Why IT Projects Fail in Dubai Government Sector, what is role of the PM in IT Project Failure

لماذا تفشل مشاريع تكنولوجيا المعلومات في دبي في القطاع الحكومي ، وما هو دور مكتب إدارة المشاريع في فشل مشروع

تكنولوجيا المعلومات

by

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Dedication

To my dear parents, of you I was learned how to withstand, with no matter what the difficulties.

اهداء

إلى والدي العزيزين ، تعلمت منكم كيفية الصمود ، مهما كانت الصعوبات

Acknowledgment

I wish to express my utmost gratitude and appreciation to Allah for blessing and guiding me throughout the process of preparing my research paper. I also want to thank all members of my family for their never-ending support and encouragement. My family played a critical role in keeping me motivated and praying for me. I would like to thank my friends and other members of my class for their company and their constant support that pushed me to conduct my research study successfully. I would also like to express my gratitude to my supervisor , who played a key role in guiding me, motivating me, encouraging me, and supporting my research throughout the entire process. Finally, I wish to thank my school British University in Dubai (BUID) for providing a favorable environment for me to gain the much-needed knowledge and skills that made it possible for me to work on my research paper. I wish to emphasize that this would not have been possible without all the aforementioned people's presence in my life. I would not have managed to successfully conduct my research without their love, support, and prayers. For that, I am forever grateful, and I pray for Allah to bless you.

Abstract

This paper describes the results of a qualitative study to develop a framework to help organizations to embed useful project management in the IT Project industry. The paper is specifically aimed at identifying key factors of Information Technology (IT) in the UAE government sector (Dubai) based on the conditions encountered in different organizations of this study.

The paper discusses Information Technology (IT) failures in Dubai, involved critical topics that are also relevant to the research paper. These topics include IT projects, project management, and the relationship between project management and Information Technology (IT) software projects. The research determined that project management has a critical role in facilitating the IT software project success. The research identifies and discusses eight causes of project failures.

They are identified as poor project manager's skills and experience, poor project plan, weak business case, the lack of resources/budget management, the lack of top management involvement and support, the lack of stakeholder involvement, and inadequate organizational culture with example of true stories the interviewee had face.

Information technology is an integral part of the United Arab Emirates' public sector. This is mainly a result of the modern society's need to increase the level of efficiency and quality of service delivery in the public sector. The main objectives focus on identifying the factors that lead to IT software project failures in the government sector, the lessons learned as a result of these failures, and measures to implement in order to overcome these issues. All recommendations are viable and they cover the measures aimed to address the identified causes of IT software project failures in Dubai and in the UAE in general.

Keywords: Information technology, project failure, Dubai, public sector, PMO, qualitative research, interviews,

نبذة مختصرة

تصف هذه الورقة نتائج دراسة نوعية لتطوير إطار عمل لمساعدة المؤسسات على تضمين إدارة مشاريع مفيدة في صناعة مشروع تكنولوجيا المعلومات. تهدف هذه الورقة على وجه التحديد إلى تحديد العوامل الرئيسية لفشل مشروع تكنولوجيا المعلومات في القطاع الحكومي في الإمارات العربية المتحدة (دبي) بناءً على الظروف التي واجهتها مؤسسات مختلفة من هذه الدراسة.

تناقش الورقة إخفاقات مشروع تكنولوجيا المعلومات في دبي ، وتتضمن موضوعات هامة ذات صلة أيضًا بورقة البحث. تشمل هذه المواضيع مشاريع تكنولوجيا المعلومات ، وإدارة المشاريع ، والعلاقة بين إدارة المشاريع ومشاريع برمجيات تكنولوجيا المعلومات.

قرر البحث أن إدارة المشروع لها دور حاسم في تسهيل نجاح مشروع برامج تكنولوجيا المعلومات. يحدد البحث ويناقش ثمانية أسباب فشل المشروع. تم تحديدها على أنها مهارات وخبرات فقيرة لمدير المشروع ، وخطة سيئة للمشروع ، وحالة عمل ضعيفة ، ونقص في إدارة الموارد / الميزانية ، وعدم مشاركة الإدارة العليا والدعم ، وعدم مشاركة أصحاب المصلحة ، وعدم كفاية الثقافة التنظيمية مع امثال لقصص واقعيه حدثت مع الاشخاص الذي تمت مقابلتهم لهذه الورقه .

تكنولوجيا المعلومات جزء لا يتجزأ من القطاع العام لدولة الإمارات العربية المتحدة. ويرجع ذلك أساسًا إلى حاجة المجتمع الحديث إلى زيادة مستوى الكفاءة وجودة تقديم الخدمات في القطاع العام. تركز الأهداف الرئيسية على تحديد العوامل التي تؤدي إلى فشل مشاريع برامج تكنولوجيا المعلومات في القطاع الحكومي ، والدروس المستفادة نتيجة لهذه الإخفاقات ، وإجراءات تنفيذها للتغلب على هذه المشكلات. جميع التوصيات قابلة للتطبيق وهي تغطي التدابير التي تهدف إلى معالجة الأسباب المحددة لفشل مشروع برامج تكنولوجيا المعلومات في دبي والإمارات العربية المتحدة بشكل عام.

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CHAPTER 1: INTRODUCTION TO THE PROBLEM

In this chapter, the background of the research problem is introduced. It also includes the aim and key objectives of the research, as well as a specific kind of structure adopted for the thesis. In addition, this chapter formulates research questions that the thesis seeks to address and the research methodology that will be used.

1.1 Background of the Problem

The problem that this research study will explore is based on such high rate of Information Technology (IT) failures in Dubai government sector organizations, which could be improved considerably. Therefore, it is essential to investigate the root cause of these failures and work towards finding the ways of addressing them. This research study will develop key recommendations to be used for addressing the critical success factors as well as barriers of future IT projects in Dubai.

Government departments in the Dubai have continued undertaking information technology projects with the view of providing quality services to citizens. The information technology initiatives with the Smart Dubai Government vision that the government has put in place. Nevertheless, there has been a challenge among these government departments in terms of completion of the IT projects. The biggest problem has been that majority of government organizations do not have the project management office (PMO). The lack of project management office means that most employees in the government sector do not have the knowledge on the

standards and processes of project management. This increased the rate of Information Technology (IT) failure in the government sector in Dubai.

According to Gunawardhana and Perera (2015), the biggest problem that has led to the failure of government projects is poor management of such projects. Information technology projects require quality management for the sake of their success in the organization. However, within the government sector, quality management of projects is hampered by the politics that surround such projects. Management of the projects has failed as a consequence of the lack of internal political desire for success and the dominance of politics. Furthermore, Masiero (2016) points out that poor management has resulted from the lack of vision from project managers on what exactly needs to be done to attain the success of IT projects within the government sector. Thus, majority of the government IT projects are not succeeding because of the high level of unfocused leadership. This explains the emphasis placed on having a strong leader as he or she guides the project and has a crucial role in determining its success (Sweis, 2015).

In tandem with the findings of UAE writers, projects in the UAE are failing at an alarming rate. More than a third of implemented projects performed poorly which represent 33% of all projects according to Al-Hajj and Sayers (2014). The researchers carried out an independent survey where they interviewed several public sector individuals in the field of construction. the government platforms made available to the public. As such it becomes difficult to provide an accurate statistic in regards to the accurate number or percentage of failed IT projects undertaken in the Dubai public sector. The percentage of all projects success is only estimated to be around 66% showing a low rate of success among the in relation to statistics on failed or successful IT projects carried out by the government, there exists no data on failed projects in any of projects (Al-Hajj & Sayers, 2014). These statistics demonstrate that as much as the UAE experiences significant success in the

projects undertaken by the government, the rate of failure is still significanlty high thus the need to determine the causative factors to addresss this failure.

In regard to the key problem of failure of the projects, Alami (2016) extrapolates that the reasons for the failure of IT projects includes, unbalanced ecosystems, delivery of complex transformations such as the change in project scope and poor project management. The unbalanced ecosystems refer to the failure of IT projects as a consequence of their inability to survive within their own eco-system. Thus, it is vital to notice all signs of disturbance that result in a lack of balance and proper steps taken towards its management. Regarding delivery of complex transformations, its relevance surpasses the issue of meeting deadlines. The transformation happens via the use of roadmaps as opposed to schedules. On the other hand, poor management is all about the inability of project managers to provide the needed direction for the completion of projects. Poor skills and the lack of understanding of project managers means that the project cannot go beyond the first phase successfully hence failure according to Alami (2016).

Generally, Arcidiacono (2017) also identifies a number of factors that can hinder the success of IT projects. The most common factors are the activities that define and control IT project business, which reach 21%. This is followed by funding of the projects and aspects related to returns at 14%. In addition, the particular team that is tasked with supervising the project and the method they use can influence its success by 8%. Finally, according to this study, the least common factor is the dimension that involves procedure, tools, and approaches as it takes only 3% (Arcidiacono, 2017). There are also some projects that undergo partial failure. It is illustrated by the fact that the major goals developed in these projects were not accomplished. In some cases, the results of the projects were perceived as not desirable. Alami (2016) uses the findings of a study conducted in 2012 to reveal that the risk of failure of IT projects increases with its size. In this regard, small projects

stand less chances of failure as compared to large ones. The range of failure of these projects as it relates to the government is between 60 and 85% (Abbas et al., 2017). Abass et al. (2017) opine that within the field of e-government, failures tend to be defined as the inability to achieve goals. In further exploring the cost of Information Technology (IT) failure, it is evident that this cost can be divided into six categories illustrated below.

    1.1.2   Direct financial cost: the funds that have been invested in training programs, consultants, and equipment (Diirr & Santos, 2014).

    1.1.3   Beneficiary cost, referring to the loss of benefits that a government implementing its IT project successfully would have gained.

    1.1.4   Indirect financial cost, referring to the loss of money related to the time and effort of public servants (Ramos & Mota, 2014).

    1.1.5   Opportunity cost, referring to the better ways in which money lost from the failure of the IT projects could have been spent.

    1.1.6   Political costs, the loss of the reputation for the persons and organizations involved in the failure of the IT project.

1.2 Research Questions

Realizing the above research aims and objectives entails developing key research questions. The research questions that are to be pursued, including the key motivation for their formulation, are illustrated below.

    1.2.1   RQ 1: What are the key factors that lead the UAE IT software project failure in the government sector?

    1.2.2   RQ 2: What is the main lesson to learn from these project failures?

    1.2.3   RQ3: What strategies can be used to overcome the Information Technology (IT) failures in the government sector organizations of Dubai?

RQ1 was developed to facilitate a way of understanding the reasons that result in the failure of IT software projects within the government sector of the UAE. Consequently, addressing this research question will help expand the scope of the existing literature on why this kind of failures happens.

RQ2. This question was developed in order to determine what can be learned from the failures of IT projects within the government sector organizations in Dubai. This lesson will provide a starting point for changing the situation to a more positive extent.

RQ3. This question was created with the intention of providing a solution to the issue of Information Technology (IT) failures as it affects government sector organizations of Dubai. Thus, this question will allow the study to gather all possible strategies that can be applied and used to overcome the factors leading to the failure of these projects. With its help, necessary recommendations will be given to be implemented.

The research questions are supported by key objectives. IT is an essential aspect of the efficiency of government programs and services, especially in the current world of technological advancement, as evidenced by the increased role of the Internet and sophisticated technologies in the daily life of users. Thus, it is vital to evaluate the degree of success of IT projects in the government. This is a significant topic and the efforts poured into its improvement need to be increased to understand why these kinds of projects tend to fail within the public sector in Dubai (Flyvbjerg, 2014). By addressing the question of what factors result in failures, the results will be obtained, and they will provide a ground for comprehension of the rich and evolving phenomenon of IT projects within the government sector. Consequently, a practical advice will be given to those who are charged with implementing these kinds of projects. To do this, it is important to perform a substantial amount of work that will foster the generation and organization of information concerning the actual experiences of IT projects in Dubai. Thus, the primary aims of this research

study involve explicating and reporting on the key details of IT project initiatives in Dubai, how they are developed, implemented, and on their success rate.

1.3 Research Aim and Objectives

Two key aims and three objectives were developed for this study; accordingly, the aims of this research study are:

      1.3.1   To investigate the current situation of IT projects in Dubai;

      1.3.2   To identify the key factors resulting in the failure of IT projects within the government sector organizations of Dubai with particular reference to the process of their development and implementation.

The achievement of this aim will be completed by taking into consideration the following research objectives.

      1.3.3   To identify the key factors that make the IT software projects in the UAE fail in the government sector;

      1.3.4   To identify the main lesson that has to be learned from this project failure;

      1.3.5   To determine the strategies that can be used to overcome the Information Technology (IT) failure in the government sector organizations of Dubai.

1.4 Significance of the Study

The significance of this study is based on the need to reach a form of improvement of IT projects functioning in Dubai. This will help in the stabilization of the UAE economy and it will be done by garnering attention from outside of the emirates (Mahmoodi & Nojedeh, 2016). This further explains the significance of this study because it will result in the enhancement of the current Information Technology (IT) policies and practices. Such enhancement will in turn foster the initiation of an increase in the optimization and efficiency of Information Technology (IT) in

Dubai. The additional significance of this study is illustrated by how the findings will contribute to understanding the concept of strategic road mapping of the effective implementation of Project Management (PM) and IT projects and their application in Dubai government sector.

Studies have found that while the UAE and particularly Dubai is a leading IT region as evidenced by its e-government model, the degree of its participation and inclusion is actually declining (Elsherif et al., 2016; Ahmed & Hossan, 2016). Thus, the significance of this research study is based on its contribution towards comprehension of the dynamics of IT projects within the Dubai context that will result in the development of an overarching framework used to facilitate the successful implementation of IT.

Furthermore, IT project development and implementation will be evaluated as applied to different government sectors of Dubai. The significance of this lies in gaining insight into the entire process of IT project from the beginning to the end, when the project is implemented in order to identify failure and the associated causes (Shamsi, Ameen, Isaac, AlShibami, & Khalifa, 2018). The stages of project development and implementation will be evaluated and the obstacles encountered at each step will be identified.

This study was conducted with a substantial amount of emphasis placed on the public sector. It was done through the analysis of IT projects within government organizations with the aim to enhance the role of IT for both institutional and administrative reforms.

1.4.1 Definition of Terms

1.4.2 Information Technology is the utilization of computers and associated devices for the purpose of storing, transmitting, and manipulating data, usually within the context of businesses or other forms of enterprises, resulting in the increased efficiency and automation of processes (Abbas, Faiz, Fatima, & Avdic, 2017).

1.4.3 **Information technology project** comprises the development, setting up, and implementation of computer systems and their applications (Almajed & Mayhew, 2014)

1.4.4 **Project management** is the practice of applying, organizing, and managing key efforts placed within a project (Al-Hajj & Zraunig, 2018).

1.4.5 **Failure** is the inability to realize a goal or to achieve something (Alami, 2016).

1.4.6 **E-governance** is the application of IT within the delivery of government-related services (Dubai 10X, 2017).

1.4.7 **Public sector** is a section of the economy that is usually controlled by the government and comprises public organizations that provide services to the citizens (Lootah & Miailhe, 2017).

1.4.8 **Smart government** involves the utilization of innovative business models, policies, and technology for the purpose of handling key challenges affecting the public sector (ElSherif, Alomari, AlHaddad, & Alkatheeri, 2016).

1.5 Scope of Work

The focus of this study lies on IT projects developed and implemented in Dubai and the failure associated with them. The latter will include those projects that were never developed in the first place and remained on paper alone. Furthermore, failure will also include those projects that were developed but never implemented. Finally, failure will entail those projects that were implemented but did not succeed. The study will investigate the key reasons that have led to this failure. Some of the projects that have failed will be identified and included in the study to demonstrate the degree of the failure.

1.5.1 Structure of the Thesis

This dissertation stracherr as

Chapter 1: Introduction

In this chapter, the research problem is introduced, providing a context for the study. In addition, the key aim and objectives of the study, including research questions to be pursued, are highlighted in this chapter. The research methodology used is also emphasized in this introductory chapter. In addition, this chapter defines the research gap that is to be addressed and the ways in which this research study can contribute to it. This chapter also identifies the key reasons explaining the significance of this study.

Chapter 2: Literature Review

This chapter will review what is presented in literature regarding IT projects in the government and particularly in Dubai government sector. Furthermore, it will review project management and its connection to IT projects that are applied in the government. Finally, this chapter will assess the main causes of Information Technology (IT) failures in government, paving way for understanding how this issue can be prevented.

Chapter 3: Research Methodology

This chapter will describe the methods that were used in the study and their application, including the research design and methods used to facilitate data collection. Furthermore, the key research ethics maintained during the study will be mentioned in this chapter along with the limitations of the methods used.

Chapter 4: Data Analysis

This chapter will deal with the qualitative analysis of the collected data and provide a presentation of the emerging key points. This process will entail studying the interviews that were conducted with top-level government personnel, who are an essential part of the process of change in the course of incorporating a number of Information Technology (IT) projects in Dubai government

sector. This chapter discusses and highlights the feedback that was obtained from the discussions held with the participants. This will be followed by a process of correlating these points with the existing literature.

Chapter 5: Findings

The chapter on findings was prepared for the purpose of sorting through the analyzed data and providing meaning to it. This will be done by correlating the results of the study with the existing literature and the research questions that have been developed. In addition, this chapter will provide the point of view of the researcher in relation to the data presented.

Chapter 6: Conclusion and Recommendations

This chapter will provide a conclusion to the study by reiterating the key findings that were made regarding the research problem. It will then highlight the key recommendations that can be considered by the Dubai government in overcoming the issue of Information Technology (IT) failures. In addition, the considerations for future research will be provided in this chapter.

Chapter 7: References

This section of the study will highlight a list of key sources that were used in the research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The aim of this section of the research paper is to clearly identify the gap in the literature on the chosen research topic and to demonstrate its importance. Due to the rapid development of most countries in the Arab Gulf States, including the UAE, the public sector has consequently aimed to transform itself to reflect this trend (Sundarakani, 2017). Over the years, the increased incomes in cities like Dubai have motivated the ruling governments to invest in information technology sector in order to ensure fast, efficient, and quality service delivery.

Numerous studies have been conducted on the growth and development in Dubai due to technology advancements and adoption. According to Bishr (2017), Dubai has made impressive leaps in incorporating IT and other technology in its government services through such initiatives as the Smart Dubai initiative, Dubai Smart Government, and the Dubai E-government. Conversely, according to Halligan (2016), the successful IT project implementation has been demonstrated in Dubai's banking sector as well through mobile banking. Halligan cited this success as a result of effective management.

On the other hand, there is a lack of adequate studies and research on Information Technology (IT) failures in Dubai, where large budgets for various IT projects have been allocated. This could be a result of a lack of consensus among various researchers on clear definitions of either the success or the failure of IT projects. This observation is affirmed by Al-Hajj and Zraunig (2018), who believe that in literature, IT project success and failure lack a clear definition. On the other hand, Alami (2016) notes that for most projects, success is often associated with the subsequent achievements such as on-time delivery whereas the failure of a project is described as the lack of success.

This research will therefore make a significant contribution to defining and demonstrating the aspects of Information Technology (IT) failure in Dubai government sector adding on to already existing literature. Furthermore, the topics covered in this research paper will be beneficial in demonstrating the role relationship between IT software projects and project management. Based on the relationship, external parties will be able to identify the role played by project management in the success or failure of IT software projects.

2.1.1 Project Management

Project management is a vital managerial role in both the private and public sectors. According to Shibani (2016), project management can be defined as the process where an individual or a group of individuals apply a combination of tools, knowledge, technologies, and skills during specific project activities in order to meet some outlined requirements. It is a section of management that is integral to any project, both simple and complex types of it. Al-Dubai and Alaghbari (2018) affirm the importance of project management by claiming that it has a critical role in preventing project failure and maintaining project resources, costs, and timeframes in accordance with the set budget. In other words, Al-Dubai and Alaghbari place the basis of success or failure of a project on the efficiency and effectiveness of project management. This works in contrast with the studies conducted by other researchers, such as Carlton. According to Carlton (2018), it is erroneous to state that IT project success or failure is a reflection of the project management capabilities. According to him, IT projects in particular rely on the attributes of the projects themselves.

However, the role of project management is still vital. Al-Hajj and Zraunig (2018) reflect on the significance of project management in ensuring that projects are completed as intended, efficiently and based on cost minimization, achieving the external objectives in relation to the external stakeholders' needs. To achieve efficiency and effectiveness based on Al-Hajj and Zraunig's

success factors, it is therefore important to ensure that critical success factors are established and to provide a guideline that the completed project will be measured against. The guideline does not always fit all types of framework. The factors outlined in any guideline may vary from one public sector organization to another; depending on the characteristics of the IT project itself as well as the varying success dimensions.

The measurement of the efficiency of project management may follow a predefined model or a list of criteria that can be amended to fit different types of governments. According to Radujković and Sjekavica (2017), for instance, project management success can be measured based on the criteria of the actual project cost, the project completion time, its quality, activities, the scope, and resources utilized. On the other hand, Shibani (2016) significantly expands Radujković and Sjekavica's success criteria, claiming that for successful project management, especially in the government construction sector, three key elements should be identified and managed. These elements include identifying the project requirements, addressing, and satisfying the needs, expectations, and concerns of different stakeholders during all phases of the project. The third element involves balancing a wide range of project constraints that could impede the project completion process.

Project management, therefore, encompasses the overall management of the project implementation, the stakeholders who will be affected by the project, and the delivery of the benefits, both tangible and intangible, that are expected to be realized. As a result, the success of project management focuses on the aspect of project delivery efficiency whereas the project success focuses on the project delivery effectiveness in view of the need and expectations of the stakeholders. According to Shibani (2016), it is important to apply quality project management techniques, procedures, and practices. By doing so, many benefits will be realized, including the

clarification of the time constraints, identification of challenges in advance in order to take the corrective action in a timely manner, measuring important milestones against the outlined plans, as well as the application of appropriate tactics in line with the trade-off analysis

2.1.2 IT Project Management

IT projects are crucial and sensitive due to the overall complexity of information technology. According to Morcilio and Toress (2016), information technology refers to a collection of processes, tools, and procedures like programming, data conversion, data communications, systems design, and analysis, as well as other accompanying types of equipment used in the collection, processing, and presenting of data. In this regard, an IT project encompasses a collaborative effort to ensure that various components of IT are planned, implemented, executed, and monitored upon completion in order to realize the intended benefits.

IT projects are, in most cases, undertaken with the aim of transforming different sectors of the economy. In case of the public sector in Dubai, through its e-government initiative, the government has incorporated IT in most of its service offerings. Through various IT projects, the government of the Dubai aims to transform the service delivery and increase the happiness levels of the Dubai nationals (Dubai 10X, 2017). Furthermore, various aspects of the government's efforts will contribute to an improvement in growth, wealth generation, productivity, and the development of a knowledge-based economy.

Most recently, Dubai has launched various projects, most of which are IT projects, under the Dubai 10x initiative. The Dubai 10x initiative is a project that was launched by His Highness Sheikh Mohammed Bin Rashid Al Maktoum with the aim of propelling the city of Dubai ten years ahead of other governments in terms of innovation. Some of these projects include Smart Dubai and Dhowber that are also under the Ports, Customs, and Free Zone Corporation, which aims to

transform the marine cargo transportation sector. There is the Multi-mode super port IT project under the Dubai Engineering Aviation, which aims to integrate and expand the Al Maktoum international airport from Aerotropolis to Cosmopolis to accommodate space flights as well as supersonic, subsonic, and hypersonic flights (Dubai 10X, 2017). The IT projects undertaken by the Dubai government are intentionally disruptive in nature. They aim to not only provide value to the current consumers but also to anticipate and transform their future trends and needs. Through the initiatives, the Dubai government wishes to improve various public services and the relationship between the emirate and its citizens.

IT projects of such scale require huge investments in the form of time, resources, skills, and expertise, as well as finances. All the aforementioned resources are critical elements in contributing to project success as mentioned by Shibani (2016) and Al-Shaaby and Ahmed (2018). This is also in line with Alami's (2016) view that for IT projects to be successfully implemented, their completion must be done at a cost equaling the one outlined through the allocated budget within the set time-frame, with a comprehensive delivery of all the necessary functionalities. Alami's perception is based on an assessment of the Standish group report. In addition, Alami notes that a maximum of 16.2% of projects under investigation adequately met the requirements, with 52% accounting for partially unsuccessful ones and 31% being concluded to have failed.

To develop and implement IT projects, it is important to incorporate project management practices through IT project management. IT project management is a crucial aspect in all organizations and governments alike. Information technology project management refers to the structured methodology of planning, organizing, controlling, and directing of information technology projects. Similar to all other projects, IT project management involves a process that has a start and end points, referred to as the project life cycle (Szopik-Depczyńska & Lanfranchi, 2016).

These points are in form of five phases that include the initiation phase, the planning phase, the implementation phase, the monitoring and controlling phase. The advantage of incorporating project management across all the five phases is that it leads to a reduction in incidental costs, improved stakeholder and consumer satisfaction, and more efficiency when the IT software is launched and put to use by the customers (Dunmade, Udo, Akintayo, Oyedepo, & Okokpujie, 2018). All the identified phases are crucial and hence they need the same amount of professionalism and attention.

Most organizations and governments appoint a specific individual, often a project manager, to oversee the IT project to completion. This approach is meant to provide a clear chain of command for other parties involved in some aspects of IT project management (Tomomitsu, Carvalho, & Moraes, 2018). Project managers act as the leader, providing guidance and ensuring that all parties stay on course in an effort to achieve success in the project completion. They are also the final decision makers whose actions depend on their individual approaches to leadership. However, according to some researchers, this approach is outdated and does not consider the contemporary technology environment properly, especially when dealing with unprecedented challenges. According to Cunha, Moura, and Vasconcellos (2016), for instance, various challenges experienced in the course of IT project management demand collective decision making rather than placing of the decision-making role on one individual. Therefore, comparisons can be made between IT project management that embraces a collective decision-making approach and one that relies on the traditional project manager as the sole decision maker to determine the levels of success or failure.

The need for a collective decision-making approach is portrayed through the various types of decisions that need to be made, ranging from the type of processes, the technology to use, and the

applicable tools, based on the consideration of the outlined objectives and constraints. This reflects the complexity that the IT project presents to the management (Bautista, Diego-Mas, & Medina, 2018). The process, therefore, requires a structured guideline in its approach. In Dubai, for instance, the COBIT 5 framework is applied for IT project management (Dubai Customs , 2016). The framework provides an outline of principles such as the necessity to meet the stakeholders' needs, the application of a single framework and a holistic approach to IT project management, and making of a clear distinction between management and governance. However, following a guided framework does not equate to successfully executing IT project through the collective decision making.

Despite being considered modern, most states of the Gulf Cooperation Council still rely on traditional social and political beliefs and practices. In most cases, it is reflected through the centralized position of the state ruler where decision making is centered (Frijns, 2016). This reduces the opportunities for a collective decision-making approach to IT project management.

2.1.3 Software Project

In most cases, software projects function in line with other IT developments. A software project can be described as the programs and associated information utilized in IT. Over the years, various governments have embarked on developing and executing software projects. According to Al-Dubai and Alaghbari (2018), an approximate sum of $750 billion was invested into executing software projects globally in 2013. From the total amount, approximately 40% took close to $300 billion, invested in software projects in the United States. 25% of the total amount, which equates to approximately $200 billion, was invested in software projects in Europe, whereas software projects in Asia received close to $100 billion in investment. The remainder of approximately $150

billion was invested in software projects in other parts of the globe, including the Middle East (Al-Dubai and Alaghbari, 2018).

One major software project undertaken by the Dubai Government was the SAP software, controlled by the Dubai Electricity and Water Authority (DEWA). Over the years, the Dubai emirate experienced a continued increase in population that has inevitably led to a growth in the demand for water and electricity resources. In response, DEWA invested in the SAP software with the aim of managing the water transmission process more efficiently, as well as to automate several system processes (Project Management Institute, 2018). The software project faced various project management challenges that have considerably undermined its success at a given period of time.

2.1.4 Relationship between Project Management and IT Project

As demonstrated, project management plays a vital role in the public sector. Conversely, information technology has an equally important role in the current global setting. The successful completion of IT projects based on the respective outlined critical success factors is important. Project managers are expected to be competent in order to lead the project management team through all phases of the IT project lifecycle, from initiation to completion. The most important aspect is the efficient and effective delivery of IT projects to the end consumer (Hilorme et al., 2018).

The public sector is a permanent fixture in every country, including the UAE. On the other hand, IT projects are temporary in nature due to the automatically set timeframe and the delivery of specified benefits to the identified stakeholders. Still, despite their temporary nature, the impact of some IT projects is capable of lasting for decades. According to Obeidat and Aldulaimi (2016), the outcomes of such projects as IT ones can be a reflection of the decisions made during the early phases of the project lifecycle. Based on the assessment presented in a report of the Project

Management Institute, out of the total unsuccessful projects identified, 47% were significantly affected by the critical decisions that were made in the course of the projects' cycles such as the planning phase. In this regard, project management can considerably influence the outcome of IT projects either positively or negatively.

Through project management, best practices are applied in managing IT projects. They include the aligning of the project goals with the overall goal of the UAE's strategy direction and the ways of tactfully solving challenges experienced in the course of the project. With reference to IT, such challenges may include a change in technology due to the dynamic nature of IT. The application of project management tools is vital when designing and controlling project plans, the set deliverables, budgets, resources, and in assigning tasks to various members of the team involved in the process (Andersson & Chapman, 2017). Such tools help in minimizing the risks and challenges that might be experienced.

The relationship between project management and IT projects is further demonstrated in Dubai's approach to incorporation of the discipline in managing its massive IT projects. Kalidasan (2017) states that project management has contributed to some elements of project failures in IT because of the long association the discipline has had with IT projects. On the other hand, according to Radujković and Sjekavica (2017), project management has been perceived as a measure that has allowed the successful implementation of strategic changes within different sectors of the economy, particularly in the public sector. They further affirm that an appropriate IT project can be successful without project management — however, the efficient and successful application of project management can significantly enhance the IT project's success. This provides a progressive relationship between project management practices and IT project success.

2.2   Major Causes of IT Software Project Failures

This section will demonstrate causes of IT Project failures

2.2.1 Introduction

Almost all industries can be vulnerable to project failure. However, due to the complex and dynamic nature of the IT industry, it is prone to facing more risks and chances of failure than most other industries. The Group CHAOS Report by the Standish Group indicated that out of the 50,000 IT projects surveyed, more than 20% were either canceled or failed (Bautista, Diego-Mas, & Medina, 2018). The report also made a comparison between small IT projects and large ones, such as those undertaken by the Dubai Government. Based on the comparison, larger IT projects were found to be more likely to fail in comparison to smaller projects. Some other researchers identified factors that could be attributed to Information Technology (IT) failures. These factors include project delays, the lack of project team cohesion, and poor leadership (Harwardt, 2016 and Atout, 2016). This research paper will focus on nine factors that cause IT software project failure.

2.2.2 Poor project manager skills and experience

The project manager of any organization plays a critical role in ensuring that a project is planned and implemented successfully. According to Alami (2016), a successful project is a reflection of an organization's ability to expect, understand, and successfully come up with strategies to simplify the task. A project manager should be capable of ensuring that the IT project realizes the intended benefits (Mossalam & Arafa, 2016). It requires a good level of both soft and technical skills including interpersonal and communication ones. Mostly, project managers in the public sector do not have the skills to successfully complete Information Technology (IT) projects because it mainly rotates around the task of governing rather than managing.

The lack of the necessary project management abilities of a project manager as discussed by the Project Management Institute (2018) leads to unnecessary data, poor quality work, and lack of innovation in solving the problems at the organization. An inexperienced project manager will find it difficult to identify the potential risks and guide the team in effectively handling them. In turn, this will lead to an increase in challenges that would have been solved quickly without delays if a competent project manager had been assigned with the task (Nijhuis, Vrijhoef, & Kessels, 2018)

2.2.3 Poor project plan

The development of a project plan usually happens at the early stages of the IT software project creation. The essence of this task lies in enabling the project management team to draw a clear plan of actions while creating the project budget. They are tasked with determining the required resources to implement the project, identifying the critical personnel who will aid in driving it in terms of skills, identifying the project objectives, and defining a period of time that the entire project is expected to take, as well as the desired time of a project (Taherdoost & Keshavarzsaleh, 2016).

Overall, the project plan should act as an outline for the project. In this regard, following a poorly drawn plan will have numerous negative consequences throughout the entire course of the IT software project. A poor plan often results in different members of the team not knowing what exactly they are working towards due to a lack of clearly set objectives. The consequence will entail many individuals working on the same project but following different objectives. This will most likely lead to the project failure. A poor plan also means that the project management team will be unable to determine the type of skills that will be required for project implementation. As a result, this might lead to the hiring of people who do not understand the basic aspects of IT

software, meaning that they will be unable to aid the Dubai government in delivering a successful project (Al-Hajj & Zraunig, 2018).

2.2.4 Weak business case

A well thought out and structured business case is a basis upon which a proposed IT software project is justified. A business case is important in identifying the project scope and costs based on the expected outcomes in terms of tangible and intangible benefits gained upon completion. With a strong business plan, an individual will be able to identify any potential risks as well as the opportunity costs (Morley, 2018). A strong business case should be able to be used by the Dubai government to help them critically define the reason as to why they should invest in the project and what benefits will be realized for both the government and the citizens of the emirate. On the other hand, a weak business case might result in the IT software project having a wrong scope, inaccurate cost estimations, poor requirements, as well as wrong objectives. As a result, the business case will be unable to help determine how the IT software project's value will be maximized (Andersson & Chapman, 2017)

The consequences of a weak business case are far-reaching because it might cause the entire project to fail before it fully commences. There would be no justification whatsoever of fully investing in the identified type of IT software project (Bishop, 2018). As a result, if the government chooses to proceed with the project, they will be reluctant to invest the adequate resources in terms of funds, expertise, and time. The aforementioned elements are vital in outlining the reasons of Information Technology (IT) failures.

2.2.5 The lack of resources/budget management

The resources are a core element in ensuring the success of a project. They will determine the extent to which a project will be completed. A report by PWC cites the scarcity of resources as

one of the leading causes of project failure in the public sector (PricewaterhouseCoopers AG, 2017). A lack of resources at any given point of the project lifecycle will result in delays as the individuals involved in its implementation have to wait to receive more resources. These resources could be in the form of human capital, finances, or other equipment needed to implement an IT software project. The resources not only need to be made available but they also have to be allocated adequately across all areas of the IT software project to ensure its efficiency.

A lack of proper budget management may lead to the wastage in using resources, overestimation or underestimation of costs, as well as the inadequate fulfillment of the desired project deliverables. According to Alami (2016), a considerable number of projects spend their allocated budgets long before they reach the completion stage. Cost overruns are a major and common challenge related to poor budget management. This is an issue that has negative consequences on the project and the development of the Dubai economy in terms of growth, development, and future prosperity. This cause was further demonstrated through the analysis conducted by PWC of various failed projects. In their report, PricewaterhouseCoopers (2017) state that the lack of proper budget management has led to the failure of the NHS care records services, where an underestimation of the budget resulted in spending of ₤24billion. Moreover, the resources can point to the external team called vendors. The organization understand well how to select vendors because it affects t time, cost and quality of services or product delivered. There are steps to select your vendor as demonstrated below:

Step1: Identifying a Supplier

In this case, before a supplier is selected, companies should focus on getting the opinions from stakeholders. The different groups of stakeholders that can help in the identification of the potential

supplier include those from the research and development department, marketing, purchasing, and quality assurance (Eldridge, 2012)

Step 2: Measuring Supply Performance

The second step is the measurement of the performance of the supplier and audits can be helpful in the whole process. It is important that the company conducts an audit in multiple stages to identify the supplier relationships (Eldridge, 2012). This will help get quality products.

Step 3: Gaining Supplier Feedback

To get supplier feedback, organizations can use a self-assessment questionnaire. The self-assessment questionnaire is important in helping identify any weaknesses in the performance of the supplier and their understanding of operations (Eldridge, 2012). P.(n.d.)

Step 4: Achieving Certification

With the growth in the relationship with the supplier, there should be a realization of positive performance for both parties. Quality performance gives the supplier a certified status when they have met the needed criteria. When the performance drops, such certification is lost by the supplier (Eldridge, 2012).

Step 5: Developing Partnerships

Ultimately, the manufacturer/supplier relationship happens when the partnership is formed. This is important in allowing the knowledge of the materials they are going to supply as well as the quality that is needed (Eldridge, 2012). P.(n.d.)

Step 6: Ensuring Quality for Consumers

Consumers have to get the quality that they deserve because of their important role in the company. Once the company builds a professional and quality relationship with suppliers, it can be assured of quality products for consumers (Eldridge, 2012).

2.2.6   The lack of quality management

Quality management is vital in ensuring project success. It refers to the intentional measures and approaches implemented to ensure that the IT software information, data, the entire system, and the final project outcome are of the highest quality, mostly in terms of functionality. The lack of quality management in the implementation of the IT software project by the Dubai government could lead to issues such as the use of substandard or outdated technology (Raja & Mubeena, 2017). Ultimately, such issues will cause project failure due to constant system halts once the project is completed or in the course of the implementation process.

The lack of quality management will affect the acceptance and usage of the IT software by not only the Dubai nationals but also by the members of the government responsible for the project. As a result, the government will have wasted resources, funds, as well as time on working on the Information Technology (IT) project that would not serve the purpose it was initially intended for. Quality management requires a designated person to be in charge of this critical aspect in order to identify the vulnerable areas and to devise measures that will ensure that the quality of the IT software project is not compromised.

2.2.7   The lack of top management involvement and support

Top management's involvement and support are critical in project implementation. Top management has a significant influence on the projects for which resources are allocated and in motivating the project management team to stay on course for the benefit of the entire public sector. In addition, top management plays a crucial role in strategy development, which is a vital aspect in providing guidelines regarding the direction which various sectors within the government would wish to take (PricewaterhouseCoopers AG, 2017).

In many cases, the implementation process of many IT software projects fails due to the lack of commitment of the top management. In this case, the much-needed resources are diverted to other projects instead of the IT software ideas. In addition, top management plays a role in motivating the project staff. With the support of the leader, the team is likely to be sufficiently confident in knowing that their efforts are not only supported but also appreciated. A staff that is not motivated will not be able to achieve the desired levels of project success.

From another perspective, the lack of involvement might lead to the wastage of resources, time, and efforts of particular individuals who are committed to the project in comparison to others who might not be as committed. Therefore, it is crucial for the top management to be involved in the planning phase through the implementation phase, the monitoring phase, and finally the project closure phase. Otherwise, their inactivity will contribute to the failure of the project.

2.2.8 The lack of stakeholders' involvement

Different IT software projects have different types of stakeholders. It is important to clearly identify the relevant stakeholders who will most likely be significantly affected by the project. When implementing the IT software project, the main goal of the Dubai government should be placed on ensuring that the IT software reaches the intended level of usage and user engagement. Stakeholders' involvement does not begin when the project is being implemented; rather, it starts from the moment the government creates the vision for the project during the initiation phase (Mungatu & Mulyungi, 2017). The involvement of stakeholders is crucial because it enables the government to gain a perspective from their point of view. As a result, it is easy to determine whether the IT project software being developed and implemented will adequately satisfy their needs and meet their expectations.

The stakeholders should be able to relate to the project and the expected benefits they will experience upon its completion. By involving stakeholders, the government would also be able to identify the existing training gaps (Lehtinen, Aaltonen, & Rajala, 2018). IT software can be complicated, especially if sophisticated technology is used. As a result, if the stakeholders were not involved throughout the entire process, they could strongly reject the new IT software. In the end, the project would fail entirely. On the other hand, involving a wide range and a large number of stakeholders could result in significant delays as all stakeholders wish to contribute their opinions and input. This further emphasizes the need to have clear intentions when identifying the project's stakeholders and applying measures to manage them effectively (Alami, 2016). Improper stakeholder management could easily result in resentment towards the IT software and the Dubai government in general.

2.2.9 Organization's culture

An organization's culture defines the essence of what various individuals who exist in the public sector believe in. It is also a reflection of people's value systems that define their approaches to IT software projects (Nguyen & Watanabe, 2017). An organization that values standard practices of project management will work towards ensuring that the best practices are implemented in order to achieve the success. On the other hand, an organization's culture that disregards such practices will evidently lead to the failure of the IT software project.

An organization's culture that focuses on the use of technology will encourage various members of the project management team to be creative and find solutions to the challenges faced in the course of the implementation process. The Dubai government encourages innovations to a certain limit but there still exists some policies that might discourage the innovations at a certain stage of the project's lifecycle (Al-Hajj & Zraunig, 2018 and Alblooshi, 2018). IT software keeps changing

in its nature because of the growth in technology. However, in the Dubai government's culture, most aspects revolve around the project manager, hence discouraging innovative solutions to modern technology problems. Another factor is that the public sector is often characterized by a culture that thrives on parties placing the blame on each other when facing challenges rather than working together to devise the solutions. This is further affirmed by PricewaterhouseCoopers AG (2017) who cite this type of culture as a factor contributing to the project failure.

It is important to have clear cultural objectives to avoid any forms of disputes between parties in the organization. Clear cultural objectives eliminate the chances of conflicts on belief system, the behavior, and ideologies that make up the society as reflected in the behavior of project stakeholders (Saad, 2009).

Accordingly, culture is important in showing the human element of engineers and it is made up of various elements including morals, beliefs, customs, and habits that are learned from other people irrespective of the education level they possess. Thus, it is important to have guiding principles on how individuals who come from different cultures should behave and interact with each other in the course of their project work. The three key parties who are involved in the project including the contractor, Client, and Consultant should have a clear view of the cultural differences to have a proper working framework and make quality decisions for the project (Saad, 2009).

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

In this section of the research paper, the main aim will be to describe the process through which the research was conducted by applying appropriate approaches. The research design will also be explained. The chapter will include a description of the data collection methods applied to facilitate the research process as well as a description of the sample size. It will be beneficial in giving a breakdown of the key elements that contributed to its creation.

3.2 Research Approach and Design

This section refers to type of approach and design use for this dissertation

3.2.1 Qualitative method

A qualitative research design was used for this study. The qualitative method is a scientific method of observation that entails the collection of non-numerical data (Almalki, 2016). Specifically, the qualitative method was used as exploratory research. The reason for the use of the qualitative exploratory research was to gain an in depth understanding of the opinions, views, reasons, and motivations that are related to the failure of Information Technology (IT) project in the Dubai government sector (Conboy, Fitzgerald, & Mathiassen, 2017). The exploratory research offered an easier opportunity to gather diverse views on the questions that had been developed. Through the qualitative approach, the researcher was able to obtain information from different perspectives based on the viewpoint of the participants. (Snelson, 2016 and Mohajan, 2018). Thus, it was easier to gather the needed amount of data based on the use of qualitative methods.

3.2.2 Interview

Interviews were used to gather data in the study. Specifically, structured interviews were used in the study. Structured interviews are formal and organized interviews that mainly entail the interviewer posing questions to the interviewee. In essence, structured interviews also allow the in-depth assessment of a small number of participants while focusing on their perspectives (Teachman & Gibson, 2018). For my interview, I have selected the government sector because the government sector in UAE handles big projects and supported by government sector always in success or flair (Almuraqab & Jasimuddin, 2017). To get interview appointment in the government sector is not easy with managers at different levels because they are always busy handling projects and other responsibilities (Flyvbjerg, 2014). I did my search about the government sector in the UAE and selected 11 companies for interview. However, out of these companies, I only ended up with 4 companies that accepted to be interviewed. I got a total of 15 respondents across all the 4 companies drawn specifically from the IT department and the Project Management Office (PMO). I have tried to cover different positions on IT department, as my focus in this paper is to understand the project failure and how the project management office (PMO) can assist in the Information Technology (IT) project failure (Project Management Institute, 2018). Before the collection of data through interview questions, the researcher began by collecting the basic demographic information including gender, age, position in the company, and experience in the company to get a good understanding of the sample population. Such information was also critical in helping the researcher analyze answers of the interviewee.

The interview questions used to derive responses from the participants are as outlined below

1.   Do you work in the IT sector of the Dubai government?

2.   Have you experienced IT failures in the course of your work?

3. According to you, what is IT failure in the government sector?

4. What factors have led to IT software project failures in the UAE government sector?

5. What lessons can be learned from the IT software failures?

6. How can IT failures be overcome in the government sector?

7. Do you think the problem will be fully resolved in the future?

3.3 Data Collection

This section refers to collection of data I used in this dissertation

- **Procedures**

Specific procedures were used in the process of data collection. In order to successfully conduct the study, the researcher gained access to the organization in each sector by submitting a request to the Director of HR. Where researcher requested to interview IT project managers or IT manager or heads who runs Information Technology (IT) project. The total company the researcher requested to conduct the interview were 11 government organizations. However, out of the 11 organizations, 4 accepted and allowed the researcher to conduct the interview and do the necessary arrangement for the interview. all companies requested the researcher to sign confidential agreement that she will not mention companies name or participant names in this study. All of the responses collected through this interview will always remain anonymous. Moreover, researcher informed participation that this study was entirely voluntary and they had the right to withdraw or escape any question they do not want to answer or discontinue their participation during the interview at any time without penalty.

- **Sample characteristics**

The sample consisted of 4 organizations in the government sector. Out of the initial 11 that were approached, only 4 agreed to do the interview and hence a total of 15 participants were selected including both UAE and non-UAE citizens. The 15 participants mainly included project managers, IT project managers, and head of IT departments involved in development and implementation of IT software projects, Table 3.1 below shows number of participants and job titles on each organization. The typical participant at least has 5 to 11 years of experience in handling Information Technology (IT) project in a Dubai government sector and was in charge of a particular Information Technology (IT) project in the organization. The participants were of mixed gender with both men and women involved in the study. All the selected participants work in the government sphere and hence they were beneficial in identifying the causes of Information Technology (IT) project failures in the public sector.

Table 3.1: Number of participants from each organization:

Organization	Number of participants	Job Title
A	8	IT director
B	10	IT Manager /head of IT departments
C	5-7	IT Manager/ head of departments /project Manager (PMO)
D	8	IT Manager/IT support / Channel and application / We application Manager

The part below presents the background information that illustrates the characteristics of the research participants. It gives a clear view of the profile of the participants who took part in the study. MS Excel were used to demonstrate the following participant characteristics;

1. Gender

2. Nationality

3. Experience

4. Project management position

5. Job title

6. Gender

The first characteristic is gender and it is reflected in figure 1 below; The male participants in the study were 12 (86%) males while females were 2 (14%), which mean that number of Mal in IT department more than Women. As shows in figure 3.1
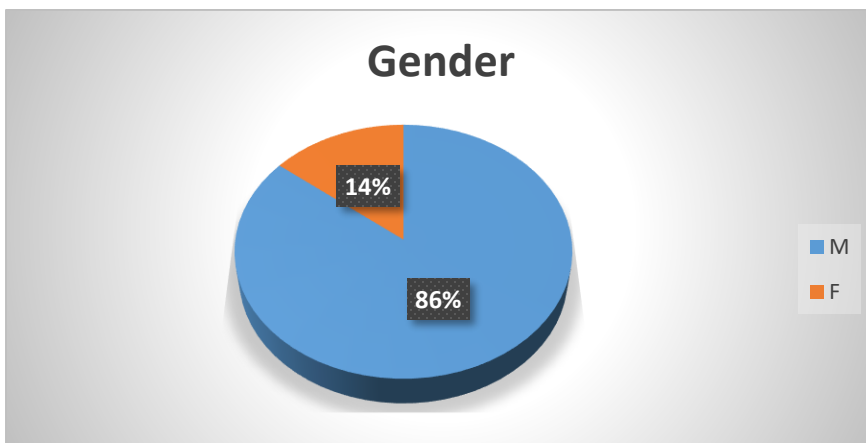
Figure 3.1: Gender

In terms of nationality of the sample characteristics, 5 (29%) were non-UAE nationals while 10 (71%) were UAE nationals. These facts are represented below. In Government sector local are more than non-UAE national. As shows in figure 3.2
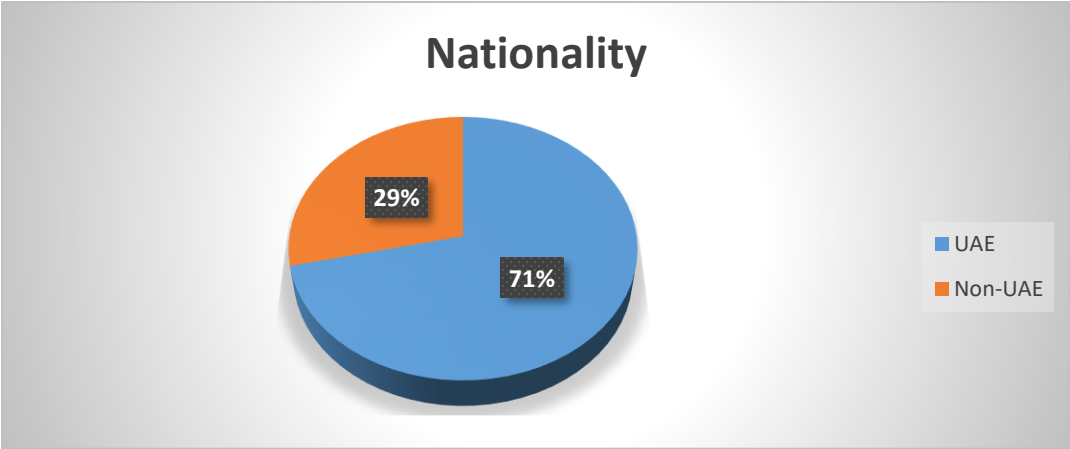
Figure 3.2: Nationality

In regard to work experience, 1 (7%) employee has been working for 5 years. other 11 (79%) participants have experience between (6-9) years, and 2 (14%) had above 10 years of work experience. Chart is shows different years of experience are located in same company in diffident government. As show in Figure 3.3
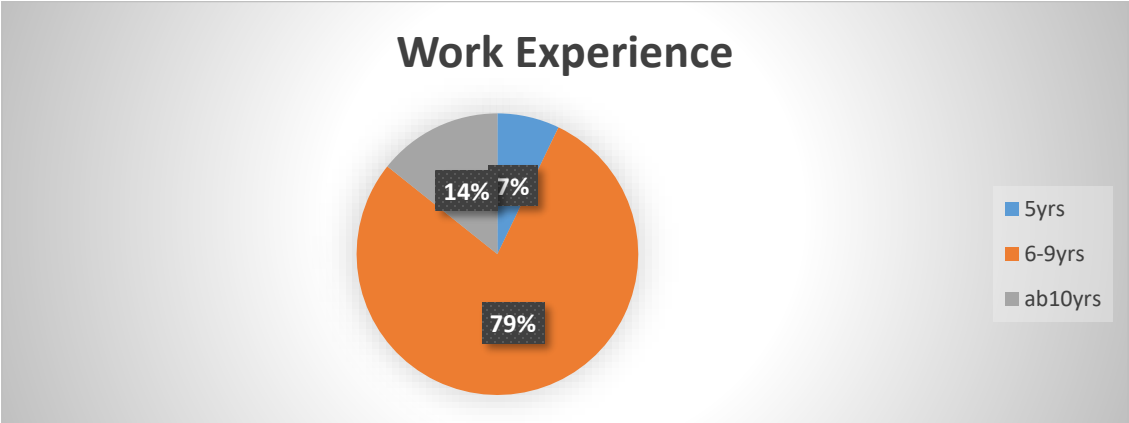
Figure 3.3: Work experience

More so, data was collected in regard to the experience in project management position, one have position of Project Management Manager in (PMO) and other 13 managers have worked on Information Technology (IT) project as Project managers. With the lack of PMO, they have to handle Information Technology (IT) project for the companies they work for. As shows in Figure 3.4.
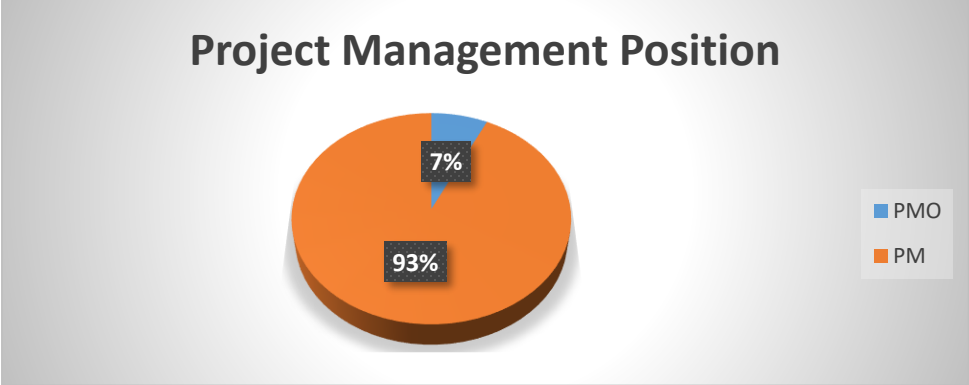
Figure 3.4: Project management position

There were different job Title been covered, Managers of Security Unit 2, 2 Head of IT Department, Head of Network & security 2, IT Support Managers 4, Web Application Manager 2, and Channel and Application Manager 2 and one Project Manager, as shows in figure 3.5.
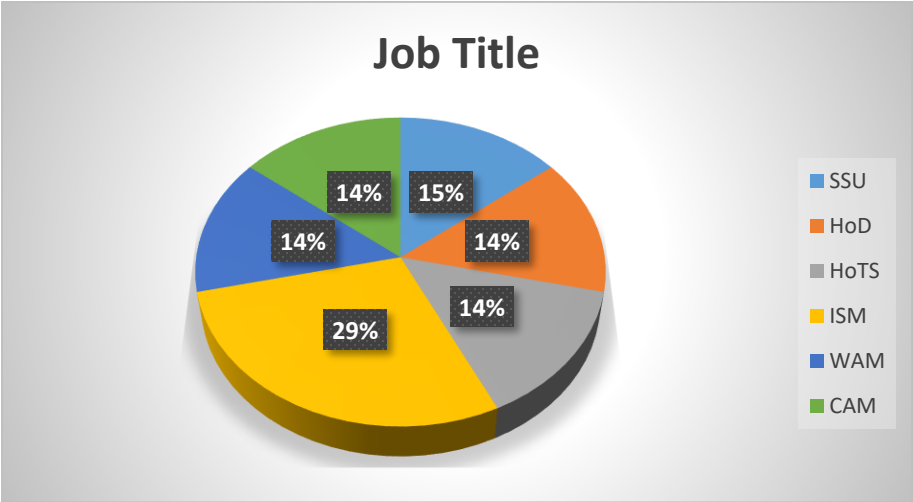
Figure 3.5: Job title

3.4 Conclusion

The research approach and design applied in the course of the study proved to be useful in selecting the data collection methods. In turn, these methods helped obtain vital information and input from the selected participants. The sample used also proved to be adequate, because it gives an in depth understanding of how Information Technology (IT) project are developed and implemented in the government sector6. Overall, the research study was conducted efficiently, ensuring the integrity of the process to demonstrate the true reflection of the research topic in the real environment.

CHAPTER 4: DATA ANALYSIS

4.1 Introduction

In this section of the research paper, the main aim will be to analyze the information obtained through a series of interviews with 15 IT project representatives from the government sector. Through the analysis, the researcher will be able to assess the common themes encountered in IT software project failures in Dubai government sector based on the perspectives of the 15 interviewed participants. This type of analysis follows a thematic approach, which is common in qualitative research (Nowell, Norris, White, & Moules, 2017). This analysis will be useful for presenting a connection between the causes of Information Technology (IT) project failures identified in the sources of literature and different perspectives of the participants.

The analysis of interviews was initiated by first categorizing the data with the intention of discovering the patterns and concepts that are related to the number of areas including those of failure measurement. The final part of the analysis entails discussion about the impact of the sample characteristics on project failure.

4.2 Definition of Information Technology (IT) project failure

The participants defined Information Technology (IT) failure based on their experience and project complexity. All 14 interviewed participants who were interviewed work in the IT departments of the government and they stated that Information Technology (IT) project failure was a common occurrence in the UAE government. In most cases, the failure occurred a few or several times. This is indicative of the fact that experience of Information Technology (IT) project failure in the Dubai government required an understanding of what IT failure truly is (Andersson & Chapman,

2017). The different perspectives that were provided by participants allow for the development of the definition of Information Technology (IT) project failure based on their experience of what project failure is**.**

Theme 1: Definition of IT project failure

All the participants agreed that the first factor of Information Technology (IT) failure is the inability to meet the delivery dates of the project. In regard to this, the participants indicated that the delays in project timeframe is the first sign of Information Technology (IT) project failure. For instance, Company B participant defined Information Technology (IT) project failure as the inability to meet the project objectives and outcomes. However, the participants from Company A, C and D did not use term 'failure' in their explanation, but they stated that the project does not go beyond phase two. The meaning here is that the project failed to meet most of the objectives only the participants labelled it differently. The definitions are as indicated in table 4.1 below;

Table 4.1: Definition of IT project failure

Companies	Definition
Company B	IT project fail due to delay to reach in timeframe.
Company A	We don't use definition of IT project failure, the correct word is Project delay, because it is delivered on time but the stakeholder has poor knowledge on project management plan and scope, which leads to project delay to stop to phase 2.
Company C	There is no IT Project failure, there is IT project retirement. We keep using the system that has been delivered via the project even if it does not meet stakeholder perspective and needs 100% until the due date of the system based on the agreed project plan.
Company D	IT Project in progress to phase 2 because the project meets the agreed time and scope of project plan sheet. However, because of the additional requests, the project has to stop temporarily to be recalculate again the cost, time, and resources that need to be fixed for phase 2.

4.3 Factors of IT software project failure

There were many factors that were mentioned by participants and they have been grouped into three main categories. The main reason for failure based on the respondents was poor project management practice despite having the experience on running project:

Theme 2: Poor project management

Project management means the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements (Project Management Institute, 2017). The Project Management Institute (2017) further reveals that based on the Project Management Body of Knowledge (PMBOK), project management has 5 process that include initiating, planning, executing, monitoring and controlling, and closing. More so, project management has 10 project management areas that include Integration Management Knowledge Area, Scope Management Knowledge Area, Schedule Management Knowledge Area, Cost Management Knowledge Area, Quality Management Knowledge Area, Resource Management Knowledge Area, Communications Management Knowledge Area, Risk Management Knowledge Area and Procurement Management Knowledge Area and Stakeholder Management Knowledge Area (Project Management Institute, 2017). The knowledge area has tasks that hold the overall project together and plays an instrumental role in integrating it. Most of the interview responses in regard to challenges that they face pertained to knowledge areas that lead to failure of IT project. The key knowledge area that they mentioned include scope, planning, cost, and time. Nevertheless, from the perspective of the researcher, it is because of the lack of knowledge that leads to failure of Information Technology (IT) projects as much as it is not mentioned above.

When researcher asked the reasons for Information Technology (IT) failure, there were different answers according to the project type and complexity. For example, participants from Company

A and D mentioned that the most common cause of IT software project failure was the poor project management. What they meant by poor project management is the lack of experience in running the project and lack of IT skills in understanding the new technologies. On the other hand, Company B participant stated that not following the project management office (PMO) guide leads to poor planning and implementation of the project and the stakeholder will not have clear understanding for the project plan which can lead Information Technology (IT) project failure as explicated in the literature review chapter by Al-Hajj and Zraunig (2018).

The same challenge was mentioned by **Company C** participant who revealed that poor planning and implementation are the reasons of project failure.

Theme 3: Scope

For the Company B participant who has a have Project Management Office (PMO) mentioned that IT project is initiated by higher management in the company where they are required to provide the main objective and state the expected project outcomes. This information is vital because it will help the project manager prepare the right scope which will lead to meet the expectation and outcome of the project. However, poor communication and understanding of project scope is one of the reasons of Information Technology (IT) project failure. All participants mentioned that the scope of IT projects has a strong impact on the time, cost, resources, as changing in scope in implementation phase impact the delivery dates and cost. Below are some examples from the participants from each company;

Company A initiated a HR system project that should be delivered within 4 months. The project was about a system where employees could post their suggestions, recommendations, and complain about the company with the view of increasing employee happiness and satisfaction. The project was run as per plan, scope, time and cost that agreed with HR stakeholder. During the

testing phase of the system, the HR director requested for addition functions to the scope. The HR director then went ahead to link this system to employee appraisal system. This led to the stoppage of the project and the re-evaluation of the additional time that was required to fulfil all new changes and the integration with appraisal system. This created an issue for IT project manager who was working on the project as he had a plan to complete this project and start the other project. To sum up, changing in the scope has a big impact on the project delivery and the other project that project manager promises to deliver for stakeholders.

In tandem with this discussion, the research has come to the understanding of the definitions of Information Technology (IT) project failure as given above in the ***Definition of IT project failure.*** Accordingly, the participants revealed that the project need to be enhanced onto phase two' because the changes in scope are considered as failure by project stakeholders. As per the perspectives of the IT personnel, they have followed the scope of the project and complete on time, but the changes in scope affect the success of the project (Alami, 2016).

Accordingly, other companies have defined the similar issue of scope changes during the phase of project lifecycle, as a factor having a negative impact on project management scope, time, cost, and plan in delivering the project on time with quality of 99%. Stakeholders have made some changes on scope and planning, which leads to the delivery of the project with less quality to about only 55% and high cost to support the project, and used it until it completes the two years as agreed in project plan. They call this type of project failure as 'project retired 'as researched has mention in above section (***Definition of IT project failure).***

Theme 4: Lack of resources/high cost

According to the participant of the Company A, the lack of resources is a major cause of failure in the UAE IT sector. When the researcher asked the participant what they thought to be the cause of failure in the government Information Technology (IT) project, the participant specifically mentioned that the "lack of resources is the main reason in terms of time and funds". The experience is from the head of the Network and Security Unit he shared his personal experience in this area. He stated that he has to implement new security software (antivirus) project. As an action, he needs to replace all workstation pc in the company with new Anti-Virus software (AV). The participant has assigned this project to fresh graduated employees with a bachelor's degree as a Network and Security Engineer with zero working experience in security application. The participant has learned how the lack of resources/high cost impact on Information Technology (IT) project. Specifically, he said that obtaining internal and external resources has a very high cost, because when the company has poor internal resources with a high level of certificate degree it can lead to delay submitting the project on time.

Moreover, the poor internal resources lead to high expenditures to support the internal employees to obtain new acknowledge about the application. Moreover, poor acknowledge can create gap in communication between internal and external resources, which can lead to the delivery of unclear scope and plan hence leading to project delay. Additionally, security can be considered high risk especially if there is a virus or hacking attack on the organization's environment. This may need quick action to stop and recover this incident as soon as possible. Again, the company cannot depend on its internal resources because of the lack experience and the length of time taken for the issue to resolved. The participant has also cited the benefit, which can be considered in future is to have an internal expert who has a better understanding of his/her own environment and has the

capacity to deal with different incidents in future and has a good control of the security of the project because all security items are linked to each other.

In the same breath, based on the findings from Company A and Company C, the other participants of same Managerial position in IT Support noted that they have experience on the same issue of project failure because of poor internal resources. This is because their job is more focused on providing internal support for employees within their companies. Thus, both participants focus on selecting full experiences resource to cut a cost of depending on external support and reduce amount of money which may be spent on training the internal resources because one expert can assist another team member to lean.

For Company B, the participant has position on Network Manager and in company D the participant on position of Application Web Security Manager in IT department. Both of these participants pointed out that poor resources is a main factor, which leads to delay in the project success and can have a negative impact on company end users. This could also lead to an increase in the cost on external resources to provide high quality of support any time they want. Both participants have experience on same application of security called 'Blue Coat' Systems that provides services designed for cybersecurity and network management (proxy getaway). Both of them have depended on the resource agreement renewed yearly, and if support has poor knowledge and lack of support experience it we lead to a significant impact on the project timeline although a huge amount of money and time has to be used to have successful project (Al-Hajj & Zraunig, 2018).

Theme 5: Poor planning

Planning is very important to project management. In the course of planning, it is important to ensure all stakeholders and other impacting groups are involved in the project. This is vital in

assisting the project in estimating the weight of budget needed in project. Accordingly, planning is considered as 70% of all project management. The companies, which were interviewed have bad experience in the planning phase.

For Company C, Tow participants in position of Head of Channel and Web Application Unit shared their experience on poor planning of their project. The participants have created their own planning, cost and time line for implementing a new website for the company C. Moreover, in the plan, they involved stakeholders and the support team, as a key aspect to complete the project. During the implementation, the Vendor is asked to open some port for testing the website before it goes live, which required security team approval. The Security team is not involved in project plan and this does not lead to the stoppage of the project at this phase because the Security Team has its own policy which should be applied on any software or system in company. The researcher come to know that as Company C did not have clear PM process that could support the project manager to follow the correct PM planning and avoid these mistakes. This is what is called poor communication plan. This is as mentioned in the literature review by Mungatu and Mulyungi (2017).

Company D has a different experience in poor complex project plan. In this company 3 IT Managers have the same impact regarding poor planning. Therefore, the three of them were involved in same project. The project is complex because it involves IT department, Business Department, Finance and other departments in the organization. The issue was that scope of that project was not studied well by all stakeholders. In the implementation phase, the team to complete the project has to be clear on what is needed to complete the project to avoid delays.

In company A, there has been poor allocation of resources in the plan where two Mangere in IT department has similar experience in same company. The project Managers make their own plan

depending on their experience in project management. However, they fail on the allocation of internal resources to assist them complete the project. During the testing phase of the project, the vendor asked the IT Manager to test the new system by stakeholder and IT support team to make sure it works well. Unfortunately, both teams are not aware about this project and the internal resources of each team was busy in other projects to deliver. The project has been stopped in this phase because of poor planning have impact the scope a time line or project.

Theme 6: Organization's culture

The understanding of culture in a company is vital in helping to avoid disputes among parties involved in the project (Saad, 2009). For instance, the Company C participant as a head of IT department for 15 years has had sheer experience in handling Information Technology (IT) project in various government sectors. When the researcher asked about the factor that leads to Information Technology (IT) project failure, the participant mentioned that culture has strong impact in decision making in Information Technology (IT) project, which can be reason of project failure. For example, he stated that the company wants to implement new security (SIEM) software to convert all detailed information about the devices (computer, server, printer, scanner, and laptops IP address and logs) in our company into one dashboard. This was a big Information Technology (IT) project for the company and all branches and their stakeholders were involved in this project. The IT CEO of Company C had clear knowledge on how this project would add value to our company and supported the security field in our company. The respondent continued that in their company, they have used approaches to select their vendor as IT department. IT Department Managers and I started sending announcements to all our venders to check out the suitable vendor for this project. Based on our working experience with particular vendor, we have asked them for 'request for purpose (RFP)' which gives the vendors the opportunity to provide all details of

projects such as the time of starting and completing the project, ability of handling projects, support team and other details, which will assist us to select that particular vendor. Moreover, we did site visits to other companies that have already using same software with same supported vendor. Therefore, to find out the feedback of stakeholders on the software and Vendor supported team and the process we use to select our vendors, we provided all required documentation and feedback of selected Vendors to IT CEO office as per policy and regulation. Unfortunately, we were surprised that vendor had been selected by higher management without involving us in decision making. The vendor company which been selected has a weak reputation in the market and cannot support us in this big project. The vendor was selected based on friendship and trust of the higher management. Thus, we accepted the challenge and started to work on the project. The project took longer to submit and because of poor resources, there were changes on budget and cost of project plan because the selected company did not have a team to complete all the project phases. Thus, we had to provide them with another Company X to support them in project, which led to excess expenses because of over-budgeting to complete the project. As a result, the project has been delivered with very low quality and did not meet the goal and expectation although the software has modern tools, important features, and critical data can be pulled out of our environment easily. However, because of the impact of culture on IT projects, we ended up with a project characterized with poor resources and low quality at a high cost. The software has may issues and critical incidents, which took a long time to solve with unprofessional team that makes it challenging to use the software. At the moment, we are looking for other updated software from other vendor companies to support us meet our requirements and goals to enhance the security level in our company. The participant ended up saying that hope they are given the chance to select the team to work with. The researcher came to understand that project management office (PMO) is very

important even if you have more experience in handling project. Having more experience in project management office (PMO) can support your personal knowledge to be implemented in correct phases of projects because project management office (PMO) is the core solution of the project management in any organization as indicated by (Project Management Institute, 2018) in the literature review chapter.

In company A, and D, there is the experience of the impact of culture on the project process and the companies have similar stories. There companies have employees of different nationalities. Specifically, in Company A, the IT Manager of the Window's Unit has the task of updating new patches of Microsoft windows for all personal computers and laptops. The participant did not study the stakeholder's national and traditional annual leaves of the year. He assigned the milestones of each phase of project as per the agreement with vendors and did not involve the stakeholders because he believed they would not be affected by this IT project because their main role is restarting the pcs only after updating done. After completing the project to last stage, the stakeholder reviews had to restart because some of them were on annual leave for the national day and they connected remotely do their work there. Others have traditional annual leave and did not approve the request of restart their pcs. However, in line with the literature, Saad (2009) emphasizes the need to recognize such cultural views to avoid misunderstandings.

In the case of Company D, due to diffident nationalities of employees, they have different beliefs and behaviors in dealing with issues they face in company. The participant said that employee categorizes themselves in groups based on nationality to support each in cases of IT incidents. However, they also group themselves with the view of proving that their Nationality is the best in IT industry. By doing so, they will allow the higher management the opportunity to trust them and sign them only for the IT projects. Moreover, they will never share their experiences with other

nationalities to only have themselves acknowledged. The researchers have this point in the literature review chapter as explicated by PricewaterhouseCoopers AG (2017)

Company B has a similar experience as company D, but it applies the project management office (PMO) and the problem been solved, the participant said. The project management office (PMO) has applied a process that avoids such mistakes to happen in future by controlling employees from different nationalities (Al-Hajj & Sayers, 2014). The researcher came to know that culture of different nationalities is a key factor of Information Technology (IT) project failure based on the explication by Faraji & Abdolvand (2016). All the companies A, B, C, D which were selected have been faced by different factors in IT projects, but from different angles. The participants had different answers from each other based on their years of experience in handling IT projects, age, PMP Certificate, which shows there understanding the factor of Information Technology (IT) project failure

4.4 What is the lesson to learn from these project failures?

Apart from identifying the causes of Information Technology (IT) project failures, the participants were interviewed about the lessons they have learned from various failures they experienced. They revolved around learning about the critical factors to consider them in the future to avoid failures in the UAE. Common lessons learned by the participants were the importance of applying good management practices throughout the entire life cycle of the IT software project. This response fully supports research by Cunha, Moura, and Vasconcellos (2016) who value efficient management practices such as collective decision-making approaches due to the complex nature of IT software projects. All participant has given different answer and feedback as per there experience in IT Project Management.

In company A all participant: has clearly said that higher Management Should have stander process and plan which should be apply on all stakeholder in IT and Business department projects. by apply professional approach. the company will be able to control the IT project and have stander process to be follow by all stakeholder. In this way the company will safe time, cost plan and will deliver a high-quality service on time.

They said, participant one: "I learn that without study the plan and scope well can prevent IT project to be deliver on time' 'the high management should have clear awareness about Information Technology (IT) project factor specially resources should be selected carefully by particular assessment or procurers to avoid spend high cost in internal resources. Below table shows company A details:

Table 4.2: Company A

	Position	Experience in IT project	PM Certificate
	Channel and application Manager	8	No
Company	Network &Security Manager	10	No
A	IT support Manager	10	No

The researcher come to know that experience in IT projects its helpful to find out the cause of the Information Technology (IT) project failure, but it does the participant did not mention the core element which is Project Management Office (PMO) that was not in their environment. Plan, cost, time and quality the process of Project Management and can help IT project to solve these issues. Unfortunately, none of the participants have claimed that they need Project Management Office (PMO) because they believe their experience can give better solution to solve Information Technology (IT) failures.

In regard to Company B, the participant has a better answer than other companies. Participant one who is a Project Manager of Project Management Office (PMO), said that the stakeholders should have better understanding of Project Management Office (PMO) because it will support all the IT and business project, as it is a core tool for all the project. Participant two noted that since they have a Project Management Office (PMO) they are controlling their IT projects from suffering failure. However, different culture has an impact on project lifecycle, so stake holder should have better understanding of project goal and work as one team to avoid delay Information Technology (IT). Below table shows company B details:

Table 4.3: Company B

	Position	Experience in IT project	PM Certificate
Company B	Project Manager of PMO	5	Yes
	IT-support	6	No
	Network administrator	5	No

The researcher come to know that this company have good awareness on project management office (PMO) although they have less experience in handling project. although the have better understanding in the factor of Information Technology (IT) failure because they have experience in PM. Participant one: have Certificate by PM and other participant have taken training courses in PM.

The participant in company C the mean issue is Higher managements control. When researcher asked about lesson to learn, the participant have mentions that higher management should have strong impact on process of Information Technology (IT) because it will control scope, cost and time. moreover, force the stakeholders with different nationality to follow it because it will solve issues of culture impact on Information Technology (IT) due to miscommunication. all issues

should be cover and study by the particular office without mention department name as lesson to learn therefore avoid other team to point to each other as less knowledge's team. below Table 4.4 shows company C details:

Table 4.4: Company C

	Position	Experience in IT project	PM Certificate
Company C	Head of Channel Unit	10	Yes
	Web Application Unit	9	No
	IT Support	10	No

The researcher come to know that Company C has an experience of more than 9 years in IT project and it has members from different nationalities. The company feels that different nationalities have created poor communication between them, and affected the IT project to be completed successfully, which is true. However, the participant did not mention the PM process which can cover all their needs and the issue to be solved. Due to their less experience in PM, I still do not feel that PM can solve their problems because they did not mention that they project management office (PMO) in their company and Project Management Institute (2018) explains in literature that it is important.

For the case of Company D, When the researcher asked same question, the participants had the same answer because they have been worked together in most projects. They have issues in poor management and culture and other issues, which lead to project delay. They believe that by applying a particular process in IT project process can solve all these issue, and higher management should be involved in all processes to have clear awareness about the causes of Information Technology (IT) failure. table below show participant of company D:

Table 4.5: Company D

	Position	Experience in IT project	PM Certificate
Company D	Head of Channel Unit	9	Yes
	Web Application Unit	8	No
	IT Administrator	8	No

4.5 How to overcome the failure in IT projects?

The researcher came to know from the participants that the main issue is that Project Management Office (PMO) does not exist in the company. The participants have experience in project management, but they still experience problems because of the unavailability of Project Management Office (PMO) on the companies. The process that they are looking for is PM, which will assist them to solve they one problem as they did not mention this in the interview as noted in literature by Project Management Institute (2018).

At the end of the interview process, the participants were able to recommend measures that would help in overcoming the prevalent failures of IT software projects in Dubai government sector. Based on the information provided, the most common ways through which IT software project failures could be overcome include the formulation of project plans, the application of the effective project management practices, proper budget management, and application of quality control measures.

The diverse nature of the methods provides multiple solutions to the issue of the project failure, which is a reflection of the fact that different combinations of factors might lead IT projects to fail in Dubai government sector. According to Company B participant, male IT Director with a PM

certificate, failure can be overcome by proper planning before the implementation of the project "to anticipate risks and challenges." The PM certificate is an indication that possessing knowledge of good PM practices when implementing Information Technology (IT) is essential in ensuring the project succeeds, failure can be overcome by making sure the stakeholders have an understanding of the scope of the project and proper planning before the implementation of the project "to anticipate risks and challenges."

Similarly, Company C participant said that proper planning is essential because "it will ensure that we plan for the resources we need from the start of the project to the end." This response highly supports the views by Taherdoost and Keshavarzsaleh (2016). The researchers indicated that by planning appropriately, the project teams will be able to compose the desirable objectives, their resource needs, and be able to plan for any challenges in order to overcome them and ensure the success of the project.

On the other hand, Company D's solution was to "have a competent and skilled project manager who will apply good management practices." This solution supports the research by Mossalam and Arafa (2016), who believe that the practices applied by a competent and skilled project manager will help ensure that the IT project fulfills its intended objectives while realizing the planned benefits it was supposed to deliver.

In view of the responses given by 95% of participants in regards to using the effective management practices as a way to overcome failure, it is supported by the research by Harwardt (2016) who believes that **poor leadership** shown by an inexperienced project manager is one of the major causes of failure. An experienced manager, on the contrary, will be able to successfully apply the efficient practices and ensure that the Information Technology (IT) does not fail. In this case, the

participants have seemingly placed a lot of importance on the role of the project manager not only as the leader but also as the key success factor. Sharing this perspective, Company A participant says, "We will need a skilled and experienced project manager who will apply good practices to ensure that IT doesn't fail us or people in general".

Company A is able to make this conclusion mainly because of the many years of experience he has in dealing with Information Technology (IT) as well as the fact that he has a PM certificate hence is able to acknowledge the role of a PM office in ensuring project success. The role of the PM is evidently vital in ensuring IT projects are implemented successfully based on the responses given by the IT director and the managers. The responses are demonstrated below in Table 4.6 .

Table 4.6: Recommended strategies

Participant	Gender	Job Position	PM Certificate	Years of experience in PM and IT projects	Strategies
A	Male	IT director	Yes	Both	Proper planning, have a PM office
B	Male	Manager	No	IT projects only	PM is critical
C	Female	Manager	No	Both	Proper Planning
D	Male	IT Manager	Yes	Both	Have a PM

CHAPTER 5: FINDINGS & Conclusion

The interview has come up with many interesting points about the factor of Information Technology (IT) failures and established project management measurements. Through the interview, the researcher found that not all companies had a Project Management Office (PMO) except one. The absence of Project Management Office (PMO) can lead to loss on time, cost and quality of service or system, which are the core measurement tools of PM to measure the success and failure of any project.

The participants in the government sector has lack of acknowledgement in project management especially for IT projects. Most projects in the government sector did not meet the timeline, cost, quality they require and did not have a proper plan, which is considered as a project failure in Project Management Book (PMOK).

The interviewees in each sector have described Information Technology (IT) project failures differently, in terms of projects retired, projects completed in phase two and uncompleted projects. This means that they don't accept failure in projects as Project Managers, because according to them the project is a success as they followed the plan, regardless of any changes that occurred like extension of time and cost. Since the project was carried out and delivered until the last phase, they consider it a success even with low quality and high cost. The government sector should have a better understanding of Project Management (PM) role and how it will increase the efficiency of IT projects.

The researcher has gathered that those handling the IT projects run it based on their experience and personal practices without any proper process to follow or appropriate knowledge in handling projects. Also, the participants didn't have PMP Certificate, which resulted in lack of knowledge on how to make IT projects run on particular process and approach to reach a success, thereby necessitating the research on project failure.

According to the researcher's analysis, all organizations share the same failure stories, like:

1. Delays in the project timeline because all stakeholders have not been involved with the assumption that it will not affect their project lifecycle.

2. The absence of a Project Management Office (PMO) that provides access to the plan, time, cost, quality, scope and culture factors, which affect the completion of the IT project.

3. Insufficient knowledge on Project Management and the necessary steps involved.

The above-mentioned issues are a result of the absence of Project Management in the government sector and absolute lack of knowledge about the role of Project Management Office in effectively organizing the lifecycle of Information Technology (IT) projects. If not considered earlier, this will lead to more losses in time, cost and effort, taking the rate of failures even higher in the future and affecting the UAE's economy with high IT budgets.

As announced by the President of the UAE, His Highness Shaikh Khalifa bin Zayed Al Nahyan, the country will adopt the Science, Technology and Innovation Higher Policy with 100 national initiatives in the sectors of education, health, energy, transportation, space and water. (2015, November 22). With an estimated investment of over Dh300 billion, the national plan includes new policies in investment, technology, legislation, education and finance, aiming to build a diverse knowledge-based economy in the UAE. (2015, November 22)

His Highness, Shaikh Khalifa stated that the UAE is making all efforts at establishing a secure future for the coming generations unaffected by the fluctuating energy prices and markets. He further added that the UAE is investing in the development of its people in science, innovation and advanced technology for the post-oil world because he believes that only through this the country can create sustainable wealth for the future generations.(2015, November 22). The adoption of the Science, Technology and Innovation Higher Policy is a defining point in the development of the UAE, both economically and socially.

According to the organizers of Hitec Dubai 2018, Dubai has attracted foreign direct investments worth $21.66 billion in just three years for high-end technology transfers, emerging as the top global destination for FDI in artificial intelligence and robotics. (2019, January 01). Also $100 million innovators' programmers are being rolled out by the Dubai Expo 2020. (2019, January 01). Moreover, they did not have any analysis report or documentation to measure the success or failure of IT projects after delivery, which will assist them in finding the gaps that lead to project failures. These companies also did not have any database record on the projects, which will help them learn from past projects. To the researcher's question of whether they have a record of their projects in the system, the common answer was negative. This can lead to continuous failures in projects because they don't have any database to learn from.

The culture of the organization also impacts the project lifecycle. The manager and department use their personal relationships in the business as they are not qualified to support the project and this leads to failure. The supported companies (vendor) play an important role in project success and failure. All the points mentioned above are related to the culture of the government sector, which impacts Project Management and Failure of IT Projects.

The response to this research question was mainly provided from the perspective of the participants through the interview question responses. Different participants gave unique responses in regard to the lessons they learned from the experienced project failures. The lessons were related to specific questions. For instance, a participant who cited poor project management as the cause of IT software project failures learned a lesson connected to the relevance of the effective project management. In the same way, a respondent who identified the lack of resources as the main cause of IT software project failures learned a lesson in relation to the need to properly manage or allocate resources to avoid any shortage that would ultimately result in IT software project failure. The limitation based on these responses is that the lessons are connected to specific causes of IT software project failures and ignore other lessons that could be important in facilitating the success of the projects.

5.1 Limitations and Future Research Direction

In this section I have covered limitation and recommendation of this dissertation.

5.1.2 Limitations

It is important to note that this study has some limitations that need to be taken into consideration while interpreting results. First, I used the qualitative research methodology that makes it difficult to maintain, assess, and demonstrate accuracy. It is worth noting that the inability to maintain and assess the rigor could impact the quality of the findings of the study.

Second, the study is limited by the fact that only government organizations were considered. It would have been good to also have private sector organizations because they would have provided a tool for comparison. More so, the emerging public-private sector operations means that the inclusion of private organizations would have been important.

5.1.2 Recommendations

The recommendations are developed for both the organizations and future research direction. For the organizations, the recommendations are as follows;

- Currently, no IT project management practices are documented although the projects are completed. It is recommended that IT organizations in the Dubai government sector document all the completed and incomplete IT projects. The advantage of documentation is that it sets the ground for accountability as well as the tracking process in regard to the IT projects that have been put in place.

- Additionally, most organizations do not have IT project management office (PMO) with databases where employees can learn from. Thus, it is recommended that government sector organizations put in place project management office (PMO) offices to enable their employees to learn. The advantage of the project management office (PMO) is that they enable employees learn about the standard and processes of project management hence understanding the best ways to complete projects.

- The UAE government should have policies and regulations for IT projects that will determine the failure and success of the projects and give more control over budgets and service quality. It will also serve as a learning lesson on how to reduce the percentage of Information Technology (IT) failures in the Dubai government sector.

- Currently, no government organization collects all the IT project information in the UAE. It is recommended that all organizations have a database for the collection of such data. The advantage is that the data will enable them plan in terms of IT project completion.

Overall, future research should focus on the comparison of Information Technology (IT) success between public and private sector organizations in Dubai and the UAE in general. It is worth noting that there is a lot that public organizations could learn from private organizations and such research will provide the opportunity.

5.2 Conclusion

The UAE has shown a significant progress in the sphere of technology and innovations, which includes aspects of IT. However, the country has faced numerous failures in its IT software projects. There is no clear or concise definition of what IT project failure is. However, the separate individuals as well as researchers rely on the definition of what success is to determine why failure has occurred. The definition of project management is associated with the causes of project failure. In this respect, IT software project failure has been defined in terms of poor project management, budget overruns, delay in IT project timelines, poor quality software that malfunctions, the failure to achieve the set deliverables, as well as the lack of resources needed to adequately satisfy the product needs.

Project management has been identified as a critical factor in IT software projects. The effective project management skills are desirable in facilitating the success of IT projects in the Dubai government and in the UAE in general. The project management discipline has revealed the significance of the role of a project manager. Project managers may not be the sole reason for IT project failure yet their role is critical in facilitating or impeding the project's success. A project leader is important in planning, directing, as well as controlling the project, but all members of the team need to make considerable contributions in order to avoid IT project failure.

Overall, the initiatives can be taken to avert or at least reduce the chances of IT software projects in the UAE. They include imparting teams with good practices to facilitate the collective decision making in some aspects of the IT software projects. Leaders in the public sector also need to encourage team contributions instead of enabling the culture of a central decision-making approach in this modern and dynamic environment. Such initiatives will require the support and involvement of top management to not only instill confidence and morale in the employees but to also provide them with a method of monitoring and control, as well as support for adequate resource allocation to satisfy the project needs.

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Appendix

Interview Questions and Answers for participants

Interview Questions

1. Do you work in the IT sector of the Dubai government?

2. Have you experienced IT failures in the course of your work?

3. According to you, what is IT failure in the government sector?

4. What factors have led to IT software project failures in the UAE government sector?

5. What lessons can be learned from the IT software failures?

6. How can IT failures be overcome in the government sector?

7. Do you think the problem will be fully resolved in the future?