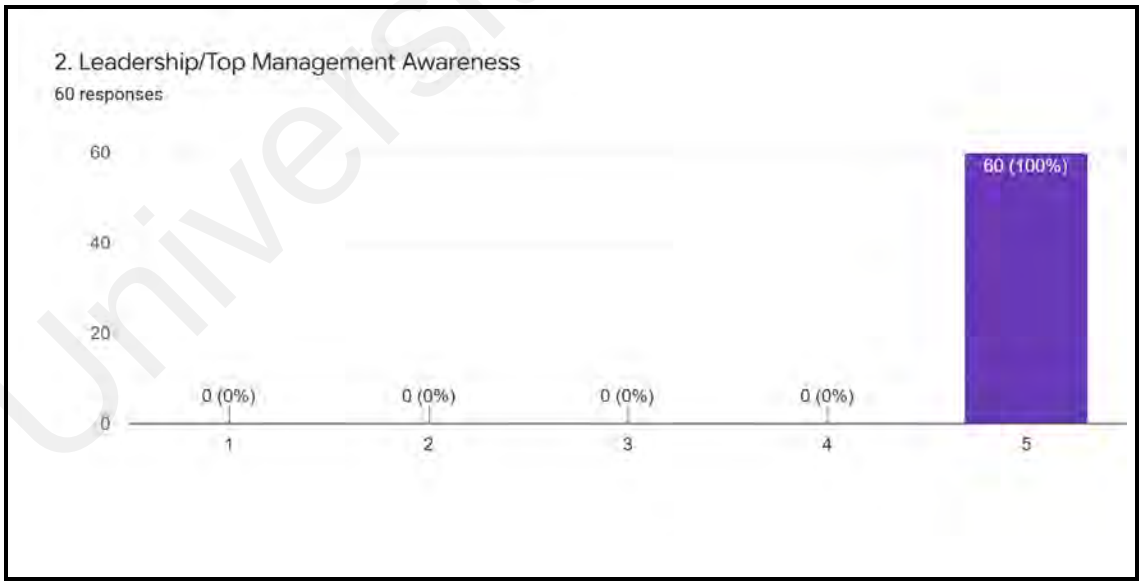

Figure 4.11: Leadership/top management awareness

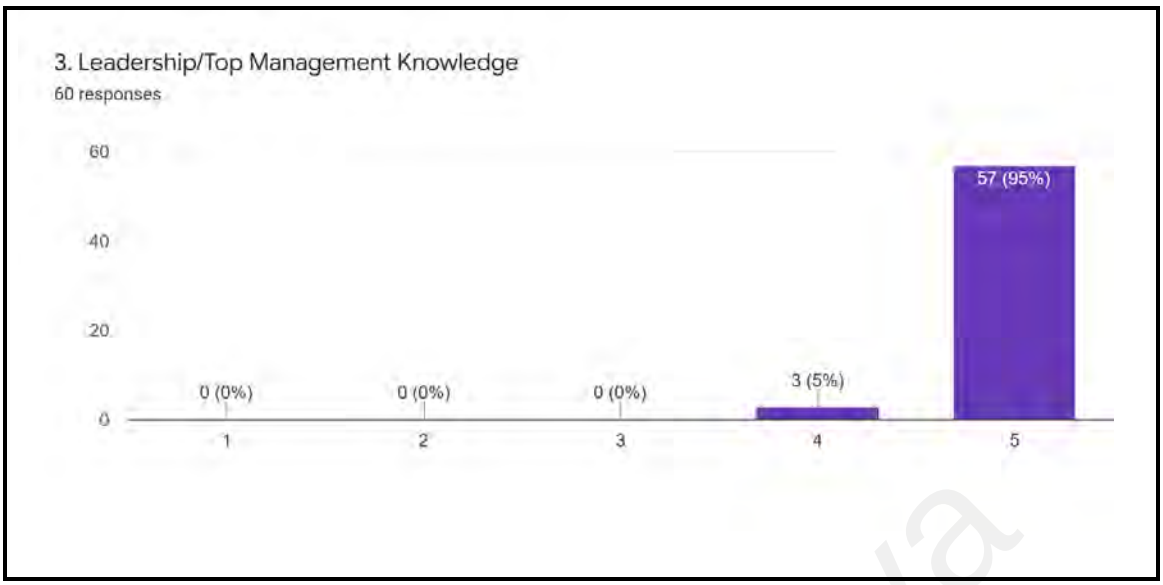

Figure 4.12: Leadership/top management knowledge

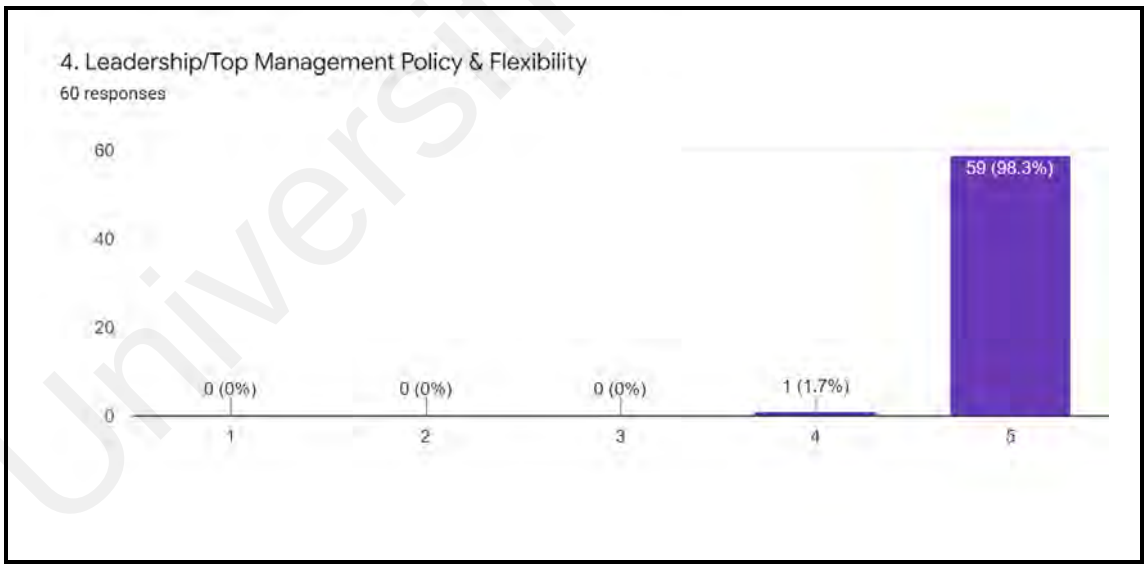

Figure 4.13: Leadership/top management policy & flexibility

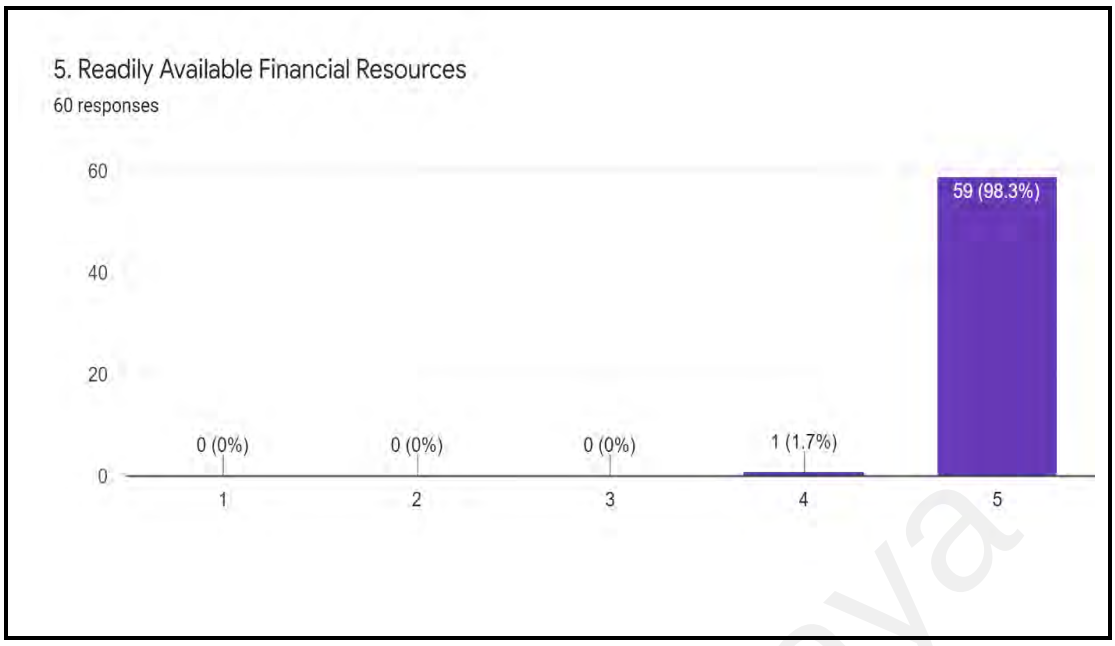

Figure 4.14: Readily available financial resources

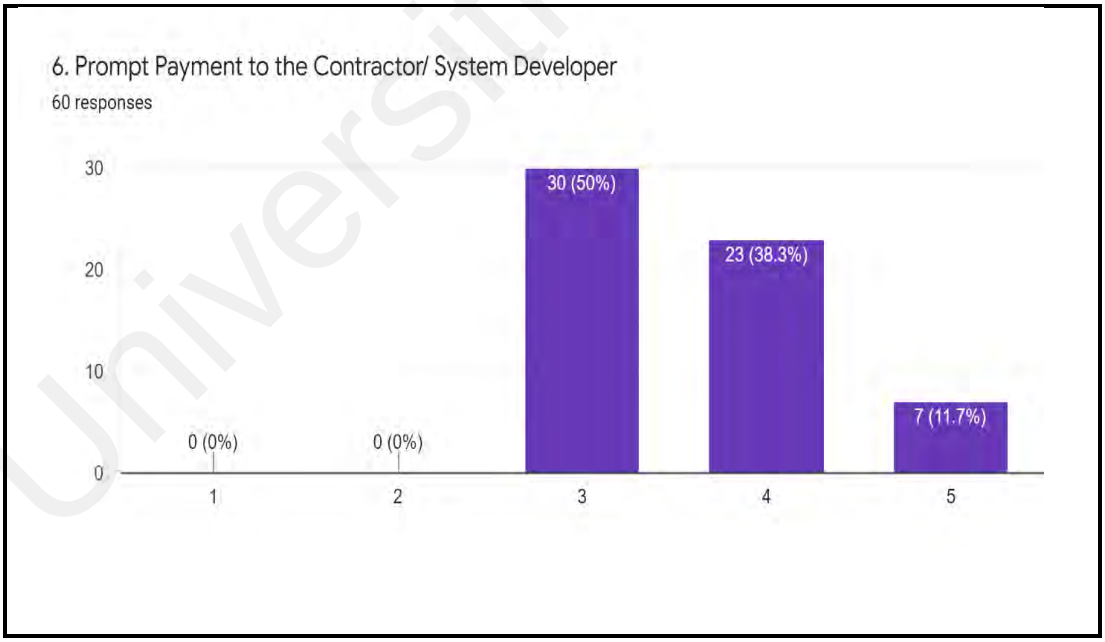

Figure 4.15: Prompt payment to the contractor/ system developer

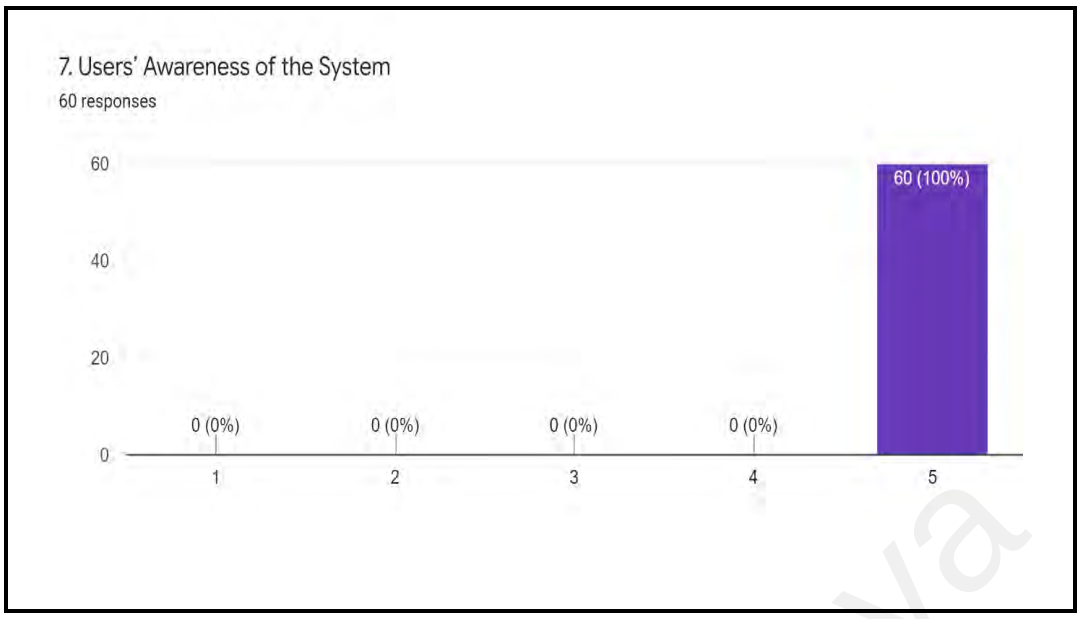

Figure 4.16: Users' awareness of the system

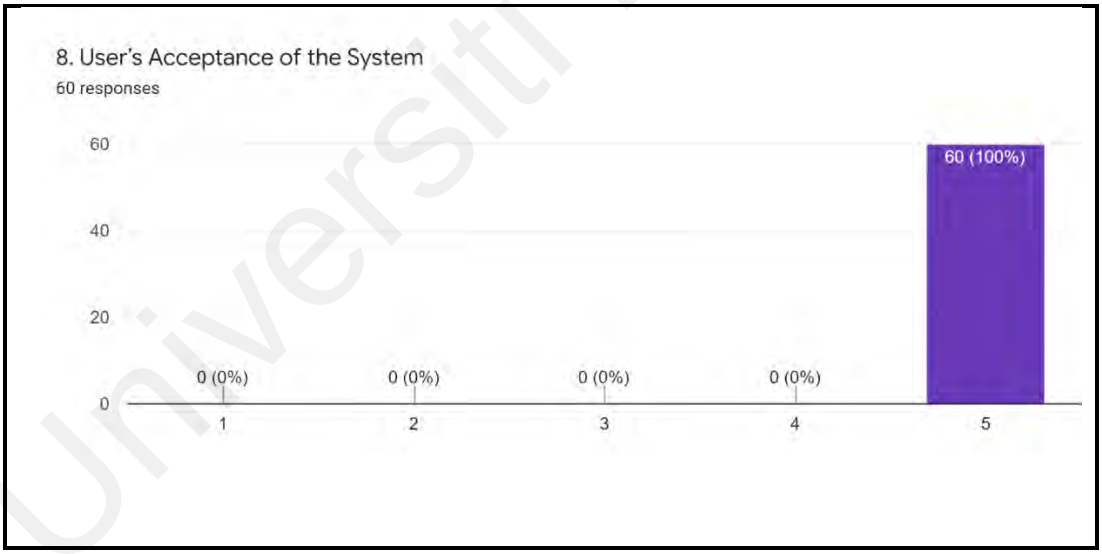

Figure 4.17: User's acceptance of the system

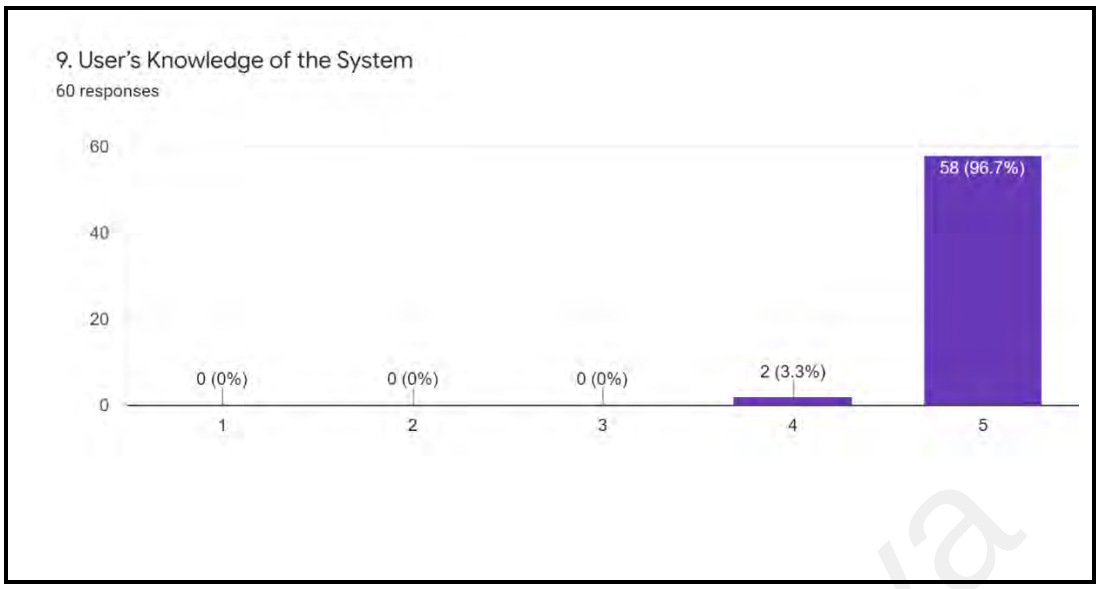

Figure 4.18: User's knowledge of the system

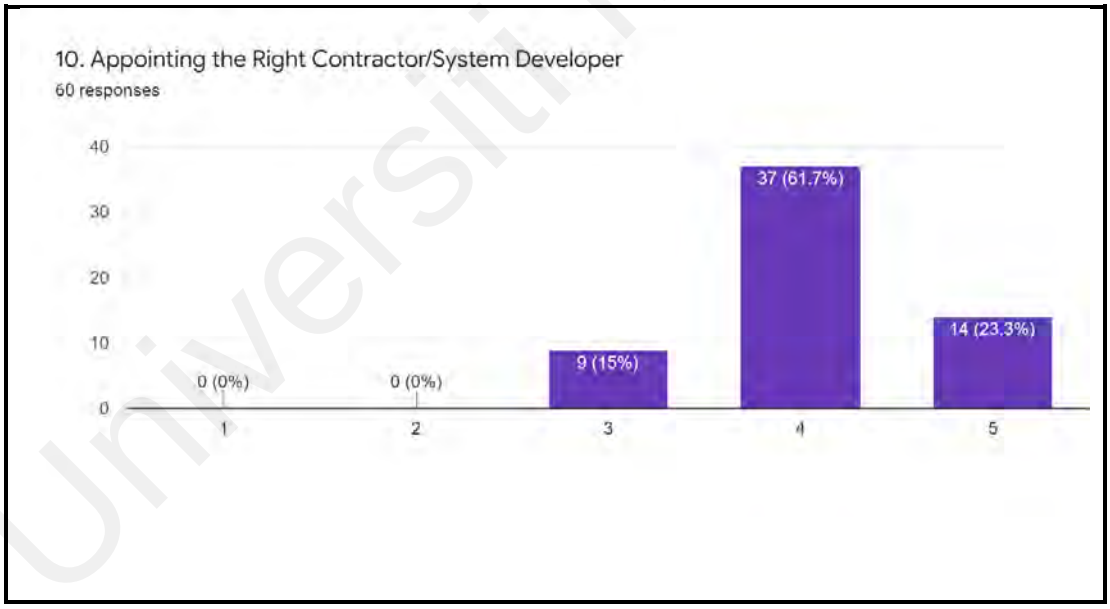

Figure 4.19: Appointing the right contractor/system developer

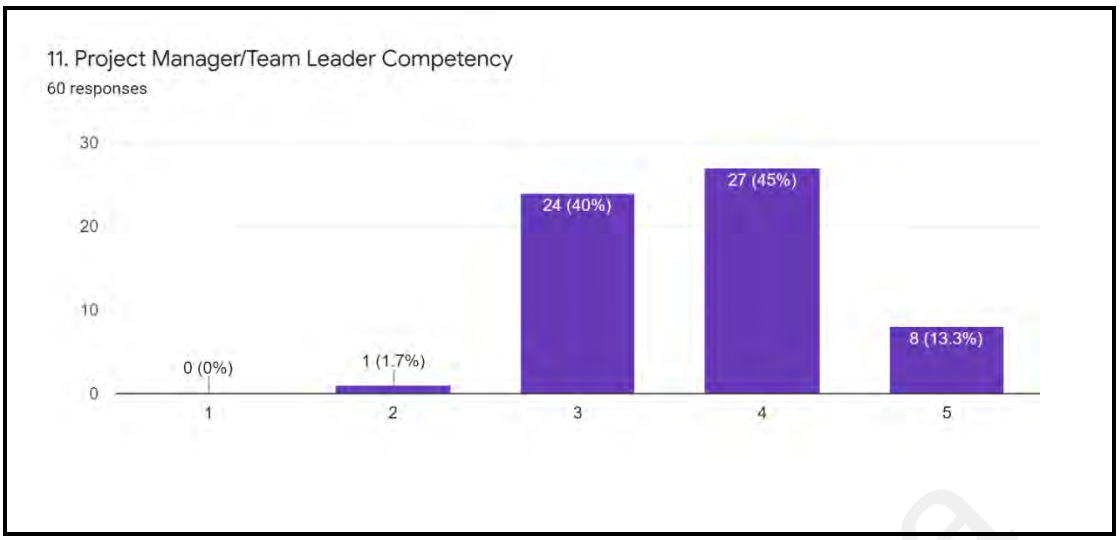

Figure 4.20: Project manager/team leader competency

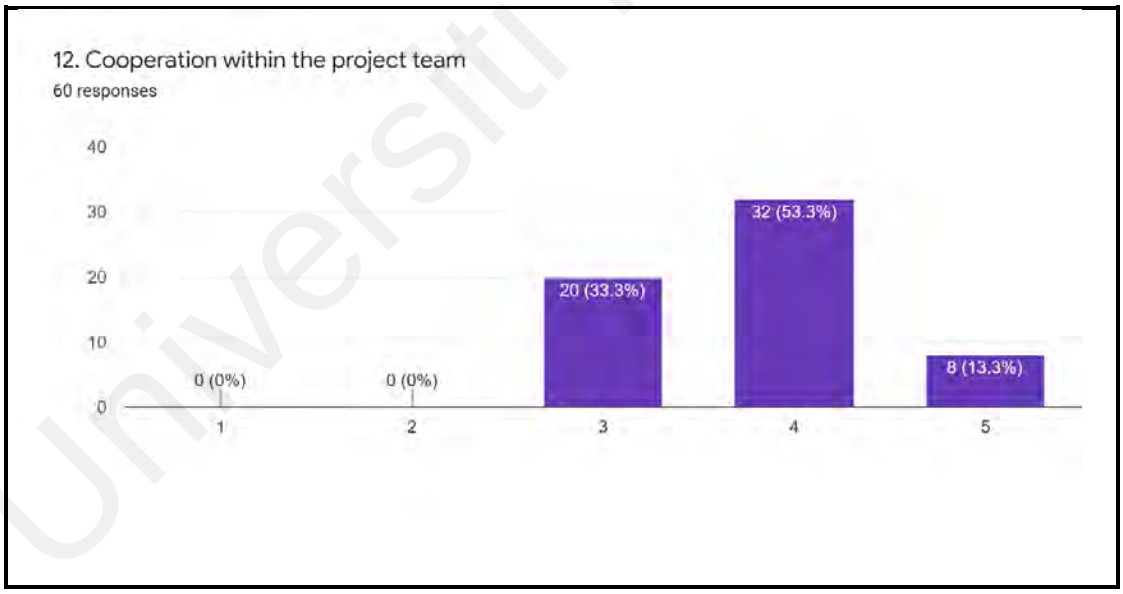

Figure 4.21: Cooperation within the project team

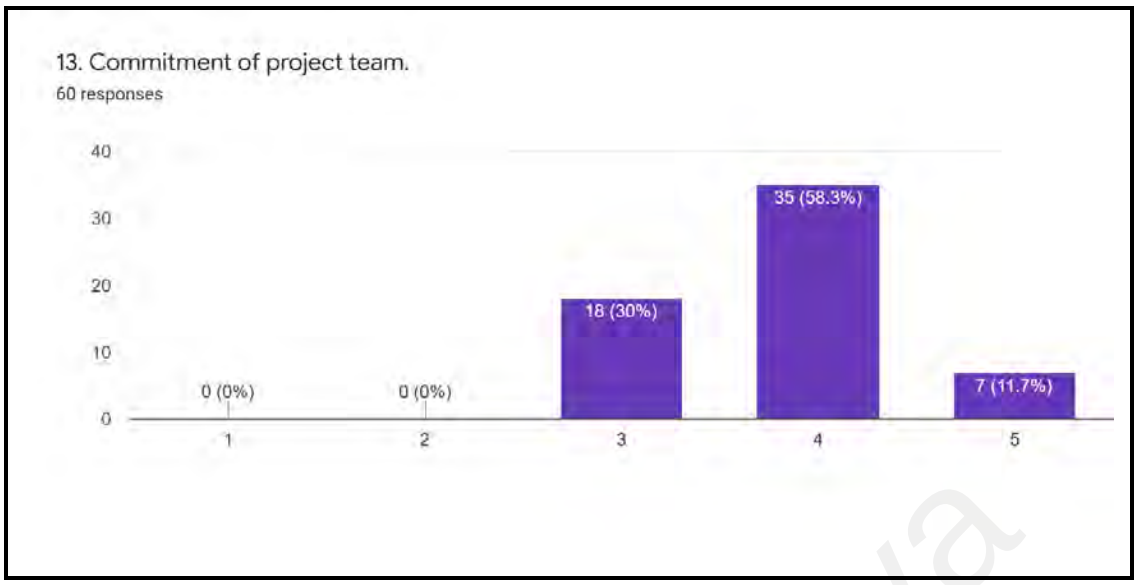

Figure 4.22: Commitment of project team

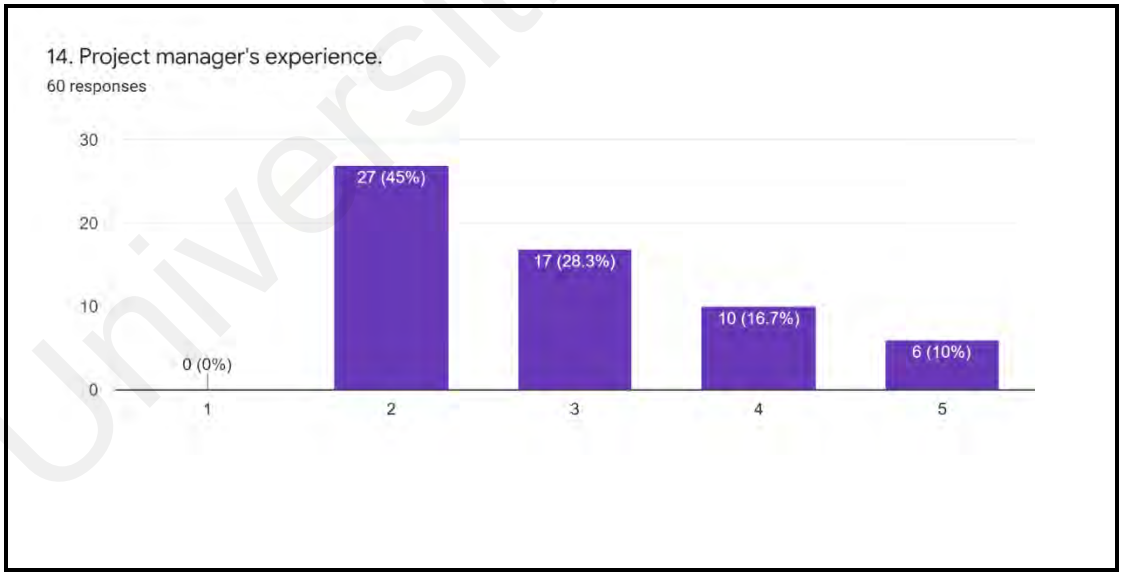

Figure 4.23: Project manager's experience

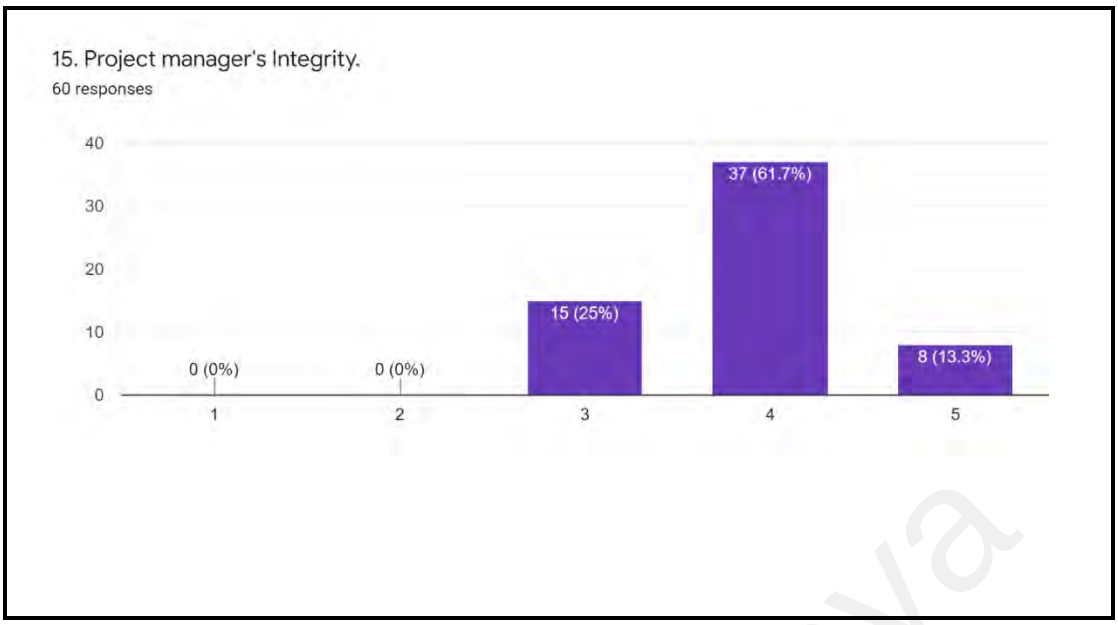

Figure 4.24: Project manager's Integrity

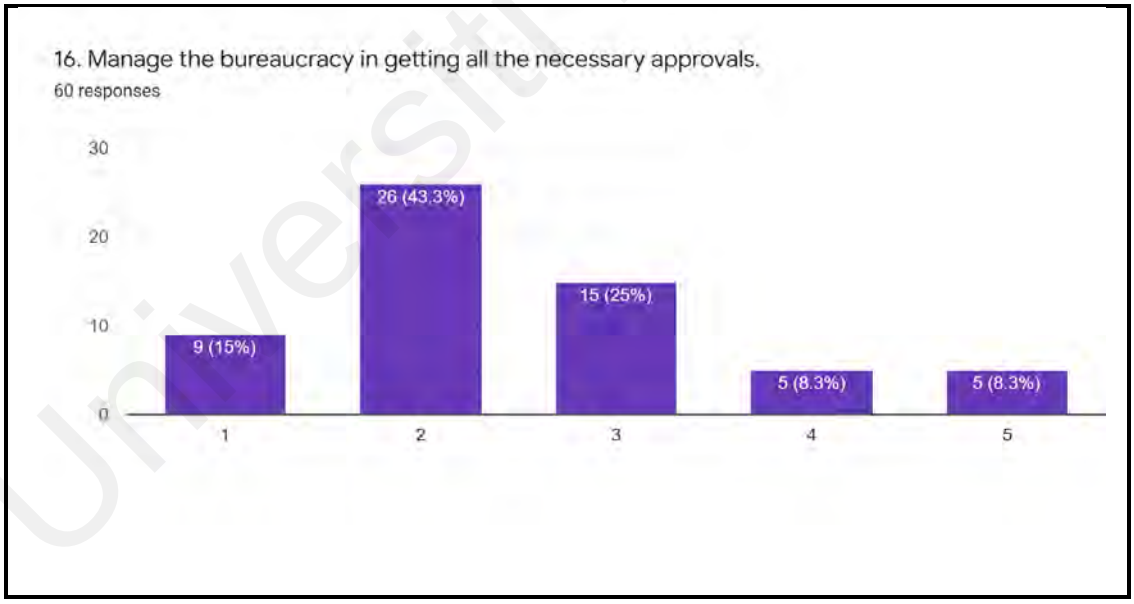

Figure 4.25: Manage the bureaucracy in getting all the necessary approvals

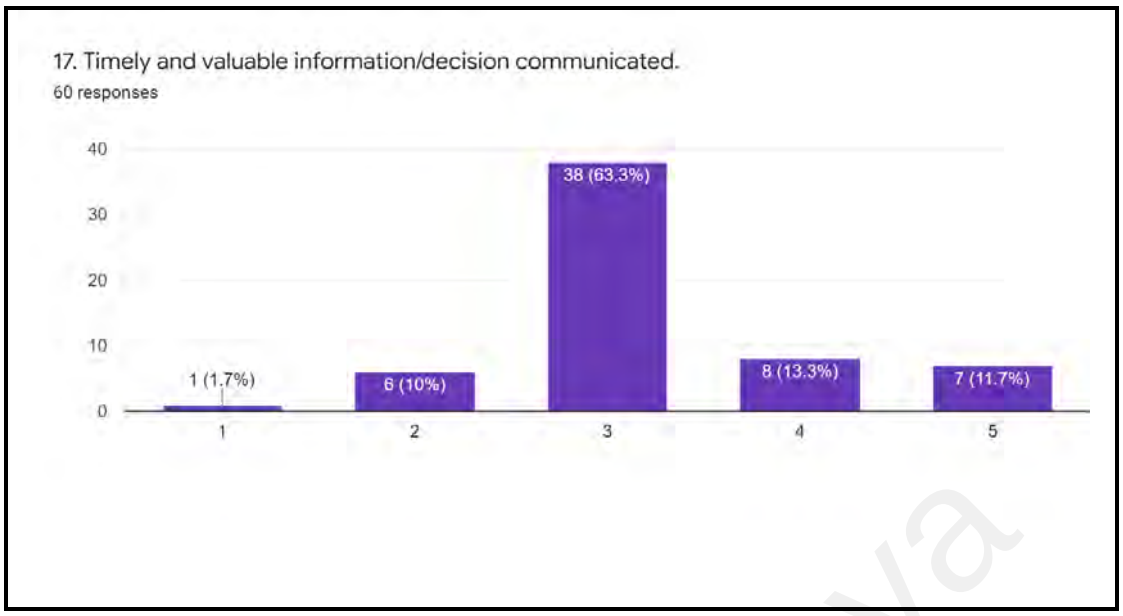

Figure 4.26: Timely and valuable information/decision communicated

"Process" Factor:

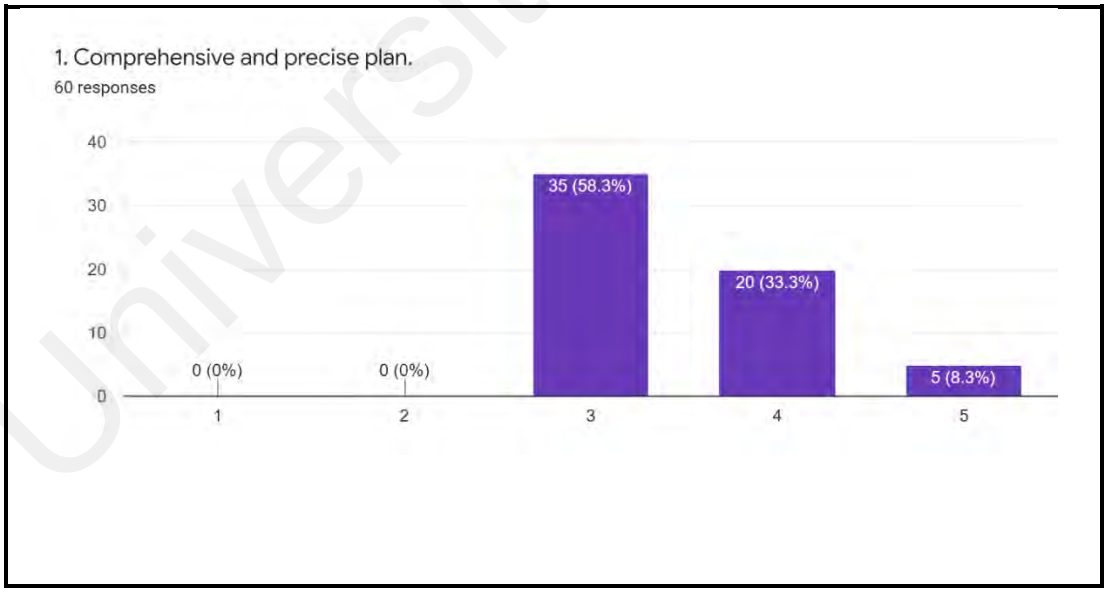

Figure 4.27: Comprehensive and precise plan

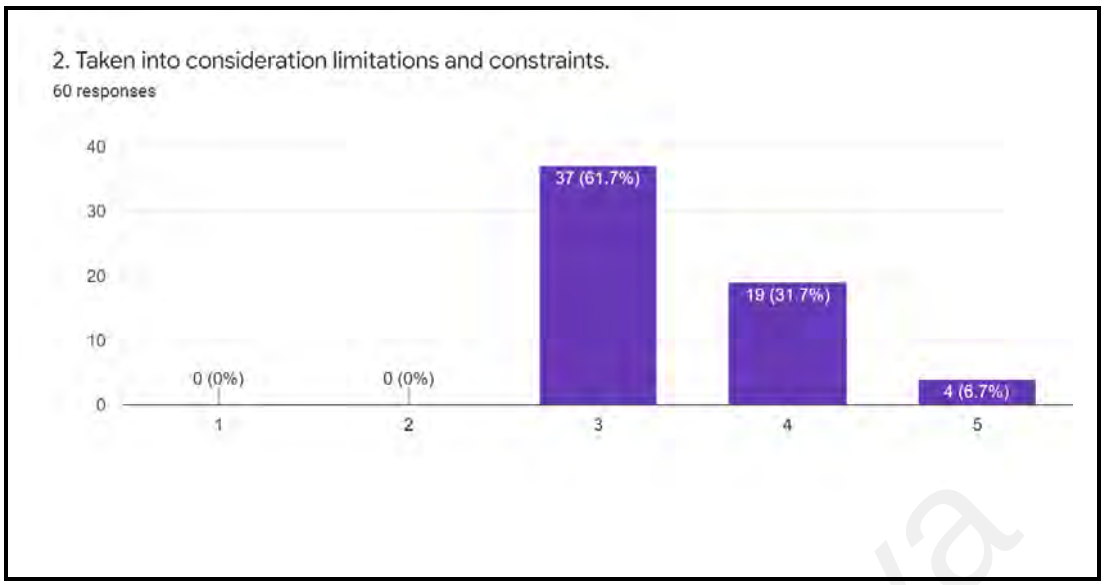

Figure 4.28: Taken into consideration limitations and constraints

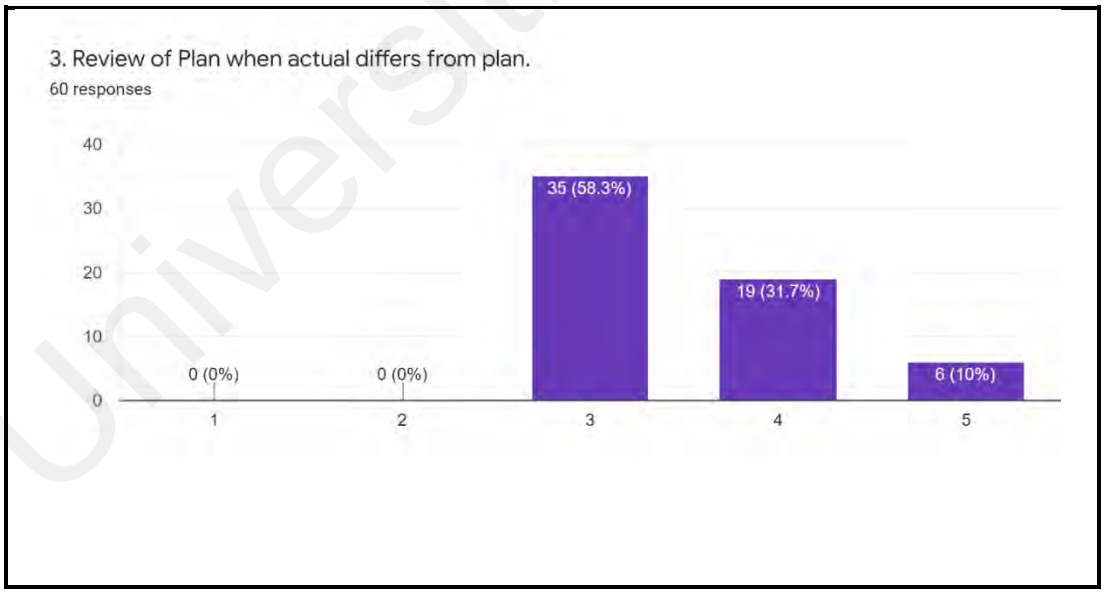

Figure 4.29: Review of plan when actual differs from plan

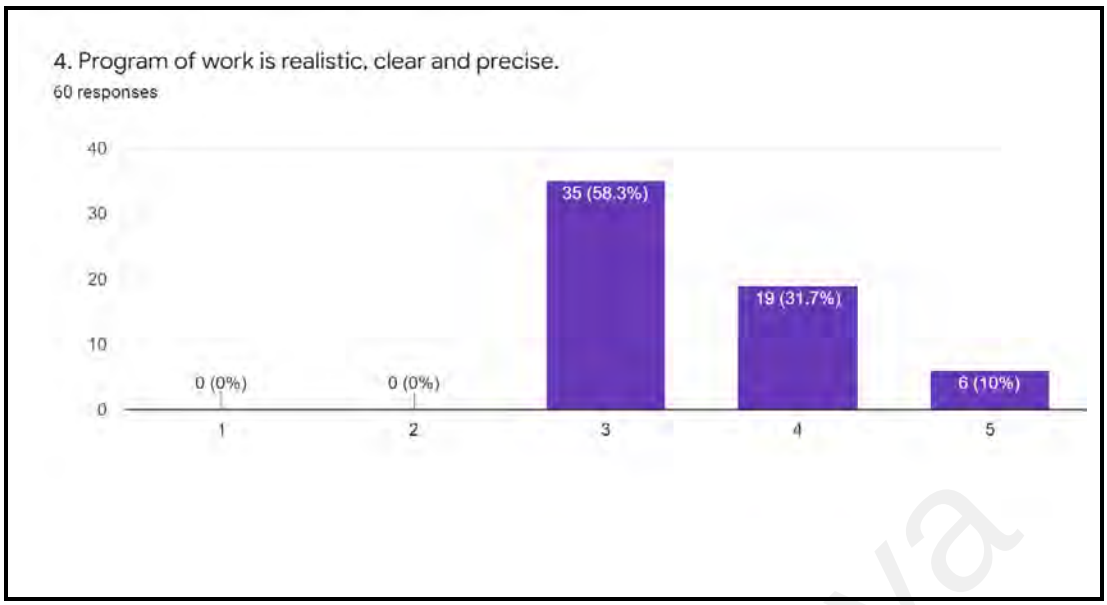

Figure 4.30: Program of work is realistic, clear and precise

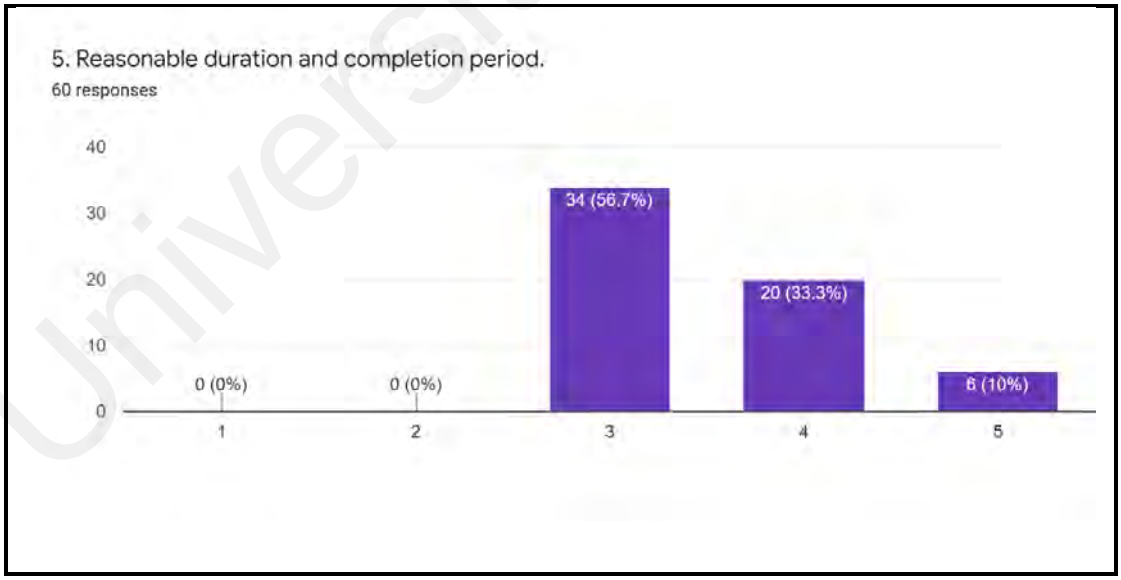

Figure 4.31: Reasonable duration and completion period

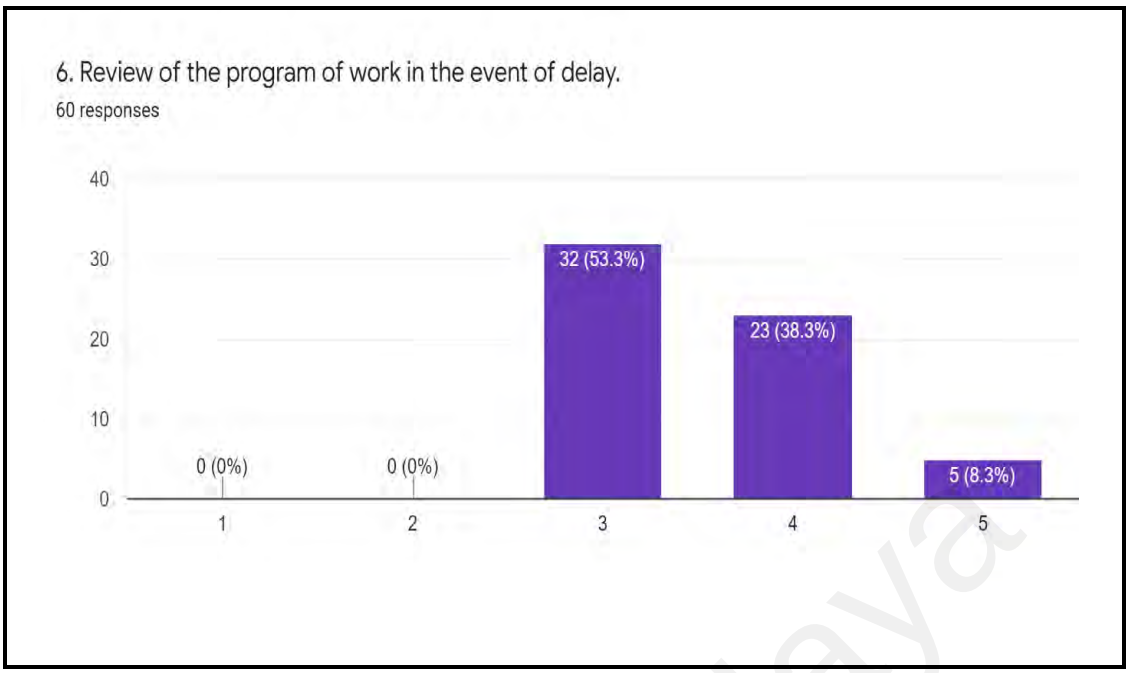

Figure 4.32: Review of the program of work in the event of delay

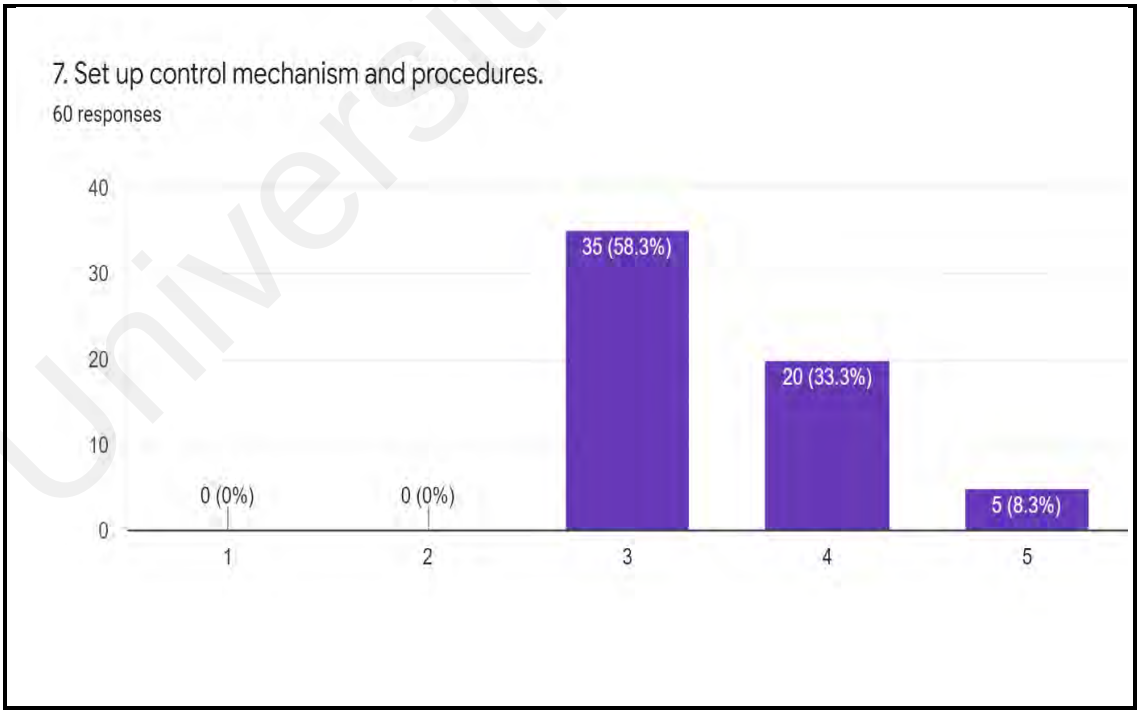

Figure 4.33: Set up control mechanism and procedures

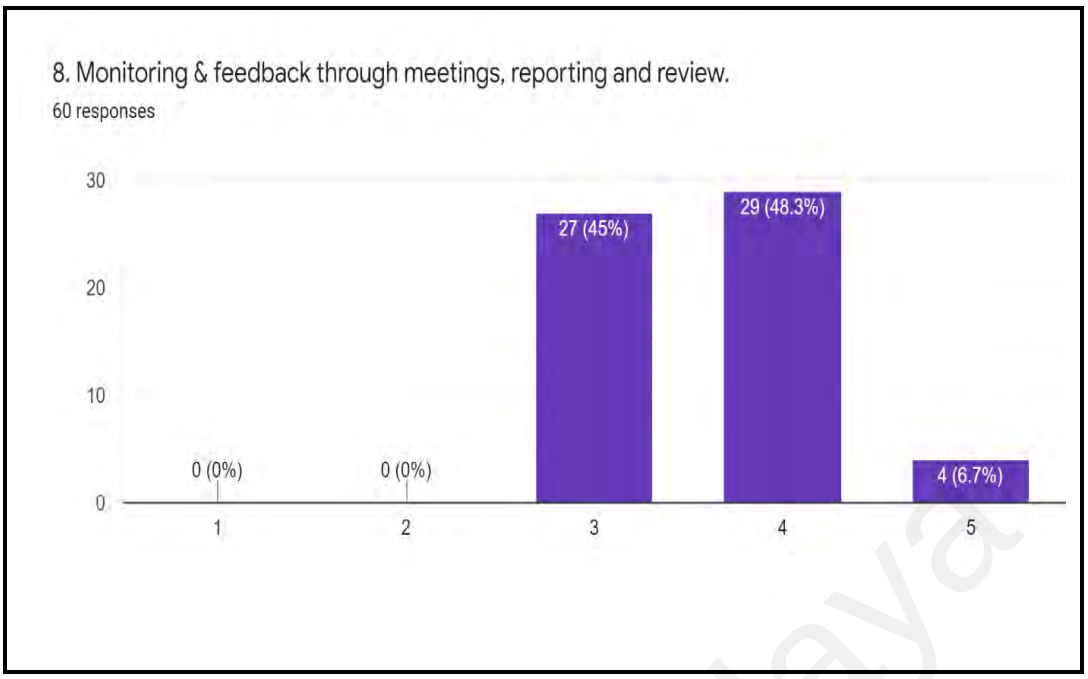

Figure 4.34: Monitoring & feedback through meetings, reporting and review

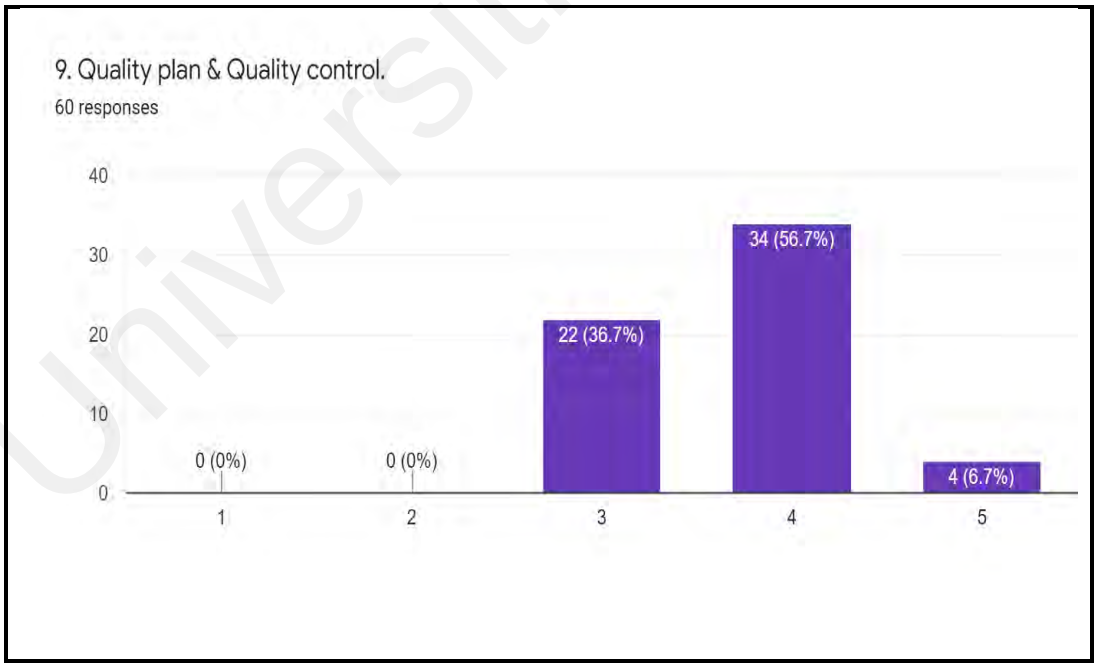

Figure 4.35: Quality plan & quality control

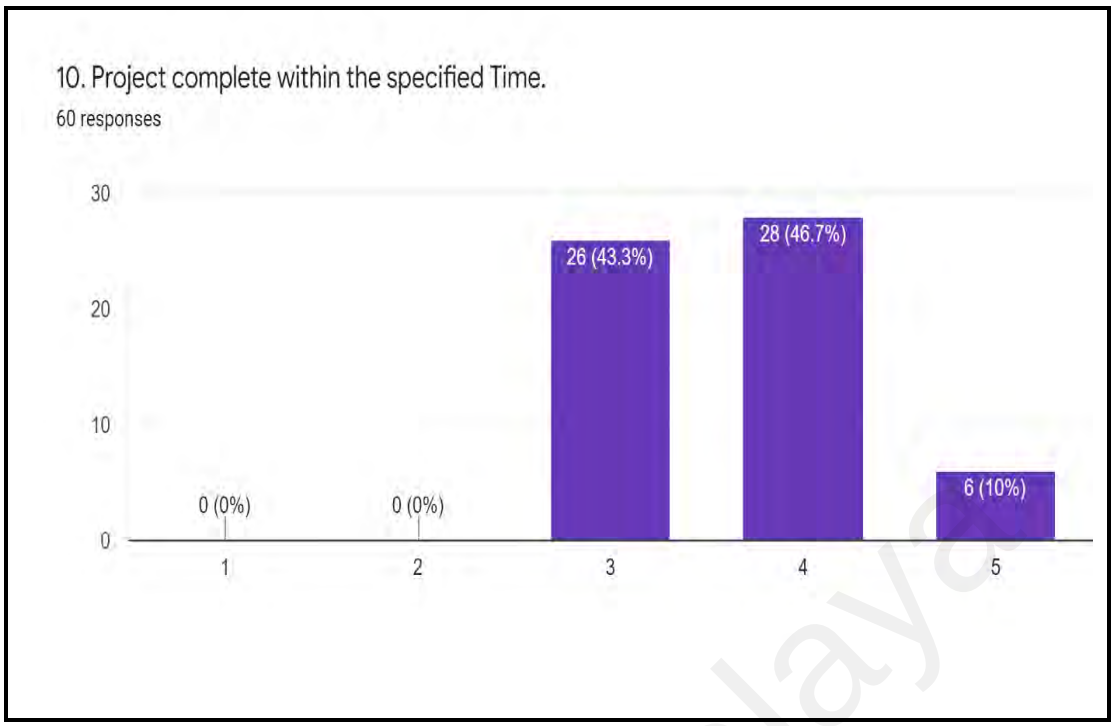

Figure 4.36: Project complete within the specified Time

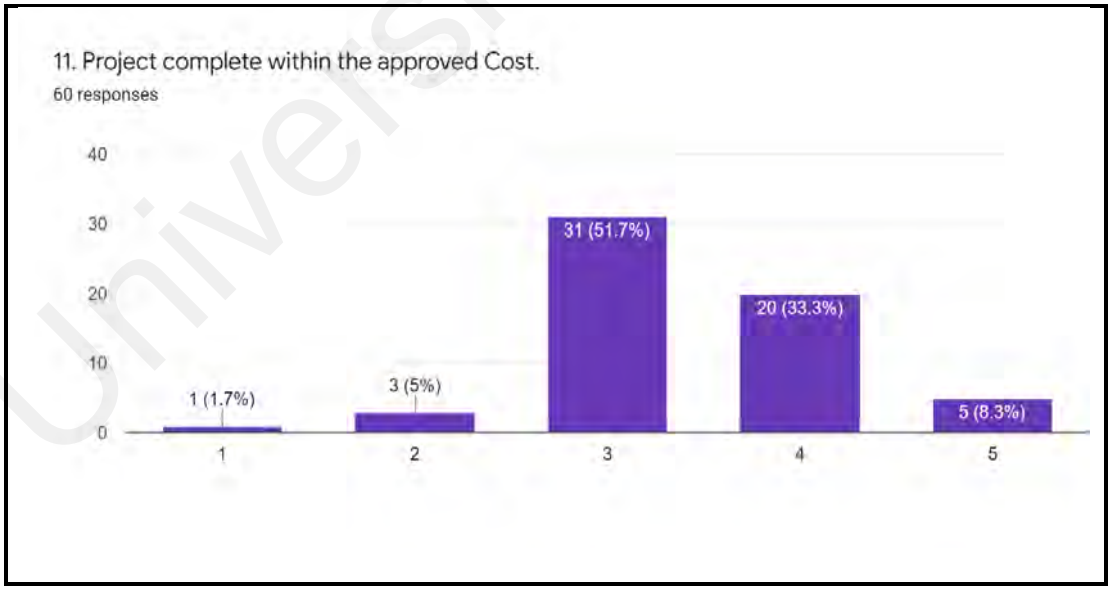

Figure 4.37: Project complete within the approved cost

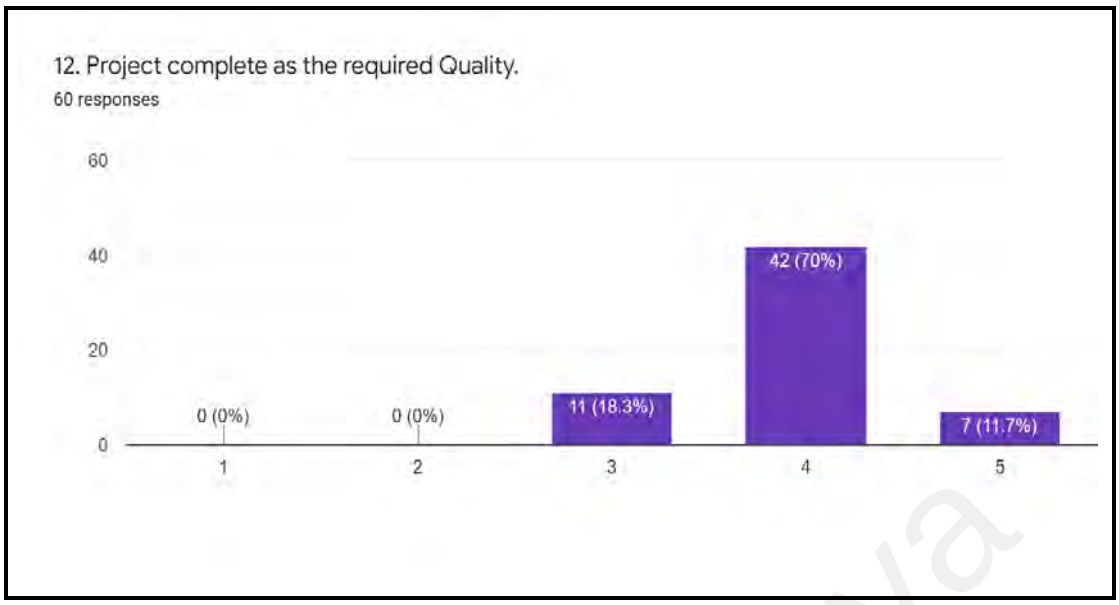

Figure 4.38: Project complete as the required quality

The "Organisation" Factor:

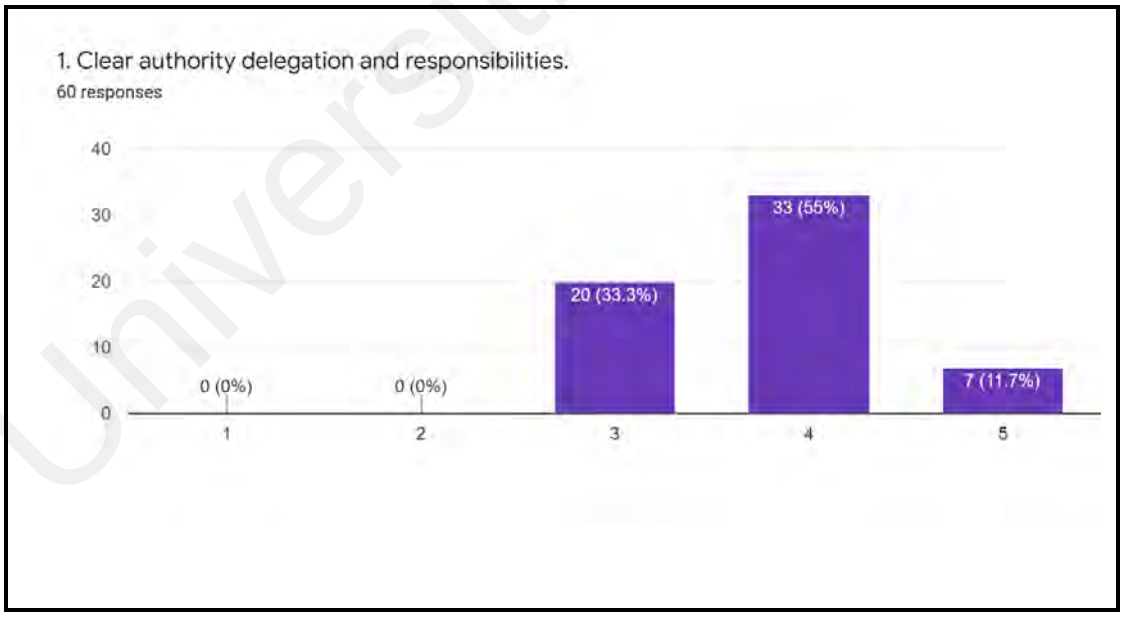

Figure 4.39: Clear authority delegation and responsibilities

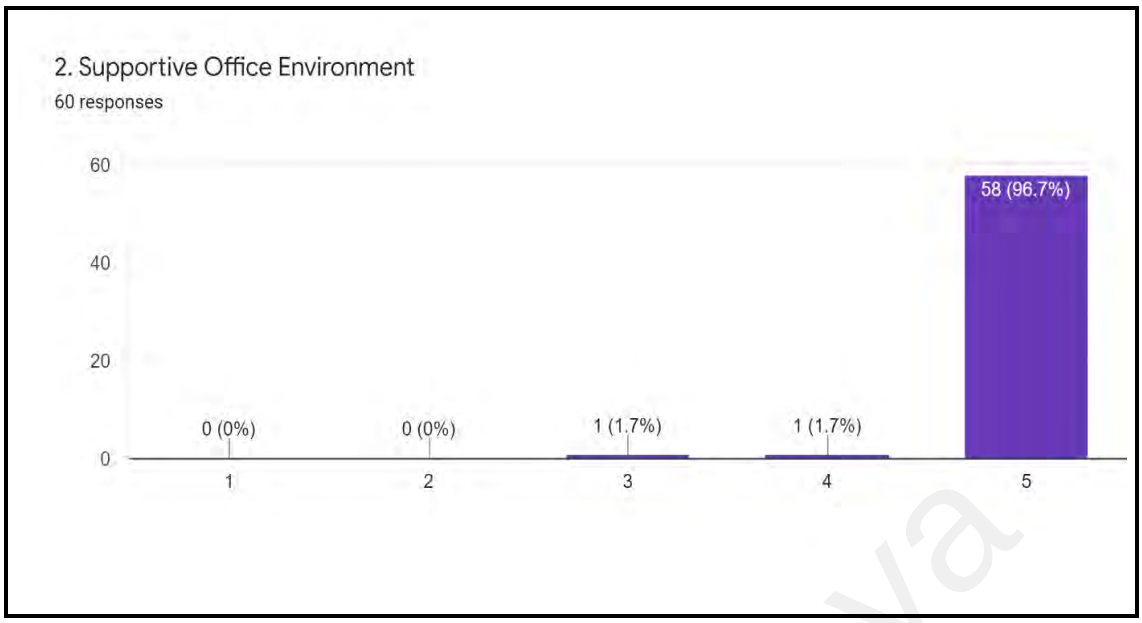

Figure 4.40: Supportive office environment

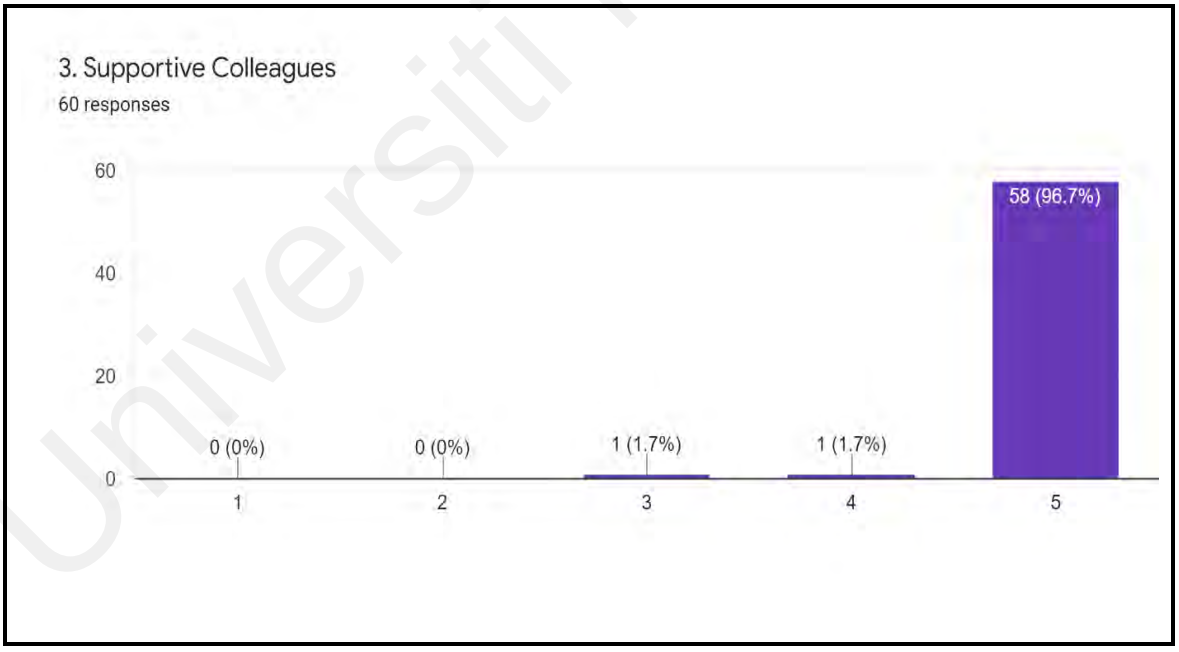

Figure 4.41: supportive colleagues

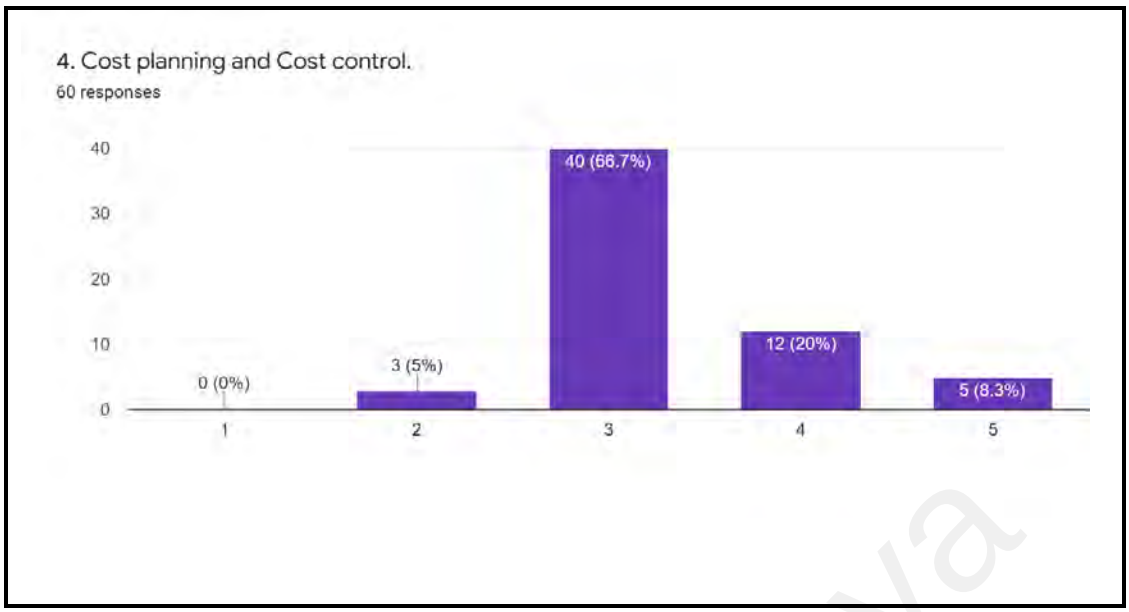

Figure 4.42: Cost planning and cost control

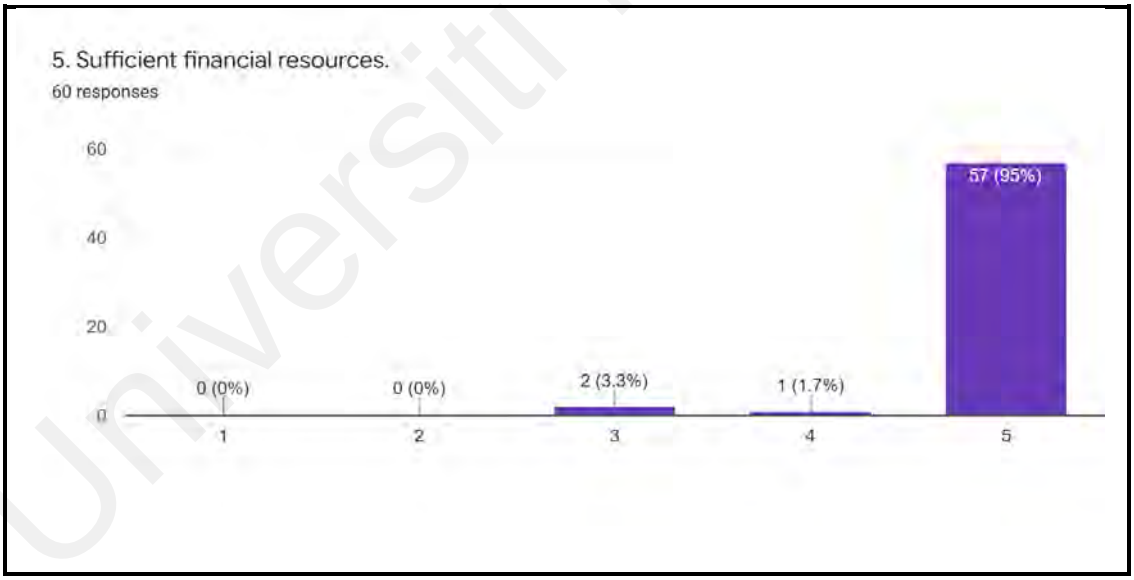

Figure 4.43: Sufficient financial resources

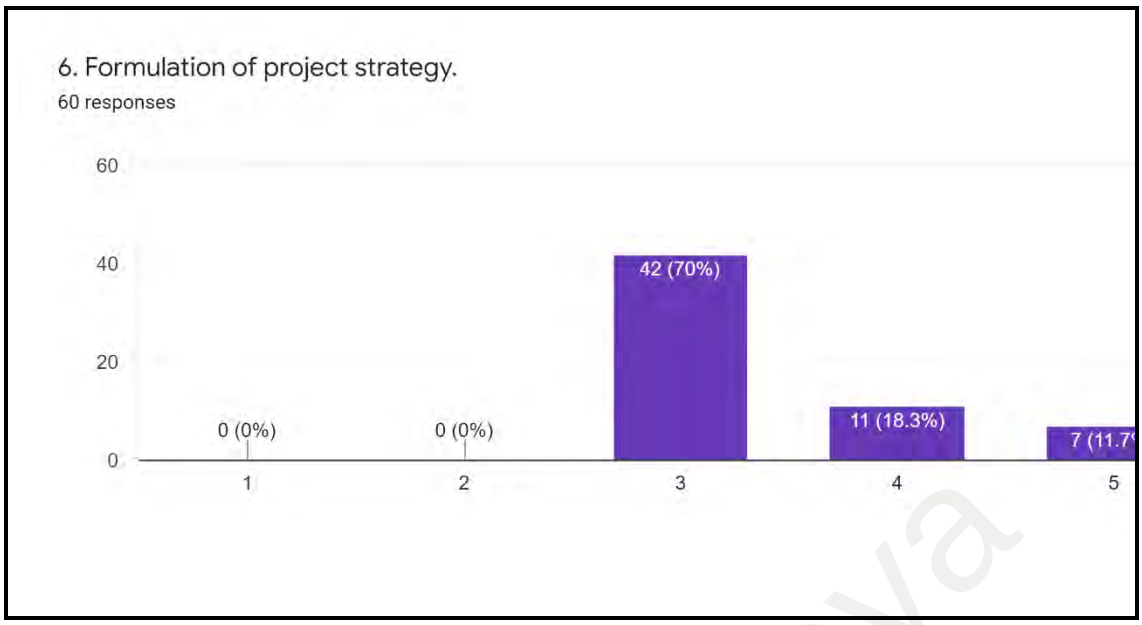

Figure 4.44: Formulation of project strategy

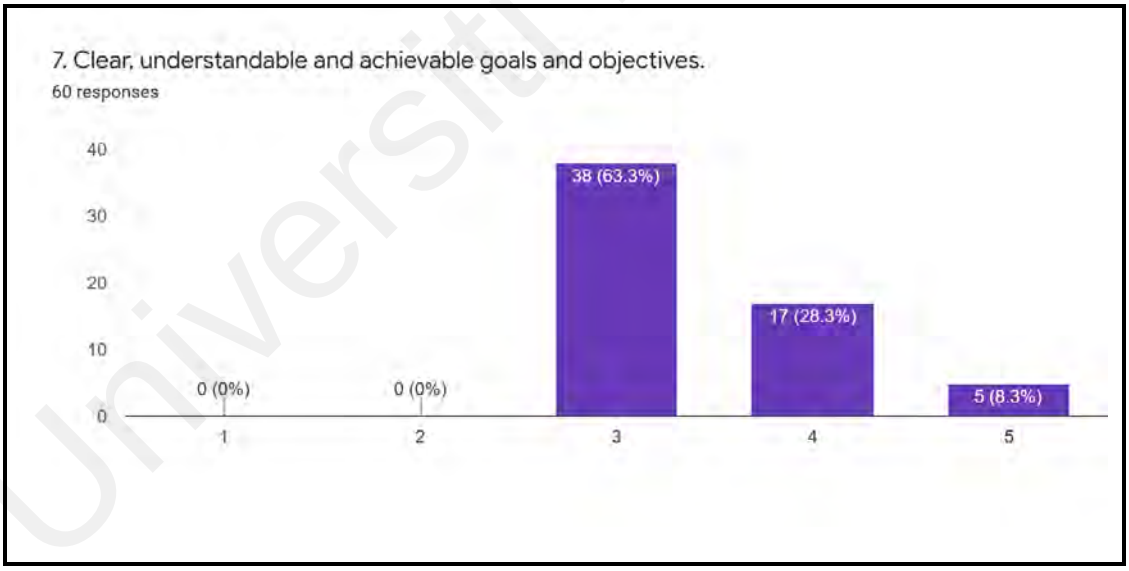

Figure 4.45: Clear, understandable and achievable goals and objectives

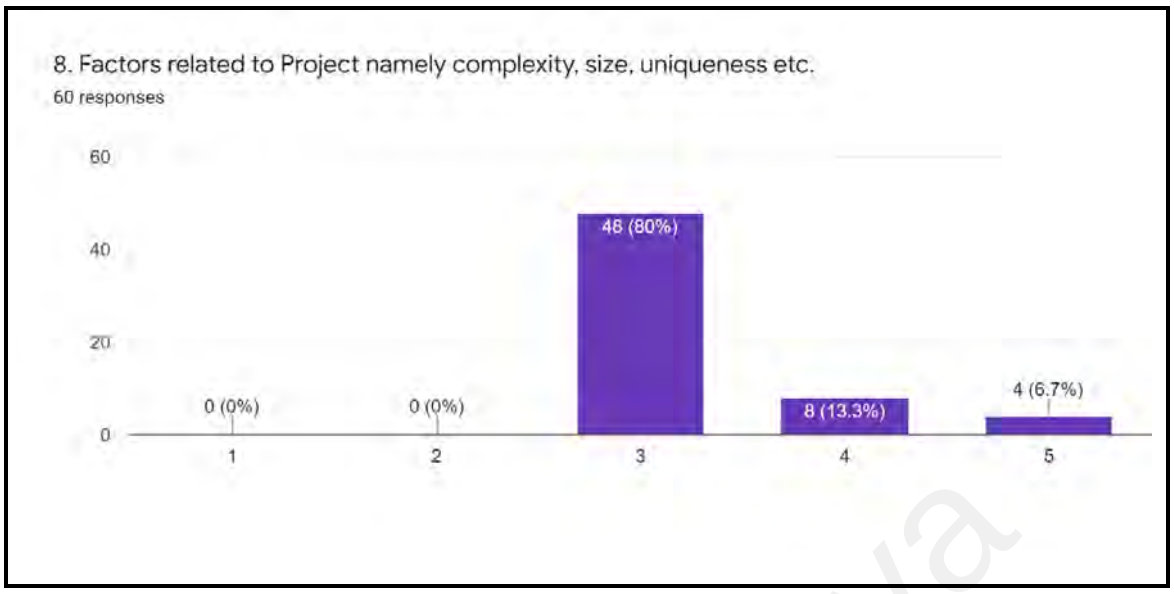

Figure 4.46: Factors related to project namely complexity, size, uniqueness

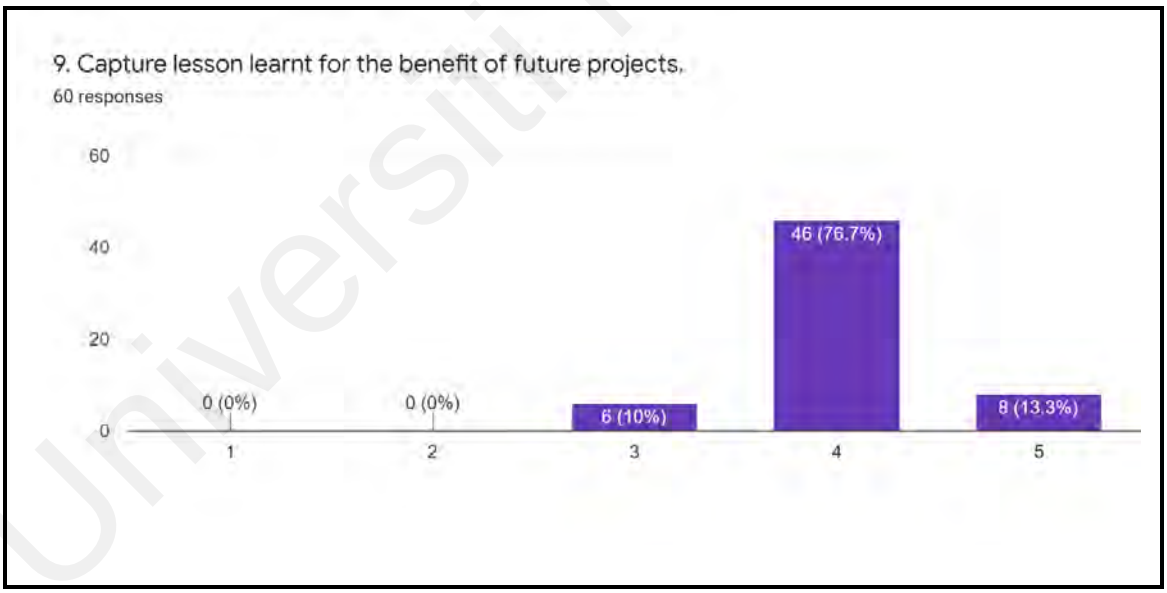

Figure 4.47: Capture lesson learnt for the benefit of future projects

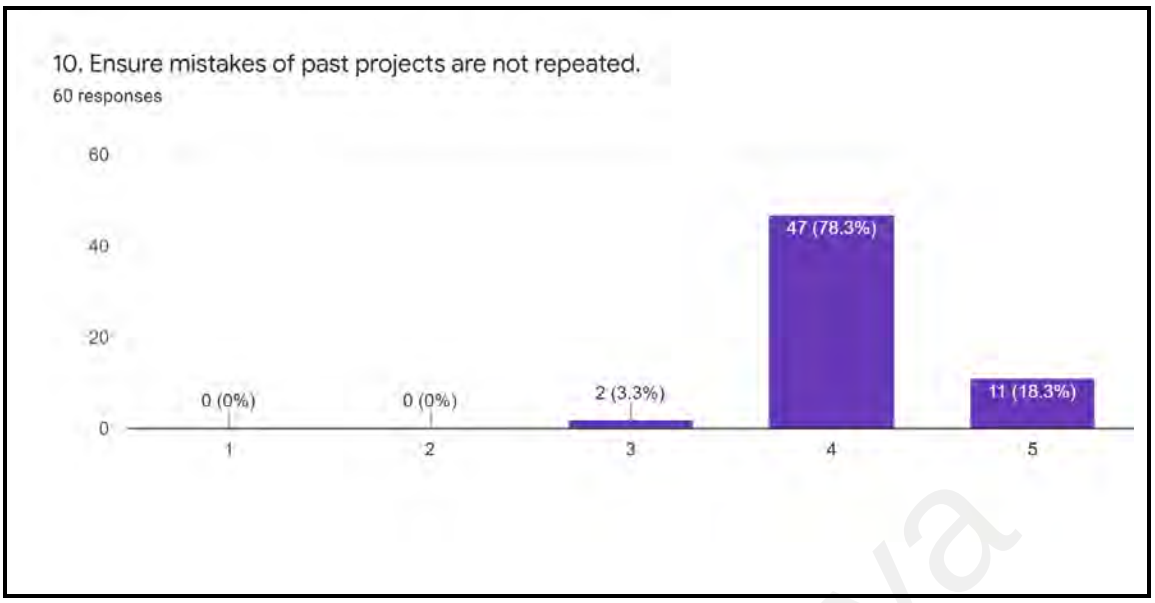

Figure 4.48: Ensure mistakes of past projects are not repeated

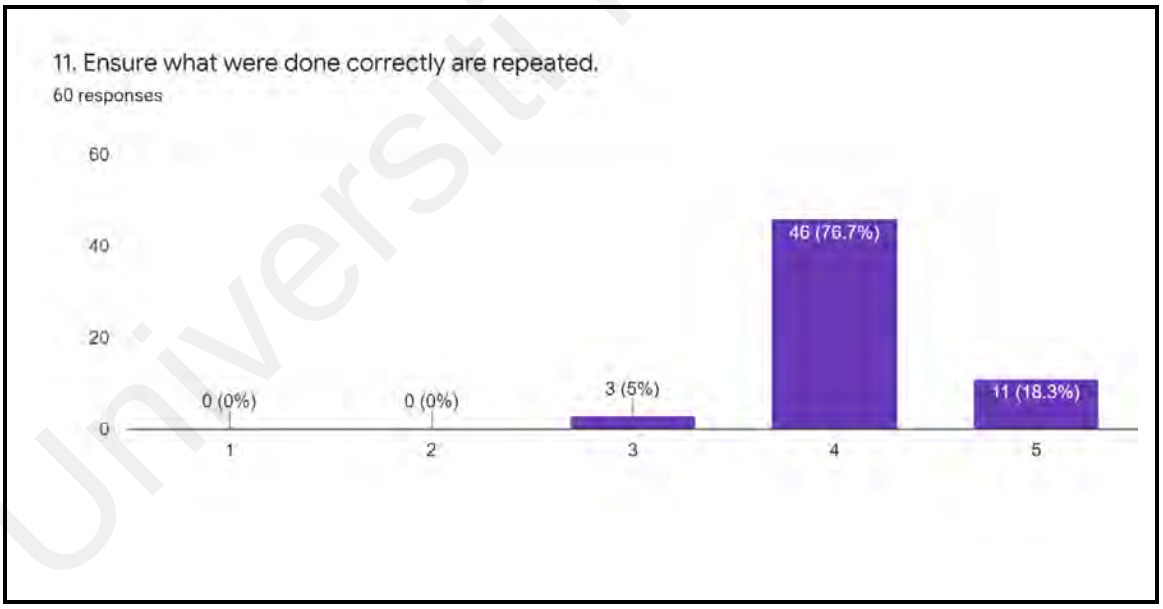

Figure 4.49: Ensure what were done correctly are repeated

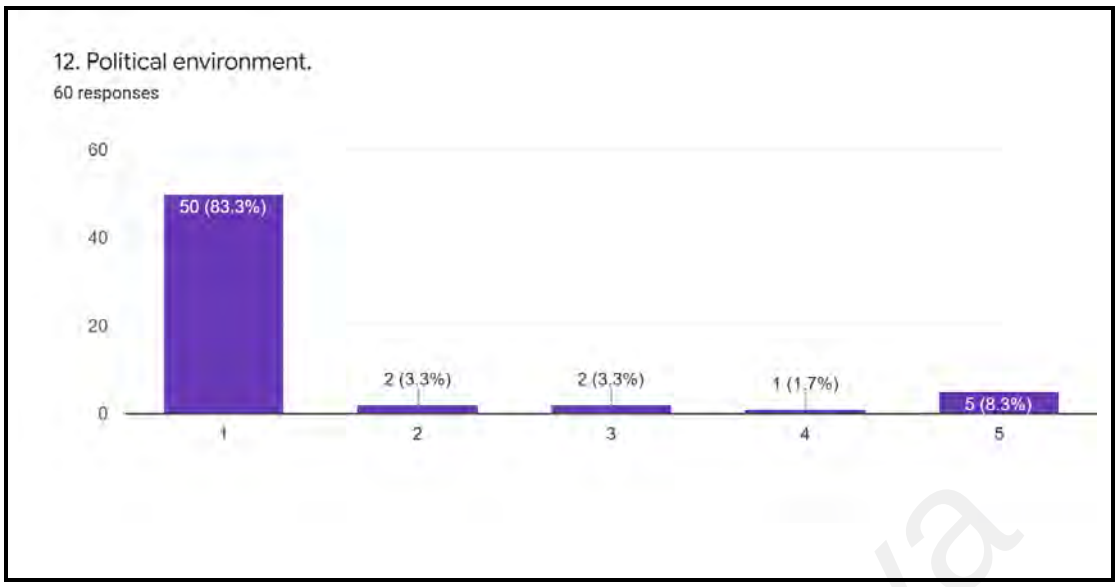

Figure 4.50: Political environment

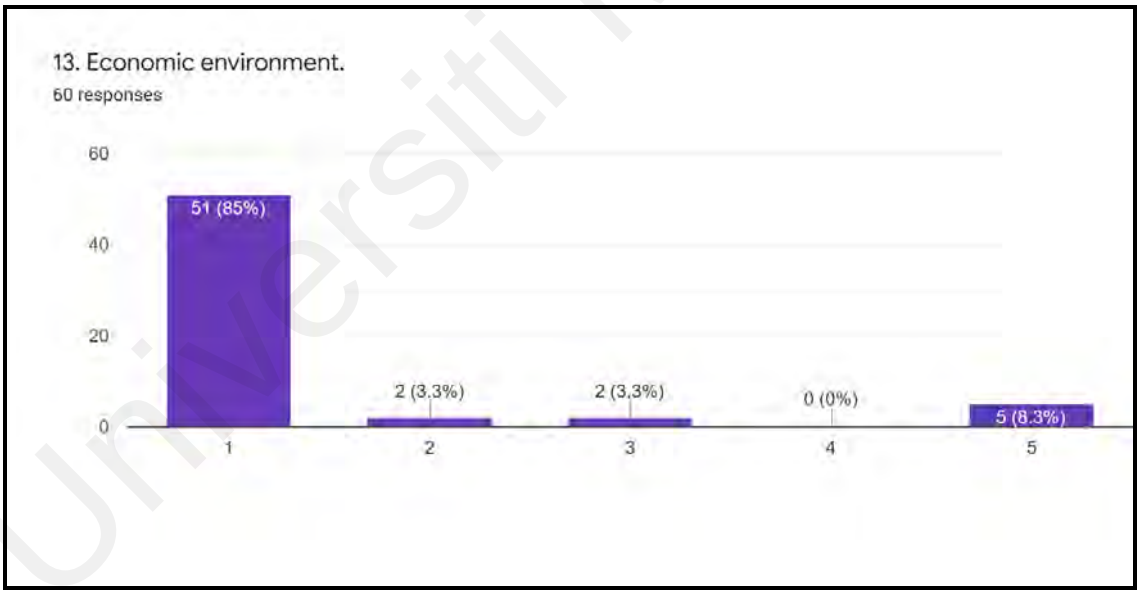

Figure 4.51: Economic environment

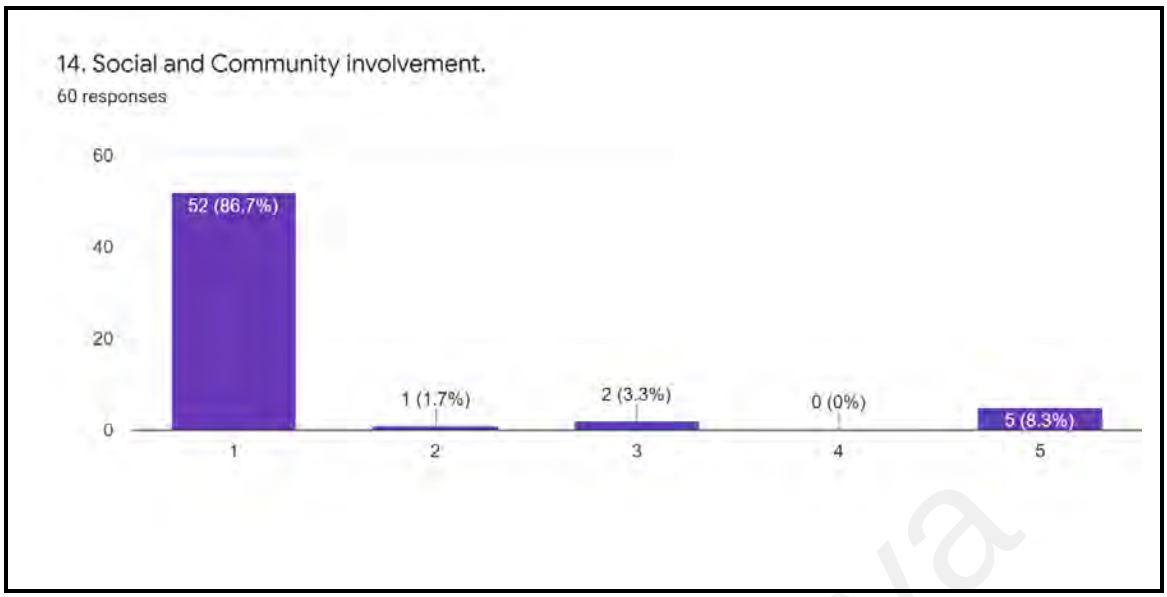

Figure 4.52: Social and community involvement

4.5 Statistical Analysis on Critical Success Factors

4.5.1 Ranking of Critical Success Factor Using Relative Importance Index (RII)

The first question of the questionnaire is tagged as "B1", which contains the first critical success factor in section B of the questionnaire. The subsequent questions are tagged "B2" and so forth until "B17". The table 4.1 indicates the questionnaire responses.

	5	4	3	2	1
Question	**Most Important**	**Important**	**Moderately Important**	**Slightly Important**	**Least Important**
B1	60	0	0	0	0
B2	60	0	0	0	0
B3	57	3	0	0	0
B4	59	1	0	0	0
B5	59	1	0	0	0
B6	7	23	30	0	0
B7	60	0	0	0	0
B8	60	0	0	0	0
B9	58	2	0	0	0
B10	14	37	9	0	0
B11	8	27	24	1	0
B12	8	32	20	0	0
B13	7	35	18	0	0
B14	6	10	17	27	0
B15	8	37	15	0	0
B16	5	5	15	26	9
B17	7	8	38	6	1

Table 4.1: Questionnaire response for Section B

Table 4.2 shows the tabulated RII from the responses obtained. The critical success factors are then calculated using the abovementioned formula and ranked accordingly. The highest-ranking critical success factors are B1, B2, B7, B8, which scored "1". While B4, B5, B9 scored 0.997, 0.997 and 0.993 respectively. These critical success factors are "Leadership/top management support", "Leadership/top management Awareness", "Users' Awareness of the System" and "User's Acceptance of the System"; and "Leadership/Top Management Policy & Flexibility", "Readily Available Financial Resources" and "User's Knowledge of the System" respectively. The average score for this section is 0.856, which is the highest RII score from all three sections.

	5	4	3	2	1				
Question	**Most Important**	**Important**	**Moderately Important**	**Slightly Important**	**Least Important**	**Total**	**Total Number (N)**	**A*N**	**RII**
B1	300	0	0	0	0	300	60	300	1
B2	300	0	0	0	0	300	60	300	1
B3	285	12	0	0	0	297	60	300	0.99
B4	295	4	0	0	0	299	60	300	0.996666667
B5	295	4	0	0	0	299	60	300	0.996666667
B6	35	92	90	0	0	217	60	300	0.723333333
B7	300	0	0	0	0	300	60	300	1
B8	300	0	0	0	0	300	60	300	1
B9	290	8	0	0	0	298	60	300	0.993333333
B10	70	148	27	0	0	245	60	300	0.816666667
B11	40	108	72	3	0	223	60	300	0.743333333
B12	40	128	60	0	0	228	60	300	0.76
B13	35	140	54	0	0	229	60	300	0.763333333
B14	30	40	51	81	0	202	60	300	0.673333333
B15	40	148	45	0	0	233	60	300	0.776666667
B16	25	20	45	78	27	195	60	300	0.65
B17	35	32	114	18	3	202	60	300	0.673333333

Table 4.2: The Critical Success Factors Analysis for Section B

For section C, the "process" factor, the first question of the questionnaire is tagged as "C1", which contains the first critical success factor in section C of the questionnaire. The subsequent questions are tagged "C2" and so forth until "C12". The table 4.3 indicates the questionnaire responses.

	5	4	3	2	1
Question	**Most Important**	**Important**	**Moderately Important**	**Slightly Important**	**Least Important**
C1	5	20	35	0	0
C2	4	19	37	0	0
C3	6	19	35	0	0
C4	6	19	35	0	0
C5	6	20	34	0	0
C6	5	23	32	0	0
C7	5	20	35	0	0
C8	4	29	27	0	0
C9	4	34	22	0	0
C10	6	28	26	0	0
C11	5	20	31	3	1
C12	7	42	11	0	0

Table 4.3: Questionnaire response for Section C

Table 4.4 shows the tabulated RII from the responses obtained. The critical success factors are then calculated using the abovementioned formula and ranked accordingly. The highest-ranking critical success factors are C12 and C9, which are "Project complete as the required Quality" and "Quality plan & quality control" respectively, which scored 0.787 and 0.74 respectively. The average score for this section is 0.715.

	5	4	3	2	1				
Question	**Most Important**	**Important**	**Moderately Important**	**Slightly Important**	**Least Important**	**Total**	**Total Number (N)**	**A*N**	**RII**
C1	25	80	105	0	0	210	60	300	0.7
C2	20	76	111	0	0	207	60	300	0.69
C3	30	76	105	0	0	211	60	300	0.703333333
C4	30	76	105	0	0	211	60	300	0.703333333
C5	30	80	102	0	0	212	60	300	0.706666667
C6	25	92	96	0	0	213	60	300	0.71
C7	25	80	105	0	0	210	60	300	0.7
C8	20	116	81	0	0	217	60	300	0.723333333
C9	20	136	66	0	0	222	60	300	0.74
C10	30	112	78	0	0	220	60	300	0.733333333
C11	25	80	93	6	1	205	60	300	0.683333333
C12	35	168	33	0	0	236	60	300	0.786666667

Table 4.4: The Critical Success Factors Analysis for Section C

For section D, the "organisation" factor, the first question of the questionnaire is tagged as "D1", which contains the first critical success factor in section D of the questionnaire. The subsequent questions are tagged "D2" and so forth until "D14". The table 4.5 indicates the questionnaire responses.

	5	4	3	2	1
Question	Most Important	Important	Moderately Important	Slightly Important	Least Important
D1	7	33	20	0	0
D2	58	1	1	0	0
D3	58	1	1	0	0
D4	5	12	40	3	0
D5	57	1	2	0	0
D6	7	11	42	0	0
D7	5	17	38	0	0
D8	4	8	48	0	0
D9	8	46	6	0	0
D10	11	47	2	0	0
D11	11	46	3	0	0
D12	5	1	2	2	50
D13	5	0	2	2	51
D14	5	0	2	1	52

Table 4.5: Questionnaire response for Section D

Table 4.6 shows the tabulated RII from the responses obtained. The critical success factors are then calculated using the abovementioned formula and ranked accordingly. The highest-ranking critical success factors are D2, D3 and Dr, which are the "Supportive Office Environment", "Supportive Colleagues" and "Sufficient financial resources" respectively, with scores of 0.99, 0.99 and 0.98 respectively. The average score for this section is 0.69, which is the lowest RII score for all three sections.

	5	4	3	2	1				
Question	Most Important	Important	Moderately Important	Slightly Important	Least Important	Total	Total Number (N)	A*N	RII
D1	35	132	60	0	0	227	60	300	0.756666667
D2	290	4	3	0	0	297	60	300	0.99
D3	290	4	3	0	0	297	60	300	0.99
D4	25	48	120	6	0	199	60	300	0.663333333
D5	285	4	6	0	0	295	60	300	0.983333333
D6	35	44	126	0	0	205	60	300	0.683333333
D7	25	68	114	0	0	207	60	300	0.69
D8	20	32	144	0	0	196	60	300	0.653333333
D9	40	184	18	0	0	242	60	300	0.806666667
D10	55	188	6	0	0	249	60	300	0.83
D11	55	184	9	0	0	248	60	300	0.826666667
D12	25	4	6	4	50	89	60	300	0.296666667
D13	25	0	6	4	51	86	60	300	0.286666667
D14	25	0	6	2	52	85	60	300	0.283333333

Table 4.6: The Critical Success Factors RII Analysis for Section D

From the RII calculated, the ranking of the critical success factors is as follow:

Top Highest ranking is obtained from the Human Management Factor:

i. "Leadership/top management support";

ii. "Leadership/top management Awareness";

iii. "Users' Awareness of the System";

iv. "User's Acceptance of the System";

v. "Leadership/Top Management Policy & Flexibility";

vi. "Readily Available Financial Resources"; and

vii. "User's Knowledge of the System"

The complete ranking of critical success factor for "Human Management" Factor is as in Table 4.7 below:

"Human Management" Factor			
Rank	**Question**	**RII**	**Critical Success Factors**
1	B1	1	Leadership/top management support
2	B2	1	Leadership/top management Awareness
3	B7	1	Users' Awareness of the System
4	B8	1	User's Acceptance of the System
5	B4	0.996667	Leadership/Top Management Policy & Flexibility
6	B5	0.996667	Readily Available Financial Resources
7	B9	0.993333	"User's Knowledge of the System"
8	B3	0.99	Leadership/Top Management Knowledge
9	B10	0.816667	Appointing the Right Contractor/System Developer
10	B15	0.776667	Project manager's Integrity
11	B13	0.763333	Commitment of project team
12	B12	0.76	Cooperation within the project team
13	B11	0.743333	Project Manager/Team Leader Competency
14	B6	0.723333	Prompt Payment to the Contractor/ System Develope
15	B14	0.673333	Project manager's experience
16	B17	0.673333	Timely and valuable information/decision communicated
17	B16	0.65	Manage the bureaucracy in getting all the necessary approvals
AVERAGE		**0.856275**	

Table 4.7: The Critical Success Factors Ranking for Section B

The second highest ranking is obtained from the "Process" Factor:

i. "Project complete as the required Quality"; and

ii. "Quality plan & quality control"

The complete ranking of critical success factor for "Process" Factor is as in Table 4.8 below:

"Process" Factor			
Rank	**Question**	**RII**	**Critical Success Factors**
1	C12	0.786666667	Project complete as the required quality.
2	C9	0.74	Quality plan & quality control
3	C10	0.733333333	Project complete within the specified Time
4	C8	0.723333333	Monitoring & feedback through meetings, reporting and review
5	C6	0.71	Review of the program of work in the event of delay
6	C5	0.706666667	Reasonable duration and completion period
7	C3	0.703333333	Review of Plan when actual differs from plan
8	C4	0.703333333	Program of work is realistic, clear and precise
9	C1	0.7	Comprehensive and precise plan
10	C7	0.7	Set up control mechanism and procedures
11	C2	0.69	Taken into consideration limitations and constraints
12	C11	0.683333333	Project complete within the approved cost
AVERAGE		**0.715**	

Table 4.8: The Critical Success Factors Ranking for Section C

The lowest ranking is obtained from the "Organisation" Factor:

i. "Supportive Office Environment";

ii. "Supportive Colleagues"; and

iii. "Sufficient financial resources"

The complete ranking of critical success factor for "Organisation" Factor is as in Table 4.9 below:

"Organisation" Factor			
Rank	**Question**	**RII**	**Critical Success Factors**
1	D2	0.99	Supportive Office Environment
2	D3	0.99	Supportive Colleagues
3	D5	0.983333333	Sufficient financial resources
4	D10	0.83	Ensure mistakes of past projects are not repeated
5	D11	0.826666667	Ensure what were done correctly are repeated
6	D9	0.806666667	Capture lesson learnt for the benefit of future projects
7	D1	0.756666667	Clear authority delegation and responsibilities
8	D7	0.69	Clear, understandable and achievable goals and objectives
9	D6	0.683333333	Formulation of project strategy
10	D4	0.663333333	Cost planning and Cost control.
11	D8	0.653333333	Factors related to Project namely complexity, size, uniqueness
12	D12	0.296666667	Political environment
13	D13	0.286666667	Economic environment
14	D14	0.283333333	Social and Community involvement
AVERAGE		**0.695714286**	

Table 4.9: The Critical Success Factors Ranking for Section D

4.6 Summary of Chapter

In conclusion, the primary focus of this chapter is on reviewing and analyzing the data that was gathered through the quantitative research method of a questionnaire survey. The questionnaire was distributed to selected officers and support staff from JAKIM and JAWI who have direct involvement with the system, as part of the research. The rate of response for the questionnaire was more than 95%, which give an ample representation for data collection.

CHAPTER 5: FINDING AND DISCUSSION

5.1 Introduction

The objective of this research was to provide a contribution to ongoing discussions regarding the most important prerequisites for the development of the Malaysian Islamic Marriage Management System that has been used for many years. In particular, it investigates the dominant yet often overlooked critical success factors of the system development from the point of view of the respondents, who are users and administrators of the system in JAKIM and JAWI. This chapter offers conclusions on the finding of the research in relation to the research statement, the objectives, and potential areas for further research.

5.2 Finding

There are no fix definitions of success. But it can be implied that for a project that is undertaken by an Islamic agency, the project is deemed to have been successful when it has a good impact on both the clients and the organisation that develops it, when it satisfies the needs, and when it has done an excellent job of meeting those requirements. Arguably no system is perfect. Even the mighty google search engine is not 100% perfect, 100% of the times. Moreover, despite the fact that a number of researches have been conducted, there is no agreement regarding the components that make up these critical success factors, what more in an Islamic Government Agencies where research is more focus on Islamic edict area.

The perceptions and points of view of the respondents were used to compile the conclusions of this research. It is acknowledged that different stakeholders may have differing points of view on the topic. Cooke-Davies (2002) states that the identification

of success factors is accurate and acceptable if they are based on 247 factors that consistently emerge in project management success and project success. Despite the fact that Lui (2004) claims that the set of critical success factors based on the respondents' perceptions poses a threat of bias, Cooke-Davies (2002) qualifies that the identification of success factors is accurate and acceptable. This research takes great care in selecting appropriate respondents who are directly involved in the system so that it can achieve its intended results. The finding of this research are supported by the outcomes of a straightforward investigation that was conducted to validate the finding.

The factors that contribute to success are often referred to as "how to achieve." According to the finding of the research, success factors are defined as those components that are necessary to deliver the success criteria. The circumstances, forces, facts, or effects, levers, vital activities, and key variables make up these components. These include knowledge, skills, traits, motives, attitudes, values, and any other personal attributes that are required to successfully do the work at hand. They add to the end outcome or the accomplishment of the success criteria, which both contribute to an increased possibility that the project will be successful. These success factors are not the basis for measurement or judgement; rather, they are the management inputs, systems, and behaviour that would lead to the success of the project. Furthermore, these success factors are the organisational areas of how to achieve the success criteria, and are therefore referred to as the 'How'.

According to the finding of this research, human management is the most important vital success factor out of all the other variables. Because of this, it is essential that technical skills be necessary in addition to concerns with regard to human or people factors. In addition, it is necessary to place an emphasis on this topic in the training of the industry players and stakeholders in the construction industry because it has been determined that

the team and leadership factor is the most important success factor in the group of human management success factors. In addition to the importance of the team and the leadership, it is imperative that adequate attention be paid to the training of the project manager, concerns over communication, and the management of stakeholders.

With regard to the relationship of these critical success factors, especially the top management support, and the Malaysian Islamic Marriage Management System in JAKIM and JAWI, it can be observed that one of the most essential characteristics of a project is that it must be regarded as having sufficient significance by top management or at the very least senior management, to warrant the budgetary allocation to kick start the project. If top management or senior management failed to be convinced that it is the project or an idea is not actually that significant, the project is often destined to fail. Numerous and subtle signs indicate that something is not given enough importance. These signs include top management not mentioning it, giving the project to someone of low stature or rank, adding the project to the responsibilities of someone who is already too overworked, failing to monitor the project's progress, failing to see to the resource needs of the project, and many more.

5.3 Framework for Malaysian Islamic Marriage Management System Development Critical Success Factors

The framework is intended to reflect the relation between critical success factors and project success based from the perspective of a Federal Government Islamic Religious agency, and may help other government agencies to evaluate their projects with the essential parameters and understand the logic behind critical success factors in the cases where it is hard to manage complex projects. The framework is as Figure 5.1.

The reason for having a framework is to assist in determining, based on what have been learned, the right approach and methods to apply in a given situation. The framework developed here provides visual representation of the dominant critical success factors in the development of the Malaysian Islamic Marriage Management System. This framework is based on the finding of this research that in a hierarchical organisation such as a government department, no project can be turned into a reality, what more a successful one, without the support of the department's top management and leadership, combined with technical factors, financial supports and user awareness themselves.

As projects as unique, these dominant critical success factors may differ in parts or entirely. A sacred cow project in a different government agency may have different dominant grouping of critical success factors. An example is if the project is politically motivated, other external factors may be more dominant than the ones found in this research.

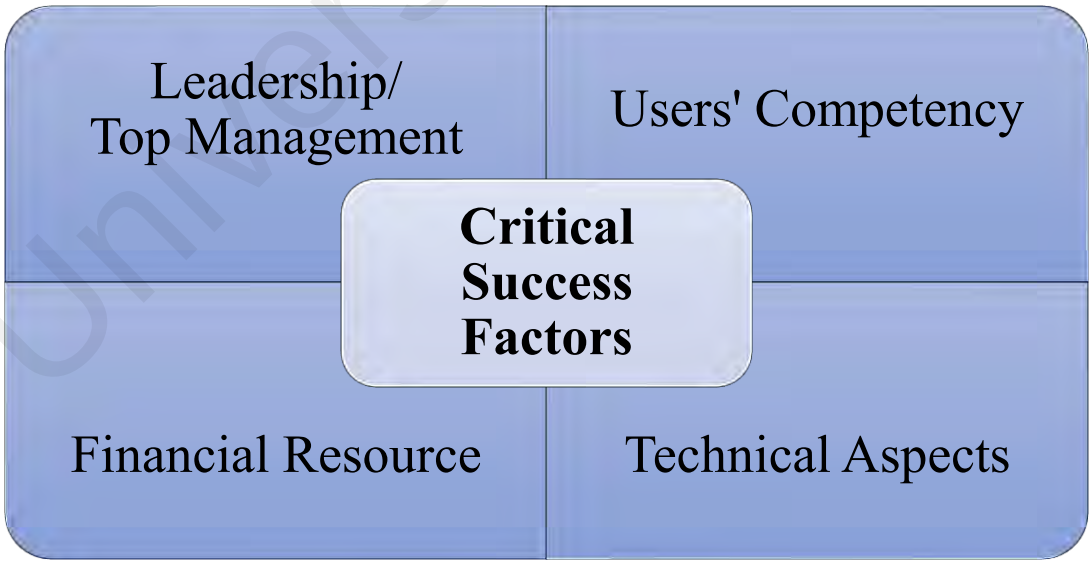

Figure 5.1: Framework for Malaysian Islamic Marriage Management System Development Critical Success Factors

5.4 Discussion

Would the old system of filing paper forms still exist should this system didn't exist? Would the users face a mountain of marriage application paper forms every day, if the system didn't exist? How does a system that replaces a manual system came into existence? Does only having technical experts sufficient in developing a system, or any physical projects? These are the relationships of the studied critical factors and the development of the Malaysian Islamic Marriage Management System that this research would hope to show.

Based on the finding of this research, which indicate that human management is more important than any other aspect in determining success, it is essential that those who are responsible in managing projects possess not only have the necessary technical knowhow, but also understand that successful project and project management is dependent and relates to humans or people factors. In addition, it is necessary to place an emphasis on this topic in the training of government officer, no matter which service they belong to, or, which government agency they serve, because it has been determined that top management and leadership factor is the most important success factor in the group of human management success factors.

5.5 Summary of Chapter

Chapter 5 details the finding and discussion of the research which seek to validate the importance of non-technical factors in the success of the Malaysia Islamic Marriage Management System. Analysis from the questionnaire survey done has ranked 'Human management' as the critical success factor, followed by 'Process', and 'Organisation'. Besides that, the analysis suggests team and leadership and top management (support,

awareness, knowledge, policy and flexibility), user's competency and availability of financial resources as the highest ranked success factors. Although developing an IT system that replaces the manual system is a mammoth technical task, human aspect plays an important role in ensuring the system can be useful, serve it intentional purpose, therefore successful in the eyes of both the organisation that developed it, and the users that operate it.

CHAPTER 6: CONCLUSION AND RECOMMENDATION

6.1 Introduction

Success in rarely spoken, what more celebrated in government sector. In fact, success is expected and anticipated from government agencies and government servants. Therefore, the best chance to increase success rate in whatever that have neem planned, is none other than learning from a system that has been used for over a decade, and have won awards for its outstanding achievement and outcome.

This chapter concludes the finding of the research in relation to the objectives and the research statement and proposes several recommendations for not just future research, but immediate actions can be taken by those in training and development area. The aim of this research is to highlight the critical success factor for the development of the Malaysian Islamic Marriage Management System, which has been in place for more than 10 years and has been instrumental in ensuring one the most important event of Muslim's lives is properly handled. Yet, this system is rarely spoken about. Those who made this happened are unsung heroes who works behind the curtains to ensure the system are development and able to do that it is intended to do.

This research did not dwell on all the six or seven stages of system development life cycles and its technical complexity, rather, this research focuses on the human aspect of the project, particularly focusing on which "human" is the most important or critical factor that made this system successfully developed. In particular, it examines the dominant critical success factors through the perspective of the respondents who officers of JAWI and JAKIM, who have been directly involved in this system, either as users or

system administrators. Though this research focuses on one system, but the finding of the research is applicable for future development of not just an IT system or non-physical development, but also in any projects, ideas, endeavor that any officers wish to embark.

6.2 Summary of Research Finding

This research is based on the problem statement of the success of developing a long and widely used, yet also goes unnoticed by not just the general public, but also those who use and administer the Malaysian Islamic Marriage Management System, and tries to answer the questions of what are the critical success factors that allowed the system to be successfully developed.

6.2.1 Research Objective 1

The first objective of this research which is "To explore the critical success factors that contribute the success of of the development of Malaysian Islamic Marriage Management System", is achieved by reviewing a number of literatures regarding critical success factors so that a more suitable critical success factors can be identified and to be verified by the quantitative methodology. The use of statistical tools of SPSS, MS EXCEL and Relative Importance Index (RII) has assisted in analysing the Likert scale responses and determining the ranking of the critical success factors in a more systematic manner.

This research has concluded that the three groups of critical success factors that contribute to the success of the Malaysian Islamic Marriage Management System are 'Human management' factor, followed by 'Process' factor and 'Organisation' factor. Those "Human" factor includes leadership and top management (their support, awareness, knowledge, policy and flexibility), user's competency (their awareness, acceptance and

knowledge) and availability of financial resources as the highest ranked success factors.

The second highest critical success factor group which is the "Process" factor includes quality aspects of the system. The third highest critical success factors groups, the "Organisation" factor includes supportive office environment and supportive colleagues as well as sufficient financial support.

6.2.2 Research Objective 2

The second objective of this research is to identify the relationship between the critical success factors and the Malaysia Islamic Marriage Management System. These critical success factors, especially related to leadership/top management, is an important factor with regards to project implementation in a very hierarchical and top-down approach of government sector. As Pinto et al. (1987) pointed out, top management support means the willingness of top management to provide the necessary resources and authority/power for project success. Without resources, especially financial resource, no project can start, and certainly without the authority, no officer will be able to move an inch with their project or idea. As financial resources and human resource needed to facilitate the kick start of a project in limited, Without the direct support of leadership/top management, the project is almost certain to lose the resource battle, and end up just a proposed idea on a piece of paper.

6.2.3 Research Objective 3

The third objective of this research is to develop a framework depicting the critical success factors in developing the Malaysian Islamic Marriage Management System. The framework illustrates the result of this research which concluded that the dominant critical

factors that influence the success of developing the Malaysian Islamic Marriage Management System is the Human Management Factors. The development of this framework would be beneficial to government officer is all fields of management in the understanding of how to achieve project success.

6.3 Contribution of Research

This research can further prove that it is more than just the iron triangle of scope, time and cost in project management that can be the constraint in project success and thus needed to be balanced, but there are other more critical factors, especially in government-initiated projects that can determine the success of a project. These critical success factors which are not focused on technical aspects are always underestimated and over looked by those who want to embark on a new idea or a new project for their organisation. Because of this shortcoming, great ideas to improve services have been unrecognized or unable to move forward due to insufficient top management support. The finding from this research can be absorb into the training and development of not just future officers in the field of project management, but also the current officers in all management fields.

6.4 Recommendation

In general, the perception when comes in government-initiated project, not much effort is being put into planning, what more the implementation. Even the Economic Planning Unit, the central agency in charge of overseeing approving government development expenditure, put priority in budgeting, instead of planning, though there is this Value Management Lab Mechanism, but on for certain projects that cost more than RM50 million. While the Implementation and Coordination Unit of the Prime Minister's Department which is the central agency that monitors the outcome of projects

implemented using development expenditure, gives priority by only reviewing the outcome of the projects, which is at the completion phase of the projects.

The one area that can significantly adopt this knowledge is in training and development. Henceforth, it is highly recommended that any training module on project management is to include all the elements of success factors especially on the role of top management in project management. One popular training course that has been conducted in the government training institution for government officers, the National Institute of Public Administration or INTAN, is the *Kursus Pensijilan Pengurusan Projek Awam Bersepadu*, or better known with its acronym 3PAB, which is a project management course conducted by various professionals from the Public Works Department, the Economic Planning Unit, and academics from selected university. The focus group for the course is officers who are currently in charge of overseeing and management projects in the respective agencies, or more specifically, those who are working in development division in a ministry or department. It is suggested that the modules within the course be reviewed and not only be limited to technical processes and elements of project management.

6.5 Overall Conclusion

The finding from this research shows that in the development of a highly technical Malaysian Islamic Marriage Management system, the dominant critical success factor is the "human management" factor.

Although an IT system development project is a highly technical in nature, the "human factor" in project management proved to be the most important factor. This idea and knowledge of the importance of leadership/top management or human aspect in project

management has been repeated by many researchers since the 60's, and is still proven to be relevant today.

The outcome of this research has proven again that in a hierarchical governmental organisation, the "human factor" in the term of leadership/top management roles, combined with user's competencies, the availability of financial resources and the quality of the system, are the formula needed for success. The toughest step in project management is the first step, or the initial or planning stage of the project. The hardest battle to kick start a project would be won just by successfully obtaining the top management support. Authorisation for the highly needed funding would then be easier to gained, and without the hassle of bureaucratic red-tape. Cross departmental or even ministerial collaboration would even be possible.

REFERENCE

Abdullah, W. W., & Ramly, A. (2006, August). Does successful project management equates to project success. In *Proceedings of 5th IEEE International Conference of Cognitive Informatics*.

Adedeji, Afolabi & Ibem, Eziyi & Aduwo, Egidario & Tunji-Olayeni, Patience & Oluwunmi, Olufunke. (2019). Critical Success Factors (CSFs) for e-Procurement Adoption in the Nigerian Construction Industry. Buildings. 9. 1-18. 10.3390/buildings9020047.

Ahmad Mahdzan, A. (1992). Kaedah penyelidikan sosioekonomi. Kuala Lumpur: DBP

Alias, Z., Zawawi, E. M. A., Yusof, K., & Aris, N. M. (2014). Determining critical success factors of project management practice: A conceptual framework. *Procedia-Social and Behavioral Sciences*, *153*, 61-69.

Ang, C.-L., Davies, A. M., & Finlay, P. N. (2001). An Empirical Model of IT Usage in the Malaysian Public Sector. *Journal of Strategic Information Systems*, 159- 174.

Atkinson R. (1999). Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria. *Int J Project Manage*; *17(6)*, 337–42.

Baccarini, D. (1999). The Logical Framework Method for Defining Project Success. *Project Management Journal, 30(4)*, 25-32. https://doi.org/10.1177/875697289903000405

Ballous, M., & Bashir, H. (2022, February). Analysis of Interactions among Project Success Criteria and Factors Using a Network-Path Approach. In *2022 Advances in Science and Engineering Technology International Conferences (ASET)* (pp. 1-5). IEEE.

Belassi, W., & Tukel, O. (1996). A new framework for determining critical success/failure factors in projects. *International Journal Of Project Management*, *14(3),* 141-151. https://doi.org/10.1016/0263-7863(95)00064-x

Belout, A. (1998). Effects of human resource management on project effectiveness and success: toward a new conceptual framework. *International journal of project management*, *16*(1), 21-26.

Boynton, A. C., & Zmud, R. W. (1984). An assessment of critical success factors. *Sloan management review*, *25*(4), 17-27.

Brenda Whitaker. (1997). What went wrong? *Unsuccessful Information Technology Projects. KPMG*, 23-29.

Chen, Y. N., Chen, H. M., Huang, W., & Ching, R. K. (2006). E-government strategies in developed and developing countries: An implementation framework and case study. *Journal of Global Information Management (JGIM)*, 14(1), 23-46.

Cleland. D.I. (1999). Project management strategic design and implementation, 3rd edn. USA: McGraw-Hill Inc.

Cooke-Davies, T., (2002). The real success factors on project. *Int. J. Proj. Manag. 20 (3),* 185–190.

Cooke-Davies, T.J. and Arzymanow, A. (2003). The maturity of project management in different industries: An investigation into variations between project management models. *International Journal of Project Management*. 21. 471-478.

Daniel, D.R. (1961). Management Information crisis. *Harvard Business Review*. 111-121.

De Wit, A. (1988). Measurement of project success. *International Journal Of Project Management*, *6(3),* 164-170. https://doi.org/10.1016/0263-7863(88)90043-9

Deane RH, Clark TB. (1997). Creating a learning project environment (cover story). *Informat Syst Manage;14(3),* 54–61.

Dillman DA, Smyth JD, Christian LM(2008) Internet, mail, and mixed-mode Surveys: the tailored design method, 3rd Revised edn. Wiley, Hoboken, NJ

Easton, J.L. and Day, R.L. (1981). Planning for project management, In Stuckenbruck, L.C. (ed), The implementation of project management: *The professional's handbook.* USA: Addison-Wesley publishing company. (p24-33).

Easton, J.L. and Day, R.L. (1981). The need for project management. In Stuckenbruck, L.C. (ed), The implementation of project management. *The professional's handbook*. USA: Addison-Wesley publishing company. (p13-23).

Lang, F., & Müller, T. (2021). Success Factors of ICT Projects in Digital Transformation. *European Project Management Journal*, *11*(2), 24-36. doi: 10.18485/epmj.2021.11.2.3

Garousi, V., Tarhan, A., Pfahl, D., Coşkunçay, A., & Demirörs, O. (2019). Correlation of critical success factors with success of software projects: an empirical investigation. *Software Quality Journal*, *27*(1), 429-493.

Gray, C.F. and Larson, E.W. (2002). Project Management: The complete guide for every manager. McGraw-Hill.

Groves RM, Presser S, Dipko S (2004) the role of topic interest in survey participation decisions. *Public Opin Q* 68:2–31.

Helm, J. and Remington, K. (2005). Effective project sponsorship: An evaluation of the role of the executive sponsor in complex infrastructure projects by senior project managers. *Project Management Journal*. Sept 36 (3). 51-58.

Henrie, M., & Sousa-Poza, A. (2005). Project management: A cultural literary review. *Project Management Journal*, *36*(2), 5-14.

Husin, A. E., Setyawan, T. L., Meidiyanto, H., Kussumardianadewi, B. D., & Eddy Husin, M. K. (2019). Key success factors implementing BIM based quantity take-off in fit-out office work using relative importance index. *International Journal of Engineering and Advanced Technology*, *8*(6), 986-990.

Hussein, R., Karim, N. S., Mohamed, N., & Ahlan, A. R. (2007). The Influence of Organizational Factors on Information Systems Success in E-Government Agencies in Malaysia. *EJISDC*, 1-7.

Ika, L., Diallo, A., Thuillier, D. (2012). Critical success factors for World Bank projects: an empirical investigation. *Int. J. Proj. Manag. 30*, 105–116.

Imam, H., & Zaheer, M. K. (2021). Shared leadership and project success: The roles of knowledge sharing, cohesion and trust in the team. *International journal of project management*, *39*(5), 463-473.

Im, John & Seo, Jin-Wan. (2005). E-government in South Korea: planning and implementation. *EG*. 2. 188-204. 10.1504/EG.2005.007094.

Ives, M. (2005). Identifying the contextual elements of project management within organizations and their impact on project success. *Project Management Journal*, *36*(1), 37-50.

Iyer, K. C., & Jha, K. N. (2005). Factors affecting cost performance: evidence from Indian construction projects. *International Journal Of Project Management*, *23*(4), 283-295.

Jang, Y., & Lee, J. (1998). Factors influencing the success of management consulting projects. *International Journal of Project Management*, *16*(2), 67-72.

Jefferies, M., Gameson, R. O. D., & Rowlinson, S. (2002). Critical success factors of the BOOT procurement system: reflections from the Stadium Australia case study. *Engineering, Construction and Architectural Management*.

Jiang, J.J., Kelin, G. and Balloun, J. (1996). Ranking of system implementation success factors. *Project Management Journal.* Dec. 49-53.

Judgev, K. and Thomas, J. (2002). Project management maturity models: The silver bullets of competitive advantage. *Project Management Journal.* Dec 33 (4). 4-14.

Judgev, K., Muller, R. (2005). A retrospective look at our evolving understanding of project success. *Project Management Journal 36 (4),* 19–31.

Khandelwal, K., Ferguson, J.R. (1999). Critical Success factors (CSFs) and the Growth of IT in Selected Geographic Regions. *IEEE Press, Annual Hawaii International Conference.*

King, R. W., & Teo, T. S. (1996). Key Dimensions of Facilitators and Inhibitors for the Strategic Use of Information Technology. *Journal of Management Information System*, 35-53.

Kuen, C. W., & Zailani, S. (2009). Critical factors influencing the project success amongst manufacturing companies in Malaysia. *African journal of business management*, *3*(1), 016-027.

Lee-Kelley, L., & Kin Leong, L. (2003). Turner's five-functions of project-based management and situational leadership in IT services projects. *International journal of project management*, *21*(8), 583-591.

Leidecker, J. K., & Bruno, A. V. (1984). Identifying and using critical success factors. *Long range planning*, *17*(1), 23-32.

Levine, H. A. (2002). *Practical project management: tips, tactics, and tools*. John Wiley & Sons.

Liebe, U., Hundeshagen, C., Beyer, H., & von Cramon-Taubadel, S. (2016). Context effects and the temporal stability of stated preferences. *Social science research*, *60*, 135-147.

Linberg KR. (1999). Software developer perceptions about software project failure: a case study. *Journal of System Software;49*, 177–92.

Liu, A.M.M. (2004). The mythical CSFs in Project Procurement. Paper presented at the 7th Surveyors' Congress held on 21 - 22 June 2005 in Kuala Lumpur.

Mariati, Suhendra., E.S. (2018). Determining Critical Factors of E-Government Use. *International Journal of Science and Research (IJSR)*. 225-232.

Moore, D. W. (2002). Measuring new types of question-order effects: Additive and subtractive. *The Public Opinion Quarterly*, *66*(1), 80-91.

Munro, M. C., & Wheeler, B. R. (1980). Planning, critical success factors, and management's information requirements. *MIS quarterly*, 27-38.

Myprocurement.treasury.gov.my. 2022. *Keputusan Item View Page – MYPROCUREMENT*. [online] Available at: <https://myprocurement.treasury.gov.my/keputusan-record/?itemId=10054716> [Accessed 8 July 2022].

Napitupulu, D., Syafrullah, M., Rahim, R., Amar, A., & Sucahyo, Y. G. (2018, May). Content validity of critical success factors for e-Government implementation in Indonesia. In *IOP Conference Series: Materials Science and Engineering* (Vol. 352, No. 1, p. 012058). IOP Publishing.

Nielsen, A. S. E., Lundhede, T. H., & Jacobsen, J. B. (2016). Local consequences of national policies-A spatial analysis of preferences for forest access reduction. *Forest Policy and Economics*, *73*, 68-77.

Pakpahan, J., Eryadi, R. A., Budiman, A., Sunandar, N., Syahid, L. M., & Shihab, M. R. (2021, August). Critical Success Factors of IT Outsourcing in Indonesian Public Sectors: A Case Study at Employment Social Security Agency. In *2021 4th International Conference on Information and Communications Technology (ICOIACT)* (pp. 47-52). IEEE.

Pinto JK, Mantel Jr SJ. (1990). The causes of project failure. *IEEE Trans Eng Manage;37(4),* 269–76.

Pinto, J. K., & Slevin, D. P. (1988, June). Critical success factors across the project life cycle. Drexel Hill, PA: Project Management Institute.

Pinto, J. K., & Slevin, D. P. (1994). The project implementation profile: an international perspective. *Global Project Management Handbook. Singapore: McGraw-Hill*, 27-1.

Pouta, E. (2004). Attitude and belief questions as a source of context effect in a contingent valuation survey. *Journal of Economic Psychology*, *25*(2), 229-242.

Prabhakar, G. (2009). What is Project Success: A Literature Review. *International Journal Of Business And Management*, *3(9).* https://doi.org/10.5539/ijbm.v3n9p3

Raharjo, T., Purwandari, B., Satria, R., & Solichah, I. (2018, October). Critical success factors for project management office: An insight from Indonesia. In *2018 Third International Conference on Informatics and Computing (ICIC)* (pp. 1-6). IEEE.

Ramli, R. M. (2017). E-government implementation challenges in Malaysia and South Korea: a comparative study. *The Electronic Journal of Information Systems in Developing Countries*, 80(1)

Rao, U. B. (2001). Managing cross-functional teams for project success. *Chemical Business*, *5*, 8-10.

Mohd Ramli, Razlini. (2017). e-Government Implementation Challenges in Malaysia and South Korea: A Comparative Study. *Electronic Journal of Information Systems in Developing Countries.* 80. 1-26. 10.1002/j.1681-4835.2017.tb00591.x.

Rockart, J. F. (1979). Chief executives define their own data needs. *Harvard business review*, *57*(2), 81-93.

Savolainen, P., Ahonen, J., & Richardson, I. (2012). Software development project success and failure from the supplier's perspective: A systematic literature review. *International Journal Of Project Management*, *30(4),* 458-469. https://doi.org/10.1016/j.ijproman.2011.07.002

Schuman, H., Presser, S., & Ludwig, J. (1981). Context effects on survey responses to questions about abortion. *Public Opinion Quarterly*, *45*(2), 216-223.

Shan, M., Liu, W. Q., Hwang, B. G., & Lye, J. M. (2020). Critical success factors for small contractors to conduct green building construction projects in Singapore: identification and comparison with large contractors. *Environmental Science and Pollution Research*, *27*(8), 8310-8322.

Shenhar AJ, Levy O. (1997). Mapping the dimensions of project success. *Project Management Jurnal;28(2),* 8756–9728.

Slevin, D.P., Cleland, D.I. and Pinto, J.K. (2002). The Frontiers of Project Management Research. Project Management Institute.

Sridharan, B., Deng, H. and Corbitt, B., (2010). Critical success factors in e-learning ecosystems: a qualitative study. *Journal of Systems and Information Technology, 12(4)*, 263-288.

Standish Group (1995), Chaos (Application Project Failure and Success), The Standish Group International, January. URL http:// www.standishgroup.com/chaos.html

Stuckenbruck, L. C. (1981). Implementation of the project: Getting off on the right foot. *The implementation of project management: The professional's handbook*, 34-50.

Stuckenbruck, L. C. (1981). The implementation of project management. *Project Management Institute, Newton Square (PA)*.

Tettemer, J.M. (1981). Keeping your bosses happy while implementing project management – A management view. In Stuckenbruck, L. C. (1992). The Implementation of Project Management: *The Professional's Handbook. Addison Wesley PC*, PMI. (p69-93)

Thite, M. (2000). Leadership styles in information technology projects. *International Journal of Project Management*, *18*(4), 235-241.

Tourangeau, R., & Rasinski, K. A. (1988). Cognitive processes underlying context effects in attitude measurement. *Psychological bulletin*, *103*(3), 299.

Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). The psychology of survey response.

Tricker, M. (2001). Exploring alternative research designs. *Applied Research Resource Pack*, Aston University.

Tricker, M. (2001). Survey design. *Applied Research Resource Pack*, Aston University.

Turner JR. (1999). Project management: a profession based on knowledge or faith. *Int J Project Manage.17(6),* 329–30.

Wateridge J. (1998). How can IS/IT projects be measured for success. *Int J Project Manage 1998;16(1)*, 59–63.

Westerveld, E. (2003). The Project Excellence Model: linking success criteria and critical success factors. *International Journal of Project Management*. 21. 411-418.

Yusof, N. (2016). The credibility of Islamic religious institutional websites in Malaysia. Jurnal Komunikasi: Malaysian Journal of Communication, 32(2), 82-104.

Ziemba, E., Papaj, T., & Zelazny, R. (2013). A Model of Success Factors for E-government Adoption - The Case of Poland. *Issues in Information System*, 87-100.

Zillmann D, Schmitz A, Skopek J, Blossfeld H-P (2014) Survey topic and unit nonresponse. *Qual Quant* 48:2069–2088. https://doi.org/10.1007/s11135-013-9880-y