Impact of Business Manager Information Technology Competence on Information Technology Project Success with the Mediating Role of Team Coordination and Moderating Role of Organizational Policy

by

Kamal Ahmed

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First of all, I thank ALLAH Almighty who is the most merciful and beneficent. ALLAH created us and showed us a correct pathway. ALLAH always secretes sins and protects us from social troubles. I also dedicate my study to my Father and my Mother, my dearly loved parents.

CERTIFICATE OF APPROVAL

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Abstract

Current research on project based organizations (IT Industry) fails to explain in detail how IT projects can achieve greater success. This study explore the underlining circumstances that have been ascertained to contribute in improving IT project performance, the key indicator of success. The impact of IT competence on IT project success has been examined. Data was collected from IT project managers through questionnaires which are working in different software organization of Rawalpindi and Islamabad, moreover 250 valid responses were used for analysis which give accurate results as per our expectations. Result of study indicates that IT competence has a signicant and positive impact on IT project success. Project success rate is signicantly increased when the business manager have high IT competence. The mediating role of team coordination was established for IT competence and IT project success. Organizational policy tested as moderator has shown in-signicant impact on the relationship among IT competence and IT project success. This study has signicantly contributes in the area of research specically in the domain of software project management under project management. The study also provides signicant implications for academicians and practitioners.

Keywords: IT Competence, Team Coordination, Organizational Policy, IT Project Success.

Contents

List of Figures

List of Tables

Abbreviations

IT	Information Technology
IS	Information system
ITC	Information Technology Competence
TC	Team Coordination
OP	Organizational policy
ITPS	Information Technology Project Success
PMM	Project Management Methodology
RBV	Resource Based View Theory
CEO	Chief Executive Officers
CIO	Chief Information Officers
GSD	Global Software Development
CSR	Corporate Social Responsibility
VRIO	Valuable, Rare, Imitable, Organized

Chapter 1

Introduction

1.1 Background of the Study

Project management is an application of tools and techniques to complete a unique complex task by using different resources within time, cost and quality constraints (Williams & E.Jackson, 2015). In the last few years, interest in project management has grown significantly. Practitioners and academics have shown great interest in this field. Project management is a solution to problems with a limited schedule, limited cost and unique performance (Briere, 2015). In modern organizations, project management has become the most important practice to meet the desired level of outcome in multiple projects (K.Yaghootkar & N.Gil, 2012). Similarly project outcome has become extremely important to project managers, first line managers, end users and the stakeholders who are involved in a project directly or indirectly (F.Costantino, Gravio, & Nonino, 2015). More specially, IT competence of the business manager contains IT skills, IT knowledge and managerial business skills (Perez-Arostegui, 2015). These skill can be enhanced by working and managing IT projects and with the experience in the market. The IT competence of organization can be the basis for top managements IT knowledge and experience because the IT manager of the firm is the major top-level IT innovation leader (Dahlberg, Hokkanen, & Newman, 2016). IT competence has an influence on challenging movements (Lewis, Agarwal, & Sambamurthy, 2013).

In fact to introduce new product, firms must have competent IT worker in major roles.

IT competence refers to the organizations employees knowledge related to IT resources and capabilities. IT Competence of business manager enables organizations to manage product and services by containing IT skills and knowledge in their efforts to introduce new products in the market (Fernandez-Mesa, Ferreras-Mendez, Alegre, & Chiva, 2014). In any organization the IT competence of the top management is very important as they have to make the decision regarding implementation of project and product. The involvement of senior executives in strategic decision making is positively influenced by its team members IT competence (Jaocha, 2014). However, although top level senior executives play strategic roles, sometimes the board ignores IT workers and IT-related issues (Yayla & Hu, 2014).

In project management, project success is one of the most important factor, but the significance of project success changes mostly (Joslin & Muller, 2015). Time, cost and quality are the internal efficiency and project constraints of the project management methodology (PMM), which is aimed to increase project efficiency and probabilities of project success (Kim, Eisenberger, & K.Baik, 2016). The criteria of project success has been calculated in multiple ways. While the exact estimation of project success is determined on evidence such as the final output, the present view means that where we are at the run time eventually, project achievements can be better judged by the stakeholders, especially the key sponsors (Turner & Zolin, 2012). As F.Costantino, Gravio, and Nonino (2015) said that success is time-bound as time moves, it doesnt matter whether the project has met its resource limitations or not. In most situations it goes completely irrelevant after six to eight months. The success criteria of projects can contribute hugely towards the project success, for any product to be successful. It should manage the triple Constraint (Time, Cost and Scope). In Europe this formula is implemented in the IT industry but in Pakistan there is a still gap between the IT professionals and the project managers as the project managers lack the knowledge of IT development

that lead them to a poor coordination during project implementation and in result of poor coordination the project fails.

Project management activities are executed in a way to build an exclusive product, service, or result and meet firms strategic and effective goals (Javad, Ireland, & Gorod, 2016). Organizational policy involves organization culture, structures and processes that are necessary to make sure that the firms IT systems align with the firms strategies and goals (Ekrot, 2016). IT policy could be categorized into four dimensions (Burke, Nam, & Pardo, 2012). These four measurements are IT policy setting, useful delivery, risk management, and performance dimension which play a vital role in the project accomplishment and without high IT competence the business manager has a negative impact on project success.

In IT competence, organizational policy plays a vital role in managing IT competence of the IT projects in Pakistan which increase the project success rate. Since 1994, the Standish group has researched IT projects execution implementing in many firm dimensions ranging from small to large firms and printed the chaos reports annually. The 1995 chaos Report stated that only 16.2% of the software projects were narrated completely on-time and on-budget. After twenty years, the Standish group printed the 2015 chaos report which stated that 29% of IT projects around the world were positively influenced as define by on-time, on-budget with the acceptable outcomes. This is a big problem for Pakistan, the number game is even bigger than the rest of the world. So it is important for the project manager of the IT industry to have a IT knowledge that will help them in decision making process and in that process organizational policy plays an important role in showing a positive impact of IT competence on project success in which organizational policy act as a moderator (Kim, Eisenberger, & K.Baik, 2016).

Team coordination of employees working in an IT industry is an important aspect of teamwork. The top management and the IT developer of the organization have to coordinate while, performing the task in the developmental phase. If they lack the team coordination from the start of the planning phase then all of their work goes waste and the project simply move towards the failure in the sense of cost over-run, scope creep and time overload. In these particular situations, the existence

of the sequence and timing of interdependent tasks is of high importance for such team coordination (O.Varela & E.Mead, 2018). Therefore team coordination make the IT project successful, SOPs are designed to support workers to store and process information correctly and in the right order (AnhNguyen-Duc, S.Cruzes, & Conradi, 2015). Side-by-side work take place during project execution which means that team members are allowed to share a work area and a visual context or work space (Pettersen, Buvik, & Rolfsen, 2015). A spatially dispersed teamwork is characterized by the exclusion of side-by-side work, the question arises that what are the critical elements of a shared visual space for temporal coordination in dispersed teams. One critical element that must be kept in mind during the execution of the project is the awareness of the task phase which means the task phase in which you are working during the execution of the project which is in a collaboration to an end goal, which can be supported by shared visual information (Yim, Castaneda, Doolen, Tumer, & Malak, 2015).

Team coordination in design integrate workers with unique competencies, backgrounds, and knowledge to achieve difficult and frequently innovative results in the type of product or services (Dietrich, Kujala, & Artto, 2013). In the latest product development, the project teams represent a well-established and highly applicable organization structure (Edmondson & Nembhard, 2015). However, in many cases single project team cannot manage with the high extent of complication embedded in new products and services. Therefore, complex projects which cover different functions in the organization and require technical knowledge from different areas are organized as projects that contain several teams. These types of projects are called multi-team projects (Vuorinen & Martinsuo, 2018). In an organization the multi-team project structure are usually formed to carry out a defined set of activities that contribute to the overall goals of the project (Dingsyr, Rolland, Moe, & Seim, 2017). The multiple project teams in an organization involve a business manager who takes the responsibility of the whole project and team leaders or assistant project managers who are responsible for the team actions at work and managing the resources within team.

The organizational policy of most of the IT industries in Pakistan is not effective

in terms of their rules and regulations towards a successful delivery of the product with respect to triple constraint which are time, cost and scope mostly the policies are made but are violated by the top management and favoritism, means those employees who get dominated in the company they disobey and break the rule and doesn't participate in the collective decision making and have very low impact on the completion of the targets which are set by the higher authority. The employees in an organization sometime face struggle in balancing their identity inside and outside the organization such that the policy which is applied in the organization are although hard and rules and regulations are not acceptable by the co-workers of the organization. The worker should follow the policy and they will only follow it when the top management themselves follow the organization policy and make work easy and train the low level worker and engage them in the work and also motivate them by helping them during the work and getting things settle by taking their suggestion.

Top management of the organization must have employability skill in them means they should have competency related to IT and willingness to work and get the skillful employed worker (Teijeiro, Rungo, & Freire, 2013). In the early 90s employability means that the individuals in an organization dynamically gather human and social capital to maintain and find work in todays unstable economy (V.Smith, 2010).These employability tasks contain go through training, Acquiring skills, and identity work (Dill & Morgan, 2017). Firms arguably offer some support to untrained workers to contribute in employability tasks, largely because untrained workers often lack the resources, skills and social capital to track these activities on their own (Kossek & Dyne, 2016). For example, low-skill workers may lack resources like additional education or training, as many need to work fulltime to support a family or hold multiple jobs (Cuyper, Heijden, & Witte, 2011).

So organizational policy must be aligned parallel to the resources of the organization and their team competencies. In Pakistan there is a major gap in the alignment of resources parallel with the team competency along with their performance, mostly project get delay due to the unrealistic planning and poor resource management.

1.2   Gap Analysis

It is believed that the business manager with poor IT competence have a negative influence on the success of the project and if he has high competence then it will have positive impact but in our research we only have to check the impact of business managers IT competence on IT project success. In IT competence, project success ratio are still reported as low, the low success rate have been considered as a consistent issue for many IT firms over the past few years and is broadly considered a consistent problem that are faced by the IT professionals in the IT industry (M.Nicholas & J.Hidding, 2017).

The business manager who have low IT competence will result in the low performance of the organization and that eventually decrease the success rate of the projects. The whole world is closer to the solution of this problem but in Pakistan there is a still gap in the IT industry, because the business manager are non-technical they dont have competent knowledge related to IT. In any organization the business managers are the key assets for the project success as the success rate of the project is very low which elaborates the IT competence level of the business managers are very low respectively. In previous research it was stated that other aspects should be tested as a mediator between independent variable IT competence and dependent variable IT project success so i take team coordination as a mediator and organizational policy as a moderator (Engelbrecht, Johnston, & Hooper, 2017). The IT Industry frequently realize some unusual challenges, including several goals, problems in determining success, and having to deal with a multiple internal and external stakeholders in the decision-making processes (Aragones-Beltran, Garcia-Melon, & Montesinos-Valera, 2017).

IT project success rate is the outcome of IT developer and business manager collective actions of their decision making process, the more strong collective actions they perform by taking the guideline of each and every individual in the organization the better will be their end output which lack in the IT industry due to the conflict of interest of the IT developers and the business manager. Team coordination is important to enhance the success rate of IT projects and when

there is no team coordination, it directly impacts on the project success and the project move closer to the failure. There is a gap of organizational policy as well in our research organizational policy will act as a moderator to enhance and make the positive relationship between the IT competence and the IT project success (Vathsala Wickramasinghe, M.S.M. Nisaf, 2013).

1.3 Problem Statement

Many firms do not critically examine the reasons of project collapse which avoid these organizations to realize from their mistakes (Robert D. Galliers, 2014). Unexpectedly low IT project success rate have become a consistent problem in IT industry in Pakistan. Due to negligence of top management and poor IT competence of the business manager, the IT project have been considered as one of the foremost reason for failure. So in order to enhance the project success the IT competence level of the business manager should be improved which consist of IT knowledge and IT experience. There is a huge amount of literature found highlighted which increased interest of researchers in this domain and on the success factors of any project but there is little evidence of studies conducting research related to success of any project in Pakistan so still there is a need to fill this gap (Iram, Khan, Sahibzada, & Ahmad, 2016).

In IT industry the high employee turnover rate is also a problem of the IT project failure as the employees in the organization leave the company because they believe that the managers are not performing their duty properly and leave the organization during the execution of the project which result in failure of the project. It damages companys reputation because the employees dont feel safe and secure about their job at work and they get demotivated and leave the job. Poor marketing campaign performance and lack of training is also the reason for the failure of IT projects. Poor team coordination between the business manager and the IT developer is also the reason of the project failure which includes lack of trust, not sharing information, low engagement during the project execution, Poor management and conflict of interest are the reason that make the project moves towards

failure. To make IT project successful these negligence in an organization should be minimized.

1.4 Research Questions

On the basis of the problem statement, the present study is indented to find answers for some questions, brief summary of the questions are as follows:

Question 1

Does IT competence leads to IT project success?

Question 2

Does IT competence leads to team coordination?

Question 3

Does team coordination Leads to IT project success?

Question 4

Does team coordination mediate the relationship between IT competence and IT project success?

Question 5

Does organizational policy moderate the relationship between IT competence and team coordination?

1.5 Research Objectives

The general objective of the study is to develop and test projected model and to investigate the relationship between IT competence, team coordination, organizational policy and IT project success. The proposed correlation between the independent, moderating and dependent variables is exhibited in the research model.

The objectives of the study are stated below:

Research Objective 1

To find the impact of IT competence on IT project success.

Research Objective 2

To find the impact of IT competence on team coordination.

Research Objective 3

To find the impact of team coordination on IT project success.

Research Objective 4

To find the mediating impact of team coordination on the relationship between IT competence and IT project success.

Research Objective 5

To find the moderating impact of organizational policy on the relationship between IT competence and team coordination.

1.6   Significance of the Study

It is important to examine the impact of business manager IT competence on IT project success because IT competence of the business manager is essential to control the resource over allocation and to manage the timely completion of projects under planned budget by the help of cooperative team with meaningful coordination. The present study is proposing several theoretical and practical significant implications. IT competence is playing a vital role in success of IT industry. As it is a process that refines the management of the IT products in the IT industry in order to enhance the productivity of IT projects. IT industry needs continuous improvement and high level of innovation for completion of its different project and that is just due to high competency of project manager. Though IT competence of the business manager can enhance the organizational policy by taking the resources of the organization and their current situation into mind. But this was not considered due to high involvement of top management and their negligence which leads to the poor IT competence and the result is low rate of project success. To make the project successful team coordination is necessary and important factor that should not be neglected in order to achieve the high rate of project success.

Although a strong policies related to employees commitment towards organization should be considered and make a fruitful decisions towards employees that should encourage them to work in the best interest of the employee, if the policies are good it means you are near to the success. By having a good organizational policy which are in the best interest of the employees and the employer make both work in a cooperative manner and they both give their full attention towards work which results in the high efficiency of the IT product and will give long term benefit to the organization and to those who work on it and also the end users. The current focus of the studies on project success is to trace the factors that cause the success of the project (Bakker, AlbertBoonstra, & HansWortmann, 2010). The present research has purpose to fulfill the current literature gap and solve the problems of the literature, that research will be beneficial for project based organization, for training project managers and team members, for consultant, student and practitioner because the current study add knowledge regarding project management domain. This research will contribute to the existing body of knowledge.

1.7 Theoretical Support

Many theoretical assessments have been presented by different researchers which are helpful worldwide to support the studies of business manager IT competence like agency theory and resource based view theory but resource based view theory can cover the variables of the present study. If the current variables have VRIO framework implemented along with RBV theory the organizational performance will get enhance and it will have impact on overall success of the project. The fundamental phenomena of RBV theory is to manage given resources during the execution of the projects.

1.7.1 Resource Based View Theory

According to Resource Based View theory (RBV) the competitive advantage and organization performance have strong impact on organization resources (P.Killen,

KamJugdev, NathalieDrouin, & YvanPetit, 2012). Resources that are valuable, important and are able to benefit the firm can bring a temporary competitive advantage to the firm (Gerschewski, L.Rose, & J.Lindsay, 2015). The RBV theory distinguishes between different types of competitive advantage such as temporary competitive advantage verses sustained competitive advantage. It should be noted that this research looks into a temporary competitive advantage for business manager IT competence because of the two following reasons first due to the openness of the IT projects their resources are normally beneficial, second most IT projects are detract after a while (Pekka Abrahamsson, 2017).

Barney (1991) introduced the VRIO framework that considers strategic resources as those which are valuable, rare, and non-imitable and involve organizational support. If a resource is valuable, rare, hard to imitate and involves it being exploited by the company then it is able to provide the organization to enhance their resources by defect-fixing effectiveness and support the set of hypotheses which will be proposed our research. Secondly, RBV has been applied successfully in the context of IS project success in general and software projects in particular (Wu, 2015). Thirdly, RBV can be applied at the project level it engage the Team Leader to Motivate and involve team in decision making process by taking their suggestion into consideration (Richard, 2017). Fourthly, the theoretical model claims that the organization policy are the most important in order to make the project successful and for that IT competence of the business manager is important in order to increase the productivity by managing the project under given resources (Kull, 2016).

Drawing on resource based view theory it has given that IT projects may provide products and services and entry into new markets for that the business manager and IT developer will need resources if they are to attain competitive advantage over both its proprietary competitors and its IT industry competitors. And responsiveness to customer needs in term of fixing software defects is one of the most frequently cited concerns of IT practitioners who adopt IT project (Ghapanchi, ClaesWohlin, & Aurum, 2014). Moreover, an effective defect-fixing process increases users sense of the software quality and value (Mockus & Weiss, 2017).

1.8 Structure of Thesis

Chapter 1 consists of general area of study, include the background of study, research gap, research objective, research questions, significance of study and underpinning theory.

Chapter 2 give a detail understanding of literature of four variables and also includes hypothesis development on the basis of literature.

Chapter 3 consists of complete research methodology, including sample, procedure for data collection, scales and statistical tool used.

Chapter 4 is about the results of study and acceptance and rejection of hypothesis.

Chapter 5 is about discussion, findings, theoretical and practical implications, and limitations and future suggestion for research.

Chapter 2

Literature Review

This portion verifies the literature on the IT industry in a general and explicit way in context of Pakistan, where the IT industry is far behind from other countries, which are developing rapidly in this field. This section also discusses why the business manager IT skills are considered as independent variable, why team coordination is considered as mediating variable and organizational policy as a moderating variable. We will discuss in more detail the literature on the success of IT projects, explaining why the variable is considered as independent, mediating and moderating variables. Finally, the resource based view theory was used to help the survey system be examined in along with the theoretical contribution of the research.

2.1   IT Project Success

Project management aims to ensure that the success of a project is an emotional idea based on the point of view of the individual evaluating the success (Sumner, Bock, & Giamartino, 2013). Traditionally, compliance with cost, schedule, quality and execution (meeting the explicit needs of the project) have been used as a criterion for evaluating project success. These measures, known as the iron triangle, are considered to be the best level of quality to estimate the success of a project (Standing, Guilfoyle, Lin, & Love, 2014). A focus on these components suggests

that the project management is more concerned on organizational productivity than with organizational adequacy. The goal of project management is to confirm the success of the project. Nevertheless, organizations are encountering new challenges in receiving project management techniques in data framework projects (IS) as recommended (Osei-Bryson, Barclay, & Kweku-Muata, 2016).

According to Osei-Bryson, Barclay, & Kweku-Muata (2016) the key challenges in IT projects often takes into account the lack of clearly defined objectives and the desires of the scrambled stakeholders for example, project support, an advisor external, staff and official management. In addition, over the past few years, three criteria (time, cost, quality) often called fundamental or traditional criteria, have been criticized on the grounds that they seem to be lacking. Some authors consider them extreme, while others consider them inappropriate (Dvir, Sadeh, & Malach-Pines, 2012). The recent research used the essential criteria to improve the productivity of the project because the project execution was evaluated according to the established budget plan, schedule, specialized features such as product and service conditions, and the ability to meet the needs of the client requirements. Remember that the dimension of quality has been subdivided into two criteria to meet the specification and satisfy the needs of the customer.

2.2 IT Competence

With the growing dimensions of competition in business, innovative skills are increasingly seen as essential for firms to maintain their long-term competitive position (Acur, Kandemir, Weerd-Nederhof, & Song, 2014). Technological skills need firms to create and use technology to reach the preferred competitive point of view and to stay close to their customers and meet their desire to know desires of the object for which they need the association (Nam, Lee, & Lee, 2018). The growth of technological skills reflects the estimates of technological push which highlights the improvement of largely technologically inventions and managements (Gatignon & Xuereb, 2016). Such skills are intangible and rely on cooperation, which are mostly

difficult for competitors to exchange, imitate or duplicate (M.Davis, kettinger, & Kunev, 2016).

Information Technology (IT) is perceived as a source of privileged competitive perspectives for firms performance. This accounts for large amount of business assets invested steadily in the IT industry (Teo & C.Ranganathan, 2017). However, research findings determine the effects of IT on firms performance to uncover conflicting results. Some of the results reveal the positive effects of IT investment on the firms performance. Others do not detect any significant effect or negative link among IT investment and firm performance. This is called the inconsistency of IT products (Snow & Hrebiniak, 2016). In examining the connection among firm performance and Information Technology (IT) assets, it has been suggested that there may be some key moderating variables which encourage for more research into this question (Lu & Ramamurthy, 2012).

2.3 Team Coordination

Team coordination is a special case which occurs when two or more people work together for a limited time to meet a common and valuable function (I.Tannenbaum, L.Beard, & Salas, 2011). Leedom and Simon (2014) stated that people performed more effectively as a team compared to some motor-conceptual tasks that are done individually. Efficiency is the goal of each organization. Team coordination to achieve a high level of performance is an original component to achieve high success rates. Generally, people are working very hard when they are aware of their working environment and are very dependent on the total productivity people (Rico, Sanchez-Manzanares, Gil, & Gibson, 2015). Team coordination takes place in a specific organizational context with members of the project team and collectively follows a specific procedure for performing the work. Software development activities are critically interactive and usually complex, with the ability to communicate with imagination and manage reliance among tasks, development and function accuracy are important for team performance. (Toups, Kerne, Hamilton, & Shahzad, 2011).

2.4   Organizational Policy

In order to manage organizational procedures, firms use strategies as an instrument to guide and link these procedures. A policy is a guide that defines the decision making parameters (A.Graddy & L.Morgan, 2012). Policy development is a collaborative process that takes into account the structure of the policy, the context and the specific requirements which concerns of the policy and its creative process, as well as the real choices and opportunities that arise (Borras, 2011).

The complexity of the policy processes in firm can be described as adapting to recurring strategic problems. Examples of common strategic problems in firm contain the advancement and acquisition of information technology, business security, improved programming, to refer to a couple of them. These techniques can be influenced by unclear and conflicting objectives defined for the political objectives, the partners being associated with at least part of the procedure with different and values or interests, an impact of the situation and political inclinations (Nabukenya, 2005).

2.5   IT competence and IT Project Success

To provide the functional integration among IT and business department, the business manager and IT professional should have the knowledge of IT competence and business competence respectively (Crawford, 2011). IT will be enclosed in the key business procedures by executing the process aligned among business manager and the IT experts. The rapid responsiveness to change in the field of IT can facilitate IT and business resources to a certain extent (Pinsonneault, 2011). The development of IT alignment was supported by the business manager and IT expert who have the knowledge of IT competence and business competence respectively in their cross departments. IT information and skills of project managers is one side contributing to the collective information between business managers and IT professionals. Many organizations face the challenges of risk for managing IT

project because it is becoming more reliable, faster and less expensive (Marchewka, 2014).

IT competence of the Business manager improve the project success rate. The purpose of project management is to certify the success of the project. However, companies face new challenges when accepting project management methodologies in IT projects (Osei-Bryson, Barclay, & Kweku-Muata, 2016). The key challenges in IT developments frequently, includes the mismatched stakeholders expectation such as project champion, external advisor, staff and superior management and the lack of clearly defined objectives. Moreover, the success criteria of IT project depends on the perspective of various stakeholder like customer, business manager and IT developer (McLeod, Doolin, & MacDonell, 2012). Due to lack of implementation of the triple constraints, IT projects mostly get failed during the execution of the projects. To mainly recognize the reasons of project failure, researchers studied a number of project management dimensions, consisting how projects are directed and the internal and external backgrounds in which projects are accomplished (Karen E.Papke-Shields, 2010). Competence covers knowledge, skills, behavior and actions.

Geoghegan and Dulewicz (2013) believes that these four dimensions are interlinked across the relationship of opportunity and knowledge. Competency is generally classified into soft skills and hard skills (P.W.G.Morris, L.Crawford, D.Hodgson, M.M.Shepherd, & J.Thomas, 2014). Hard skills distinguish the necessary resources that are needed to execute an activity. From an IT project point of view, hard skills effectively associate with the project management body of knowledge. Soft skills can be recognized as personal attitudes, traits and behaviors and contains attributes which makes the business manager to guide, motivate and have impact on stakeholders and team members (Ralf Muller,Rodney Turner, 2010).

Competency can associate to project success in two disciplines first among the affirmation that the project executives capability itself a critical success factor, furthermore in those area that have the most impact on successful outcomes through competent project manager (LynnCrawford & Nahmias, 2015). The most common additional criteria made up the client satisfy. It is important to notice that client

satisfaction is a subjective opinion, in contradiction to the objective determines of the iron triangle. Atkinson, Crawford, and Ward (2011) considering the views of multiple stakeholders, the time, schedule and scope, as well as the subjective and relative, are represented by the measurable structure, when the project can be the object of success. Chipulu, Neoh, Ojiako, and Williams (2013) discovered One of the most important competitive advantages of IT expertise is that it plays an important role in ensuring proper flow of knowledge about the product and financial condition that reflects the critical situation of the supply chain.The result of an empirical study by PerezLopez and Alegre (2012) organizations seeking strategic facilities should not only develop IT skills but should focus solely on organizational culture and organizational education. Others have said that it provides the most obvious contribution to the supply of IT flexibility chain cycle as IT integration and IT component components (Malekifar, Taghizadeh, Rahman, & Khan, 2014).

Thomas and Fernandez (2017) present a summary, which is understood that the project success of the IT project is a multi-dimensional form of success which it does not agree with which is not limited to in any way.while Basten, Joosten, and Mellis (2011) claims successful estimates of the iron triangle is triggered by the problem of measurability of additional success factors. So it is ensured to build IT project evaluation structure which goes beyond the boundaries of the iron triangle.

In way to increase profit and respond to market, the best companies offers competitive advantages that are constantly examining for proven practices. These companies mainly prevent practices that do not give some proven extra values. Multiple studies have shown that the role of a business manager is crucial to project success. The literature on project success factor has generally overlooked the influence of business manager on project success (Ralf Muller, Rodney Turner, 2012). IT professional emphases on the procedure of IT to manage tasks in design, development, procurement, manufacturing, logistics, and distribution, accepting the supply chain partners to swap knowledge, cooperate, and create replenishment plans separately. In an empirical study Clarke (2010) claimed that in an organization the integrated information flow, tangible resources and cash flow. The information on the inventory can access with a satisfactory combined information

system in IT firm suppliers and manufacturers thereby, get a well-defined proposal of the supply chain and inventory importance and values that required response time to make rapid change in market. IT integration enables real time information exchange and information sharing among supply chain partner and thus improves supply chain agility.

Hypothesis 1: There is a positive impact of IT competence on IT project success.

2.6   IT Competence and Team Coordination

The concept of competence was first addressed in the mid-1970s by referring to the particular indicator of an individual's abilities and to qualities that could be used by the discipline of psychology as preferred job performance compared to standard intelligence tests (Choi, 2015). It is important that the competence must give power to the execution, but it does not really infer the execution, because elements such as the past skill, for example, the effort, as well as the associated assets and conditions can also be influencing enforcement (Bassellier & Benbasat, 2011). Research efforts considered both the skill of IT expert and the IT competence of operational managers. Sambamurthy, V.Zmud, W.Robert (2015) emphasize the importance of supervising IT management skills firm. In addition, such competence should contain two domain: the explicit and tacit learning of IT information, which leads to an increased willingness to work with IT workers to lead and participate in IT projects (Chiasson & Davidson, 2016). There are three segments of IT such as competence: information, abilities and individual characteristics. The learning segment is exceptionally attractive to enable teachers and organizational analysts to organize.

Bassellier, Genevieve,Reich, Blaize Horner, Benbasat and Izak (2013) differentiate IT related skills into both explicit information on progress, applications, management improvement and management of IT and tacit information, a combination of experience and cognition. IT Capabilities often suggest a repeated ease in doing something and are mainly job oriented. Manager capabilities include both abilities, which are explicit IT skills acquired after a certain time, as well as abilities, an

individual's ability to acquire additional abilities (Campbell, 2017). The IT skills of business managers can also be differentiated into specialized skills and managerial capabilities. These technical capabilities suggest that the manager's abilities and capabilities acquired through learning and specific job or tasks are performed in practicing IT, IT related business decisions indicate the manager ability and aptitude to lead subordinates in an organization or accomplish predetermined goals in a particular sector.

Through information and IT skills, public manager are required to define their own perspectives, qualities, standards and beliefs about IT, which are outsourced in their viewpoints and actions towards IT. Competent manager should have an individual IT morality, for example in terms of restrictive software and privacy of information protection (C.Henderson & A.Snyder, 2013). These managers would appreciate IT for their work, know the specific needs of the company, perceive the individual limits in terms of skills and aptitudes, would be happy to obtain information and skills in computer science and would be able to make specialized changes. At the organizational level, a competent manager appreciate the capabilities and uses of technology as a means of delivering outstanding business results (Lin, Hsu, & Fu, 2015). Explicit information in this dimension incorporates framework improvement strategies and practices, IT management and access to learn tacit information includes both project and IT management experience, and cognition, particularly the procedure of organizational activities and the vision of IT in the firm (Bagayogo, Lapointe, & Bassellier, 2014).

Business managers are most likely to manage IT products, direct IT-enabled organizational change, detail IT-related organizational standard, polices and organizational approaches, create IT-based techniques, and move IT resources, organization articulate the IT vision and especially align IT vision with firm mission (Ni & Chen, 2016). Qian Hu (2018) explicitly emphasizes analytical capabilities, for example, stakeholder review, client needs review, business process analysis, information policy analysis, review information and work process, display methods, hazard assessment, etc., and skills for managing complex projects such as communication and introduction, organization, intra and inter coordination, agencies,

mental coordination, chance management. At the same time, public manager should have the capacity to ensure that IT management knows the capabilities and know-how of the organization. Capacity at the organizational level is a large extent administrative in nature.

The success of the project is not only a component of the capabilities of individuals and accessible resources, but also the processes used by team members to interface with each other in order to accomplish their work. Understanding the procedures used by representatives to cooperate in teams will enable firms to reorganize human resource management frameworks and managers to select, train, create and reward staff for effective teamwork (Dirks, 2016). The recognition of this process assumes essential work in the execution of the team over the past twenty years, a multiplication of team considerations in connected environments and research laboratories has been triggered. During this period, the creation of hypothetical models of team viability was taken more into account, with team forms having central work (Kiffin-Petersen, 2018).

One of the characteristic features of effective leaders is the ability to organize the team members activities through successful communication of common goals. One of the defining features of effective leaders is the ability to coordinate the team members' actions through successful communication with the goal of general goals (Reuben & Timko, 2018). The team members, individuals with diverse knowledge, collaborate and facilitate between their tasks that it is impossible for the individual alone (Misra & Srivastava, 2018). To find a guide to create a framework to meet the demands of necessities both specialized information and commercial information (Heredia, Garcia-Guzman, Medina-Domnguez, & Mora-Soto, 2018). However, the high failure rate of many projects that have been unable to achieve the expected goal with the schedule and expense of the team, the existence of low-level teammates (Al-Shatti & Yousef, 2019). In order to achieve predetermined joint goals, members of one team convert input into results by various activities conducted to perform contradictory tasks. (Freeman, 2018).

Understanding the connection between the IT and business of an organization is an important non-technical expertise and the specific business knowledge of the

organization. This knowledge realizes the business of the company, its strategy and the advantages of competitive advantage. It is about organizational goals and objectives, key skills and business environment managed by the company. It is related to top management options as well as understanding the policies and culture of the companies. It is quite reasonable to expect the organization's specific business knowledge staff to influence their preferences and satisfaction of their work. However, it takes time to collect specific business knowledge of the organization and such business skills are not easily transferable. Therefore, organizational specific business knowledge, and such business skills are not easily transferable (Kowal & Roztocki, 2015).

Hypothesis 2: There is a positive impact of IT competence on Team coordination.

2.7 Team Coordination and IT Project Success

Information technology (IT) is considered to be a source of competitive advantage for an organizations performance. The most important factor that can never be neglected in project IT is considered as a source of privileged competitive perspectives for running an organization. The most important factor which never neglected in project management is the success of the project, which revealed the level of IT competence and the satisfaction of employees in their work (Fortin, 2018). The most common factor for estimating project performance is time and costs. Barnes (2017) suggested five measures as an evaluator of the success of a project for example, project productivity, impact on the client, impact on the team, commercial success and direct. Mostly, it is certain that the business supervisor, who does not have team coordination with the IT developers, will have a low success rate for the project. Thus, for the project to succeed, we use it in a unique way. Project success estimated by multiple dimensions, for example, cost, time and scope, whereas scope extension is estimated with the quality of expectations.

Since the general usage of the companies information progress has been started, the administration of top management of the organizations structure, updating

and use of information structure is considered to be fundamental for the success of this progress (Martinho, Gomes, & Yasin, 2015). The importance of this is how CEOs play a role in the allocation of resources and how, where, and when their IT power capabilities are used, play an important role (Liu, Wei, Ke, Wei, & Hua, 2016). Competence and adequacy are the goals of each firm to reach a high state of execution, team coordination is a key factor in achieving a high rate of progress. People usually work more diligently when they know their working environment, and absolute productivity depends heavily on these people (Nofera, Korkmaz, & Miller, 2011).

Team coordination is defined as a necessary activity to maintain consistency between work products or to operate reliability in the workflow. Various dependencies like task and task holders, such as shared resources, task assignment, concurrent restriction and task-related relationship These dependencies lead to the need for co-ordination among the stakeholders working in related work related sets. If these adjustments are not satisfied with the requirement, they will have the challenge of coordination (Fischer, et al., 2014).

The team is broadly important in the field of work and activities. In IT industry software development and business activities are a clear example where conscious efforts are being made institutionalize and promote cooperative values and practice. This is true for scientific domains, where the role of teamwork became increasingly important for high impact science production. Like any other team, virtual teams is a group of groups that effectively communicate with the interdependent tasks operated by a general purpose. The structure and success of virtual teams is an important factor in the development of flexible organizations. Enterprises can now benefit from virtual interaction in such environments where the work of the team was once impossible, access to previously unavailable skills, as well as maintain the benefits of the flat organizational structure (Salas, Prince, Baker, & Shrestha, 2017).

To achieve better quality in a project relies on team coordination between the employees and the business manager. It has been proposed that in a project team,

the quality of teamwork is one of the most critical factors affecting project performance through collaboration and knowledge sharing among team members. The quality of the team work has six elements: communication, coordination, the balance of member contributions, mutual support, effort, and cohesion (Brinckmann & Hoegl, 2011). Finally, to obtain a better quality, the coordination between the business manager and the IT manager must be supervised and monitored throughout the execution of the project. Global Software Development (GSD) has become a modern standard for creating and maintaining focused programming frameworks. On the other hand, associations are persistently dispersing and dispersing over time to search for asset mobility, shorten presentation times, technological breakthroughs, increase operational efficiency and reduce the negative impact of separation on customers (Moitra, 2012). Again, globalization is also complicated by the difficulty of overseeing dispersed project activities. Many authorities and supervisors find global programming projects overly cumbersome and tedious. There is an increasing number of problem reports generated by different dispersion measures, leading to a high rate of disappointment for GSD projects (Matthias Fabriek, 2016).

The global team is an idea with multiple implications, including an offshore team, outsourcing team, a virtual team and an open source community. Global teams work in different types of dispersed conditions where team members correspondence is usually electronic asynchronous, with limited opportunities for occasional and face to face contact (grote, kolbe, & waller, 2018). Team coordination takes place in a specific organizational context among the members of the project team and applies a special process so that everyone can work jointly. The software development activities are intensely intelligent and consistently complex, communicating with the concepts and improving the ability to monitor the instability situation and at the speed of the task accuracy, important for the execution of the group (Streeter, 2011). At a time when software development tasks are becoming large and increasing the interdependencies between tasks and task owners are becoming more and more confused. This distributed team makes it more difficult to combine (Dyba, 2011).

Hypothesis 3: There is a positive impact of team coordination on IT project success.

2.8 Team Coordination Mediates the Relationship between the IT Competence and IT Project Success

A better alignment between the business and IT can be achieved through IT Competence (Wati & Koo, 2011). Many studies and publications has been attempted to change Business/IT alignment which is a very complex construct. Strategic Alignment Model is a renowned model for the alignment of Business/IT (Loeser, Erek, Schmidt, Zarnekow, & Kolbe, 2011). By directing to the required balance between business procedures, IT techniques, business procedures, and IT forms. This model have been enhanced by different experts also with extra bits of knowledge and have offered increasingly clear business/IT arrangement definitions, for example, how much the IT mission , destinations and plans support are encouraged by the business mission, targets and plans (T.Kettenring, A.Tuschke, & A., 2014).

It is being carried out in new journals anyway that numerous arrangement definitions in writing are every now and again centered just around how IT is being adjusted (combined, in sociability, coordinated, connected, synchronized) with the business (M.El-Masri, A.Orozco, A.Tarhini, & Tarhini, 2015). How the business is aligned with IT must also be addressed through alignment. Whenever the multiple teams are involved in a project, the coordination of work teams is of critical importance. Multi-team projects are used in many domains, in a satisfactory time-to market in order to achieve high quality innovations and many individuals might be required to create segments of another item all the while in such projects. A significant part of the assets utilized on advancements today are utilized on programming improvement. A typical comprehension of coordination is to oversee conditions in between for example undertakings, assets or innovation (hu &

Kapucu, 2016). There are various systems that can be connected to accomplish coordination, a few instruments can be utilized to practice the coordination. Three coordinating modes were proposed by Maduka, Edwards, Greenwood, OsZborne, and Babatunde (2018), which then were used by Dingsoyr, Moe, and Seim (2018) for the research based on multiple project team which were used by programming or characterization poor mode, and coordination by input or shared modification on the individual mode or on a gathering level gathering mode. The poor coordination instruments are organized, and insignificant verbal association between individuals is required once it gets represented.

Individuals can achieve more by managing as a group than by when they would work alone with the end goal that, as Aristotle stated, "The whole is more prominent than the aggregate of its parts." One of the root cause for passion for group coordination is this coordination impact. Frequent tasks, for example, the interest rotor assignment, manual control of electromechanical mechanical assemblies and laparoscopic cutting gets specifically influenced by team-coordination, which at that point demonstrate that individuals in a team play out some task above the expectation of the top management that undertakes more adequately than independently (Gorman & Crites, 2013).

Few individuals neglects to perform tasks which can be effectively finished through team coordination. There are numerous accomplishments of team coordination, regardless of whether in research facility undertakings or naturalistic settings like gathering requirements or making software design as a team (C.Jamie Gorman, 2014).

Whereas, team coordination impacts are viewed. Group coordination impacts particularly as they identify with team viability. Does group coordination spring forward from internal mental interpretations and learning structures or is it a component of constant, powerful teamwork between individuals. Does it happen inside a specific dimension of analysis (e.g., intellectual, perceptual-machine), or does it length various dimensions of investigation. These inquiries reflect two focal issues at the bleeding edge of group coordination look into. Inspite of the fact that these issues relate extensively to mind and collaboration and mind body dualism

(Bendig, Enke, Thieme, & Brettel, 2018). The aim behind this article is to check these issues in light of coordination examine and to start to integrate them toward a general hypothesis of group coordination.

Team coordination among employees working in a team is important in coordinating multiple projects involving multiple teams. Multiple projects are used in many domains, often acquiring high quality innovation in time-market. And in such programs, hundreds of people should develop new product elements together. In large innovative projects, the degree of complexity and uncertainty is high, because the tasks performed in teams are influenced by the work and input of other groups (Demir, 2018). As a result, choosing the right combination practices is important, because they have important implications on sharing information, the speed of the workflow, the efficiency of the project, and the results of the education. Responding to the research of the program management, the journal of the association for information systems, raises questions about how to relate mutually dependence among projects to improve coordination in journal research.

Coordination of large-scale software development is of paramount importance, because it is managed simultaneously by multiple developers and development teams. Frequently delivery of results and ultimately need to coordinate different levels of work and knowledge. In such projects small dependencies are more uncertain than small projects, therefore, the teams should know that experts and any experts want to coordinate the job, especially when they are outside the team on a large scale software project describes processes for inter-team combinations (Bourbousson, 2015).

A competency model is a valid, observable, and measurable list of the knowledge, skills, and attributes demonstrated through behavior that results in outstanding performance in a particular work context. Competency model is a set of competencies that include the key behaviors required for excellent performance in a particular role (S.Heroux & Fortin, 2016).

Depending on the work and organizational environment, a group of seven to nine total competencies are usually required for a particular job and depicted in a competency model. A competency model is an organizing framework that lists

competencies required for effective performance in a specific job, job family (e.g., a group of related jobs) and organization. The model is organized into tiers of competencies and includes descriptions of the activities and behaviors associated with each competency. Competency models are often highly tailored to the organization. As such, the elements of a competency model communicate, in clear terms, the circumstances and conditions of performance. Individual competencies are organized into competency models to enable people in an organization or profession to understand, discuss, and apply the competencies to workforce performance (Wang, 2018).

From the above literature it is concluded that the team coordination have a significant influence on IT competence and IT project success. The business manager have a high IT project success rate when he work closely with his team and motivate their employees and coworker to perform the tasks, he must lead them not manage them.

Hypothesis 4: Team coordination mediates the relationship between IT competence and IT project success.

2.9 Organizational Policy Moderates Relationship between IT Competence to IT Project Success

According to Kelly (2017) organizational policy refers to an effectively organized arrangement of components that encourages practices steady with the firms central goal, technique, and culture. The term organizational policy has been broadly utilized by many gatherings, for example, IT chiefs, experts, reviewers, and programming suppliers, for different parts of corporate IT the executives. The outcomes of firm success have received relatively less consideration than its determinants. In article of Annamalai and Ramayah (2013), describe IT policy execution as organizational policy competence in conveying for the results are weighted by the

organization's significance, IT utilization, growth and business flexibility for effective use of IT and resource utilization for asset use. Because of its simplicity and usability, analysts have broadly adopt this measure (Schotter, Mudambi, Doz, & Gaur, 2017).

To examine the impact of IT strategy on IT capacity is limited and the data information system needs studies that simultaneously research the effects of both IT policy and IT ability on IT Industry, advertise value creation and practical accounting accomplishment (Chua, Lim, Soh, & Sia, 2012) . Therefore, we trust that organizations with successful and capable IT policy may keep up extraordinary resources in human IT assets, for example, IT abilities and experience, IT-empowered assets, for example, IT information resources and IT forms, and mainly the superior firm performance can achieve the competitive advantage.

To be innovative and determined in the present worldwide digital economy, firms have little decision however to put resources into data and communication technologies (IT). Without the best possible firm capacities and skills to put these digital advantages for efficient use, firms are at huge risk of wasting their assets and mission key chances for development and competitiveness. Organizational policy is a fundamental part of large business organization and involves the activity and definitive structures and methods that ensure that the affiliations between IT proceeds and expands the firms frameworks and goals (Bertram, A.Blase, & L.fixen, 2015). The IT Policy of Firms are treated as a wide idea that encapsulates technical framework, the supporting firm structure, and IT the executives capabilities and procedures. By the increasing business introduction and the resulting management unpredictability of corporate IT offices, IT strategy has turned into a vital issue in both academic research and firm practices (W.Onzivu, 2014).

The combination of organizational, technical, and cultural influences involves the utilization of IT resources (Nfuka & Rusu, 2010). Effective organizational policy is vital to organize them. A same concept that focuses on business-IT alignment was suggested by lichtenthaler (2016), who believes IT policy of the firm limit practiced by the directorate, official executives and IT executives to control the plan and usage of IT technique and in this way to ensure the explosion of business and IT. So

in order make a clear requirement between IT board and IT policy to correspond to established concept of organizational policy, the working definition up front the understanding of organizational policy. Sarooghi, Libaers, and Burkemper (2015) argues that the formal and casual structures of a firm have a vital bearing on the quality of innovation action. They focuses on seven key properties of technological improvement. Specifically, development will in general be characterized by uncertainty, path reliance, and technological interrelatedness, it tend to be cumulative in nature and display irreversibility, information is frequently implied, and advancements can be dicult to suitable. Given these fundamental properties of technological advancement identifies the firms requirements for innovation achievement (Bresnen, 2016).

When they have the appropriate IT experience and knowledge, then we have argued that organizations with leadership IT background such as IT skills and IT experience may have unique human IT resources in using IT to create business value of IT (Heirati, 2016). They also suggested that firms with IT leadership importance said to consider the critical role of IT leadership such as CIO position and compensation, longer tenured CIO, and IT strategy committee, are more likely to be motivated to make efficient IT investment, implementation and maintenance, and have stronger IT organizational structure to achieve business value of IT investment. Considering the importance of IT leadership, companies that consider CIO positions and compensation, long term CIO and IT strategic IT leadership play an important role, they can be encouraged and encouraged to invest, implement and maintain efficient IT. IT organizational structure to achieve business value of IT investment.

An important limitation of this former research has been neglected to define the companies standing position for its qualification-specific features, although it is traditionally viewed as the main determinant of attitude and behavior of applicants for employment. Although it has been established that organizational policy can be linked to other values, other organizational issues will be the same, the possible trade-off between the ethical and other qualification-related organizational characteristics is not explicitly mentioned. Yet people usually face the conditions

of their social or career, where different considerations or preferences are inconsistent, because successful pursuits of the IT organizations conflict with their personal values. It has been established that initiatives and activities to show the perceived ethics of the organization - for example, Corporate Social Responsibility (CSR). It can contribute to the satisfaction and commitment of its employees.However, the comparative impact of the organizations ethics is still unclear as compared to its efficiency.

We consider three parts of firms IT policy instruments oversight (outside commissions), initiative IT foundation and IT leadership significance (Lyytinen & Zvi, 2017). Set of IT-related experience that enabled the officials to demonstrate the leadership of IT in their business. Expanding their understanding of IT experiences which enable it to create creativity in the IT area. Leading Directors, Officers, Board of Directors and Committee members recognize appropriate IT experience related to IT and take leadership while learning. Thus, we argue that organizations with leadership IT foundation, IT skills and IT experience may have one of a kind human IT assets in utilizing IT to make business estimation of IT (Heirati, 2016).In IT industry organizations are investing a lot of investment in executing new projects along with the maintenance and services provided by the organization. Due to the lack of interest of lower workers and conflict among higher authorities mostly projects gets failed. They additionally also recommended that organizations with IT leadership significance said to consider the basic role of IT initiative, for example, CIO position and remuneration, longer tenured CIO, and IT strategy committee, are more likely to be productive IT investment, execution and support, and have more grounded IT firm structure to accomplish business estimation of IT investments.

Hypothesis 5: Organizational policy moderates the relationship between IT competence and IT project success.
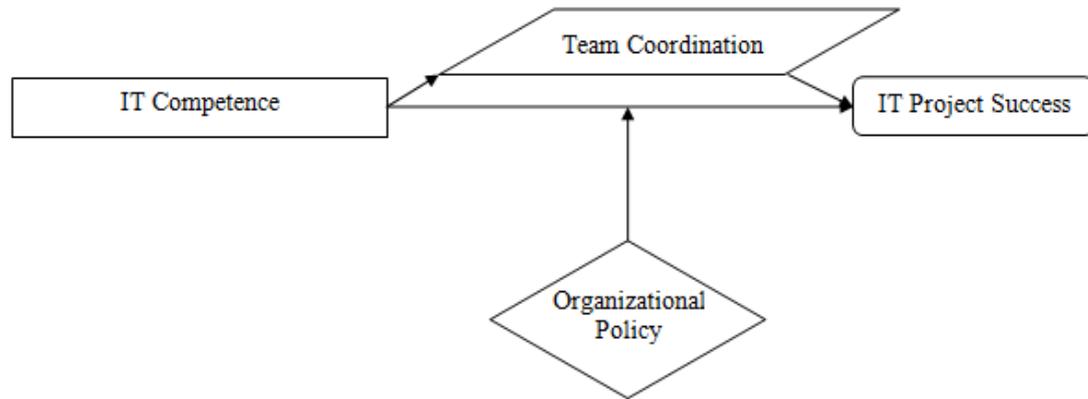
FIGURE 2.1: Research Model

2.10   Summary

Literature of this study support that business manager in an organization are facing lack of IT competence such as IT skill and IT knowledge and this may influence lack of team coordination among team members which can cause to decrease IT project success rate. Literature also suggested that team conflicts are unavoidable in a group or team, only better team coordination with define set of rules can help to handle and manage these conflicts. Organizational policy will also play vital role to increase the IT competence of the business manager by following the policy under the define organizational structure, according to literature business manager have more power as compared to team members, so manager act as aggressive leader e.g. aggressive behavior and it can hurt team members. The manager doesn't coordination with his team member which may cause lack of motivation and job fearless among employees working in an organization and they may leave the organization during the execution of the projects which make the organization performance graph below the bottom line and the success rate get decrease. Literature proves that IT competence and IT project success are significantly associated with each other.

2.11   Research Hypothesis

H$_1$: There is a positive impact of IT competence on IT project success.

H$_2$: There is a positive impact of IT competence on Team coordination.

H$_3$: There is a positive impact of team coordination on IT project success.

H$_4$: Team coordination mediates the relationship between IT competence and IT project success.

H$_5$: Organizational policy moderates the relationship between IT competence and IT project success.

Chapter 3

Research Methodology

3.1 Introduction

This section contains all the procedures with complete detail and methods applied in this study to get the valid results. The arguments contain details related to design of research, population, sampling characteristics, sampling techniques, instruments and reliability of all the variables and items involved in this study.

3.2 Research Design

Research design is a context of study proposal of action. Zikmund (2016) stated that the study of research design as a strategy of the researcher, it defines the technique and method for collecting and investigating the vital information. Research design contains time horizon, unit of analysis and study setting which are discussed below.

3.2.1 Type of Study

Research of this type is used to highlight the impact of business manager's IT competence on IT project success with the mediating role of team coordination and moderating role of organizational policy, for that co-relational study has been

used in this research. For this purpose, IT industry of Pakistan has been targeted to get the required data needed to get the authentic results. To represent the whole population of Pakistan a suitable sample was assumed for this research. This will help to simplify the results from the sample statistics that is expected to be demonstrated by the whole population of Pakistan.

3.2.2   Study Setting

Participants of this study was from IT industry. Business manager's were contacted from private sectors software organization to fill questionnaire in their work settings. The cover letter (attached at the appendix) explicitly indicate that the study is being conducted for academic research purposes only and is aimed to provide clear understanding of effect of IT Competence on IT Project success. Participants were assured of the confidentiality of keeping them anonymous which make them comfortable to fill in the questionnaire.

3.2.3   Time Horizon

Data were collected in duration of three months and at once. Nature of data was cross sectional.

3.2.4   Unit of Analysis

In research any entity which is analyzed by researcher is called unit of analysis. Each member in an organization is unit and one element of population is called unit of analysis. The unit of analysis relies on purpose and nature of research. The unit of analysis is a separate group, organization, culture or country where data may be required to be collected (Khan S. N., 2014). In Micro level research, the unit of analysis is individual and at broader level it focuses on groups. Unit of analysis in this study is business manager's working in software organization in Pakistan. Data was collected individually from each business manager's.

3.2.5 Population

A sample is drawn from all set of cases is called population. It is difficult to collect data from the population therefore it is required to select sample. This study population include business manager's from software organizations of Pakistan. The reason to choose IT industry of Pakistan is that it is contributing to economy of Pakistan, this is attracting foreign investors and this industry is also contributing to global recognition of Pakistan as developing country (Hussain, 2011). The IT sector is revealing enhanced development with complete information technology revenue of US $ 3.1 billion, containing both exports and domestics turnover. GDP from Information Technology in Pakistan increased to 6970204 Million PKR in 2017 from 6577139 Million PKR in 2016 which is 4% increase in 1 year. According to chief executive officer of Pakistans National Technology the reserves of the IT industry set to be double in 2020 (Ramzan, Saeed, Yahya, Awais, & Kashif, 2017).

3.2.6 Sample

Hair, et al. (2015) defines that a small subsection of population is called sample which is drawn with two different techniques probability and non-probability. It is not possible to collect data from all the population due to resource and time constraint that is why sampling is used to collect and analyze data. Non probability sampling technique is used where researchers collected data from population that they are interested in studying. Convenient sampling is used to collect data from population of interest. Suitable sampling (or randomly sampling) involves selecting randomly those cases that are easy to get for your sample (Etikan, Musa, & Rukayya, 2016). Snowball is generally used when it is difficult to recognize members of desired population and you make contact with one or two cases in the population (Noy, 2017). Data has been collected from software organizations working on different projects.

Total 400 questionnaire were distributed and 365 questionnaire were received and 310 were considered for analysis later on 250 valid responses was used for the desired results. 55 was not included because 55 were not properly filled and were

discarded. For data collection purpose, the researcher visited organizations and explained the questionnaire, purpose of this research method for data collection and possible respondents are business manager's working along with different teams and the researcher assured data will be confidential and to provide the results of this study on request.

3.2.7 Sample Characteristics

Demographics used in questionnaires were age, gender, qualification and total experience. Explanation of sample characteristics is given below:

3.2.7.1 Age

Age is an important part of demographics but some respondents feel hesitant to disclose their age. There were five different age ranges used in questionnaire to collect data regarding age.

3.2.7.2 Gender

Gender is also important part of demographics. Gender distributes population sample into male and female. It has been observed that the percentage of male respondents was higher than female because in software organizations mostly business manager's were male.

3.2.7.3 Qualification

Qualification is vital part of demographics like age and gender because education is important for success of any country. Five different type of degrees were mentioned in questionnaire in order to collect data regarding education.

3.2.7.4 Total Experience

Total experience is total numbers of years employee worked in different organizations. Work experience increases individual knowledge and creativity so thats

why it is important part of demographics. There was five different ranges used to collect data of employee tenure, these years ranges made convenient for employees to choose work experience.

3.3 Measurement of Variables

For each variable questionnaires were adopted from different sources. The nature of the questions included in the questionnaire are IT competence, team coordination, IT project success and organizational policy. In this study of data collection a five point Likert scale is used such as range from 1-5. Where 1 means strongly disagree and 5 means strongly agree and the scale which will be used in the research covers all the dimension of the variable. Questionnaire was developed in English language and there were five sections in questionnaire, demographics, IT competence, team coordination, IT project success and organizational policy. Below there is a description of the variables upon which the research will be conducted.

3.3.1 IT Competence

IT competence consist of IT skills, IT knowledge that enhance the performance of organization.The instruments that evaluate the IT competence of the business managers developed by (Ravichandran & Lertwongsatien, 2005) consist of 16 items and the sample items are Developing new product, express Delivery, Responsiveness to Opportunities and threats, Exploring Market, Competence level Technological structure. The items of IT competence reported a good reliability. The cronbach alpha was 0.882.

3.3.2 Team Coordination

Team coordination consist of team communication and team collaboration which enhance the team coordination among employees and higher authority within the project for successful execution of the project. Questionnaire for team coordination

was developed by (Janz, D.Brian, C.James, & Davis, 1997)which consist of 4 items. Sample items includes the team coordination of the Business managers are project team, project member, Valid Decision, Responsible Team Members, project goals. The cronbach alpha was 0.700.

3.3.3   Organizational Policy

Organizational policy consists of organizational structure, procedures and organizational processes which help in making the policies and implementation of rules and regulations in the organization. Questionnaire for organizational policy was constructed by (Tyler, 2005), which consist of 6 items. The sample items of organizational policy covers the basic area of company policy, IT functions, Rule and regulations leadership skills, financial objectives and Stakeholder Satisfaction. The result reported excellent reliability. The cronbach alpha of this was 0.896.

3.3.4   IT Project Success

Questionnaire for IT project success was constructed by J.Doll (1985) which consist of 6 items. The sample items of IT project success covers the basic area of to design or implementation problems, design objectives, alternative design, improve processing efficiency and to enhance the credibility of the systems organization. The cronbach alpha of this scale was 0.722.

3.4   Statistical Tool

Correlation and linear regression used to investigate the relation between dependent and independent variable i.e. IT competence and IT project success. Both correlation and regression analysis was analyzed through SPSS (version 20) software. To find the association strength among latent variables i.e. IT competence, team coordination, organizational policy and IT project success. correlation was used. To ensure that whether the hypothesis is accepted or rejected, regression analysis was performed. For analysis Preachers & Hayes method was used.

TABLE 3.1: Instruments

Variables	Source	Items
ITC	(Ravichandran & Lertwongsatien, 2005)	16
TC	(Janz B. D., 1997)	4
OP	(Tyler, 2005)	6
ITPS	(J.Doll, 1985)	6

3.5 Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is used to confirm the validity of data and model fits to data. To perform CFA, AMOS is used. There are four latent variables (unobserved) e.g. IT competence, IT project success, team coordination and organizational policy and twenty three observed variables.

The indices were used for model fit which includes RMSEA (Root mean square error of approximation) and the value should be between 0.05 to .10, CFI (Comparative fit index), its standard value is > 0.80, TLI (Tucker - Lewis index) standard value is > 0.9 or sometime < 0.9 is permissible, GFI (Goodness of fit index) threshold is 0.90 and the standard value of X^2/df (model chi-square) must be < 3 (B.Schreiber, Nora, Stage, Barlow, & King, 2011).

The measurement model provided an excellent fit to the data over the alternative models (x2/df=2.58, GFI=.871; TLI=.773; CFI=.832; RMSEA=.085) shown in table 4.1. The satisfactory level of testing recommended by Thompson (2000) is 0.05 (ideal) for RMSEA however 0.09 (average) may also be acceptable. CFA for complete model is shown in figure.

TABLE 3.2: CFA Measurement Model

Model	CMIN	df	X2/df	RMESA	GFI	CFI	TLI
Hypothesis measurement model	1075	415	2.58	.085	.871	.832	.773
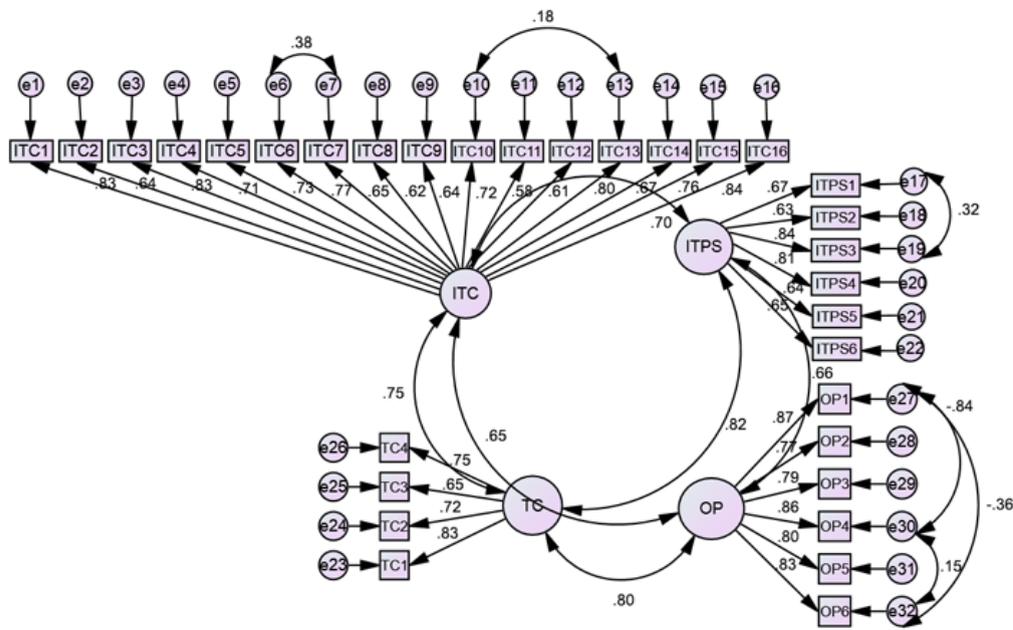
FIGURE 3.1: CFA Model

3.6 Pilot Testing

For pilot testing 50 questionnaire were distributed after pilot testing we achieved the accurate results as the Cronbach alpha value of all the respective variables were above 0.7. So no changes were made in demographics and questionnaire. For reliability analysis 30 valid questionnaires were considered and all the variables were reliable.

3.7 Reliability Analysis

Reliability analysis is used for reviewing of properties of scale used for the measurement of variable and the elements that make up the scale. It helps in evaluating internal consistency of variables and if those variables have any relationship between them or not. A scale is considered reliable when it gives similar results under inconsistent circumstances. Value of Cronbach alpha when equal or above 0.7 is

considered reliable. Higher the value of Cronbach alpha, higher the reliability of instrument to measure construct. If the value of Cronbach alpha is less than 0.7, the instrument is not considered reliable to measure construct.

TABLE 3.3: Reliability Analysis

Variables	Items	Cronbach Alpha
ITC	16	0.882
TC	4	0.700
OP	6	0.896
ITPS	6	0.722

In this study the Cronbach alpha value of IT competence is 0.882, the Cronbach value of team coordination is 0.700, the Cronbach value of organizational policy is 0.896 and for IT project success Cronbach value is 0.722. The Cronbachs value of IT competence scale and organizational policy scale is high this shows that both scales are highly reliable.

3.8 Data Analysis Techniques

The data was collected from 400 respondents in which 365 questionnaires was received out of 400. Whereas, 310 was properly filled and 55 was not so for analysis we take 310 and furthermore, 250 respondents which fill the data completely according to expectation of the desired results was analyzed on SPSS software. Following were the procedures performed for data analysis.

1. Complete filled questionnaire were used in data analysis other were discarded.

2. Each variables items were coded and coded items were used for data analysis.

3. To describe the frequency of sample characteristics, frequency tables were developed.

4. Mean of numerical values of each variable calculated for analysis.

5. Reliability analysis was conducted, cronbach alpha of each variable was calculated.

6. To identify strength of relationship between variables, correlation analysis was performed.

7. Regression analysis by Preacher and Hayes method was used to run mediation and moderation.

8. Hypothesis were tested with Preacher and Hayes methods in order to find out whether the hypothesis is accepted or rejected.

Chapter 4

Results

This chapter includes study and results of four variables, it includes frequency distribution, reliability, correlation and regression in order to find out the impact of IT competence on IT project success with mediating role of team coordination and moderating role of organizational policy.

4.1 Frequency Distribution

Frequency distribution, counts and summarizes the occurrence of different sample characteristics in a data, for this purpose SPSS software is used. Frequency of various demographics has been shown in following distribution tables.

4.1.1 Age

Age is an important part of demographics but some respondents feel hesitant to disclose their age. So different ranges were designed which were analyzed on spss software. There were five different age ranges used in questionnaire to collect data regarding age. These age ranges are i.e. 18-25, 26-34, 35-44, 45-50 and above 50. Total number of respondents were 250 and most targeted people which are in range of 35-44, frequency was 35 and percentage was 30.

TABLE 4.1: Age Distribution

Age	Frequency	Percent
18-25	35	14
26-34	47	18.8
35-44	75	30
45-50	40	16
Above 50	53	21.2
Total	250	100

Table 4.1 shows the conformation of age groups in research sample. 14% of respondents age were in the range of 18-25, 18.8% of respondents age were 26-34 range, 30% of respondents age were in 35-44 range, 16% of respondents age were in the range of 45-50 and 21.2% of respondents age were in the range of 50 and above. The results show a high percentage of respondents age in 35-44 range.

4.1.2 Gender

Gender is also important part of demographics. Gender distributes population sample into male and female. It has been observed that the percentage of male respondents was higher than female because in software organizations mostly business managers are male and female are very low in range and if they exist they only work in higher authority such as manager, senior developer and member of board of director.

TABLE 4.2: Gender Distribution

Gender	Frequency	Percent
Male	211	84.4
Female	39	15.6
Total	250	100

As shown in table 4.2 gender conformation of the sample taken for the study in which 84.4% were male and 15.6% were female. This result represents a higher percentage of male because mostly in project based organization specially IT sector employees are male and there are very low female in the organization as i targeted mostly male they were easy to target and get feedback from them.

4.1.3   Qualification

Qualification is vital part of demographics like age and gender because education is important for success of any country. Five different type of degrees were mentioned in questionnaire in order to collect data regarding education.

TABLE 4.3: Qualification

Qualification	Frequency	Percent
Matric	19	7.6
Intermediate	14	5.6
Bachelors	143	57.2
Master	37	14.8
MS /M.Phil.	37	14.8
Total	250	100

Table 4.3 represents respondents qualification. Matric qualified were 7.6%, inter qualified were 5.6%, bachelor qualified were 57.2%, respondents holding a master qualification were 14.8% and MS/M.Phil. Qualified were 14.8%.The above table shows a higher percentage of master qualified respondents.

4.1.4   Total Experience

Total experience is total numbers of years employee worked in different organizations. Work experience increases individual knowledge and creativity so thats why it is important part of demographics. There were five different ranges were used to collect data of employee tenure, these years ranges made convenient for employees to choose work experience.

TABLE 4.4: Qualification

Experience	Frequency	Percent
0-5	40	16
06-10	50	20
11-15	60	24
16-20	62	24.8
Above 20	38	15.2
Total	250	100

Table 4.4 shows the respondents experience at work. 16% respondents found to have a work experience in the range of (0-5), 20% of respondents experience was in the range of (6-10), 24% of respondents had a work experience in the range of (11-15), 24.8% of respondents had a work experience in the range of (16-20) and 15.2% of respondents had a work experience in the range of above 20.

4.2 Results for Hypothesized Variables

4.2.1 Descriptive Analysis

The process of descriptive statistics is performed to summarize the data in the form of a table and to calculate the standardized values of all variables. Generally descriptive statistics comprises of sample size, minimum value, maximum value, mean and standard deviation.

TABLE 4.5: Descriptive Analysis

Variables	N	Min	Max	Mean	SD
IT competence	250	1.43	5.00	3.5171	0.73207
Team coordination	250	1.75	4.75	3.3540	0.85034
Organizational policy	250	1.67	4.83	3.2947	0.74659
IT project success	250	1.67	5.00	3.4107	0.77184

Table 4.5 represent the mean value and standard deviation of the variables that are under study. The very first column shows all the variables (IT competence, team coordination, organizational policy and IT project success) used in this study which were rated on five-point Likert scale. The mean value represents the spirit of all responses. The mean value of IT competence which acts as an independent variable is 3.5171 and the value of standard deviation is 0.73207. The mean value of team coordination which act as a mediator between IT competence and IT project success is 3.3540 and the value of standard deviation .85034.The mean value of IT project success which acts as a dependent variable is 3.4107 and the value of standard deviation is .77184. Similarly the mean value of organizational

policy which acts as a moderator between IT competence and IT project success, reported a mean value of 3.2947and a standard deviation of 0.74659.

4.3   Correlation Analysis

Usually the purpose of conducting correlation analysis is to validate the association between variables selected for the study. Correlation analysis was used in this study with the aim to validate the proposed hypothesis by discovering the relationship between IT competence and IT project success, the mediating role team coordination and the moderating role of organizational policy. To have the knowledge about the degree of variation amid two variables and if the variables vary together at the same time or not, correlation analysis is conducted. Correlation analysis differs from regression analysis in a way that it does not involve association between two or more than two variables. Pearson correlation analysis is used to measure the strength of association between variables through a Pearson correlation range i.e. from -0.1 to 0.1. With the help of the extracted magnitude value we can draw the conclusion regarding the strength of relationship amid two variables and after judging the distance of correlation from zero we are able to generalize the magnitude value. The correlation can be interpreted in a way that if the correlation is distant from zero this suggests that two variables have a strong association. If the correlation value is zero this shows that the two variables do not have any association. Positive and negative signs are the representatives of the type of relationship. If the value shows a positive sign this means that increase in one variable leads to the increase in the other variable which represent a direct relationship. The case is opposite with the value showing a negative sign, this means that the increase in one variable leads to the decrease in other variable which represent an indirect relationship.

Correlation table 4.6 given below indicates that there is a significant and positive association among IT competence and IT project success, where r = .629** at P 0.01. It Can be seen from the table given above that IT competence shows a positive relations with organizational policy, where r = .675** at P 0.01. It was

seen that at r = .659** at P< 0.01, IT competence has a significant relation with the team coordination.

TABLE 4.6: Correlation Analysis

Variable	1	2	3	4
IT competence	1			
Team coordination	.659**	1		
Organizational policy	675**	.551**	1	
IT project success	.629**	.707**	.641**	1

P < .001***, p < 0.05**, p < .01

The above correlation table indicates that the association among IT project success and organizational policy is a positive and significant, where r = .641** at p < 0.01. Above results represent that association among IT project success and team coordination are positive and significant relationship between where r = .707** at p < 0.01. It can be seen in results; team coordination has a positive and significant relationship with organizational policy where r = .551** at p < 0.01.

4.4   Regression Analysis

Regression analysis is used to estimate the relationship among variables. It involve different techniques to analyze the independent and dependent variable (simple regression). This analysis tells the predictions about dependent variable (Y) from values of independent variable (X) and it also helps to make decisions about dependency of one variable on another variable.

Table 4.7 represents that there is positive impact of IT competence on IT project success as regression coefficient B= 0.3034 t= 5.0513 p=.000, no zero lies between upper and lower limit of bootstrapped 95% confidence interval. Bootstrapped is a technique use to estimate variance and it relies on random sampling with replacement from observations (Mooney & Duvall, 1993). So results shows that there is positive impact of IT competence on team coordination, hence H1 is accepted. Above table evidenced that IT competence has direct positive relationship with team coordination so results of this relationship identifies that B=.7656 t=.0555

and p= 0.000, no zero lies in upper and lower limit of confidence interval Thus, the hypothesis tells that there is positive impact of IT competence on team coordination, so it is evaluated that hypothesis H2 is also accepted. The result shown in table 4.7 shows that team coordination has significant relationship with IT project success as it is evident that B=.4695 t=.0517 p=.000. Therefore, the hypothesis H3 i.e. "There is positive impact of team coordination on IT project success" is accepted. It can be interpreted from the table 4.7 that team coordination mediate the relationship between IT competence and IT project success, as the indirect effect of IT competence X on IT project success Y such as upper and lower limit contains no zero value. Bootstrapped 95% of CI lower limit value is 0.2586 and upper limit value is 0.4662. It can be interpreted from the table 4.7 that team coordination mediate the relationship between IT competence and IT project success, as the indirect effect of IT competence X on IT project success Y such as upper and lower limit contains no zero value. Bootstrapped 95% of CI lower limit value is 0.2586 and upper limit value is 0.4662. From the obtained results it is concluded that H4 is significant and supported.

TABLE 4.7: Regression Analysis

	β	Se	t	p
IT Competence ⟶ IT Project Success	.3034	.0601	5.0513	.000
IT Competence ⟶ Team Coordination	.7656	.0555	13.8009	.000
Team Coordination ⟶ IT Project Success	.4695	.0517	9.0800	.000
	LL 95%CI	**UL 95%CI**		
Bootstrap for Indirect Results	.2586	.4662		

TABLE 4.8: The moderating effect of organizational policy

	β	Se	t	p
Constant	1.5731	.7071	2.2248	.0270
ITC	.1467	.1972	.7440	.4576
OP	.1101	.2499	.4405	.6599
Int term ⟶ ITPS	.0802	.0642	1.2501	.2125
	LL95%CI	-.0462	**UL95%CI**	.2066

From the above table 4.8 the results indicates that H5 i.e. organizational policy does not moderates the association among IT competence and IT project success such that it weak the relationship and effect the significance and get rejected as B=0.0802 and p =.2125 and it contain zero in the bootstrapped 95% of confidence interval as its lower limit is -.0462 and upper limit is 0.2066 hence H5 is rejected.

4.5 Summary of Accepted/ Rejected Hypothesis

Table 4.9: Hypothesis Summarized Results

Hypothesis	Statement	Result
H1	IT competence has positive impact om IT project success.	**Supported**
H2	IT competence has positive impact On Team coordination.	**Supported**
H3	Team coordination has positive impact on IT project success.	**Supported**
H4	Team coordination Mediate the relationship between IT competence and IT project success.	**Supported**
H5	Organizational policy moderate the relationship between IT competence and IT project success.	**Not Supported**

Chapter 5

Discussion and Conclusion

5.1 Introduction

This chapter includes discussion related to the result of hypothesis, practical and theoretical implication, strength and weakness, future direction and conclusion on the basis of current study. These results help to accept or reject the hypothesis according to their justification. The purpose of this study was to examine the relationship among the business managers IT competence on IT project success by having team coordination as a mediator and organizational policy as a moderator in the IT industry in context of Pakistan.

5.2 Discussion

This study suggest that the IT competence has a significant impact on IT project success which means that if the competence level of the business manager is high, the success rate of the project increase. Also a positive association has been found between the IT competence and team coordination. Hence H1, H2, H3 are accepted since a positive association occurs among team coordination and project success has been found such that project success improves with better team coordination which can be achieved by the high competency of the business manager.

Likewise, team coordination plays mediating role between IT competence and IT project success, therefore the fourth hypothesis H4 has also been accepted. Furthermore, hypothesis H5 has been found that organizational policy turns out to be the insignificant moderator and have negative impact on the relationship between IT competence and IT project success.

5.2.1   IT Competence and IT Project Success

Hypothesis H1: There is a positive impact of IT competence on IT project success.

The hypothesis H1 got accepted because the results shows the significant relation (B=.3034, t=5.0513, p=.000), the t value in result indicates that there is a significant relationship because the t value is higher than 2. Therefore, t value of 5.0513 indicates a positively significant relationship between IT competence and IT project success. The B co-ecient of .3034 approximately 0.30 indicates that there is a probability that project success will increase by 30% if there is a change of one unit in IT competence.

As results suggest that IT competence significantly predicts IT project success. There are different studies which support this relationship for example, L.Crawford (2012) suggest that IT competence has a significant influence on IT project success in the IT industry as it enhance project team performance and satisfaction that leads to efficient execution of a successful project. Thus, the literature supports that there exists a positively significant relationship between project managers perceived project success and his IT skills which indicates that project managers confidence on his IT competence abilities which leads to project success.

Project success cannot only be achieved by executing project under budget, on time but by practicing IT competence under the influence of IT skills and IT knowledge practiced by project manager under the organization management and project team (R.Muller & Turner, 2010). Projects team consisting of highly skilled IT professionals are able to get frequent positive results which leads to the accomplishment of project success (Nahod & Radujkovic, 2013).

It is likely that the reason for the acceptance of this hypothesis is that project is complex in nature thats why they require project manager or team leader attention who plays a vital role in achieving project goals and achieving project success. In projects, team members are in need of constant guidance of team head to perform project tasks on time, under budget and under available resources which are the part of factors that lead to project success (LynnCrawford & Nahmias, 2015).

According to Serrador (2015) project success is affected by poor IT competence of business manager varied abilities which are ethically managing resources, team work and effective communication with team members. Therefore, the contribution of team coordination and participation from the top management can influence and enhance the moral of employees, it allows employees to express their creative ideas and involve in decision making which helps in bringing creativity in projects and allow employee to perform project tasks efficiently and effectively.

The data collected from IT sector in Pakistan shows that high IT competence of the business manager is considered as an important factor that contributes towards achieving project success. Therefore, these finding will contribute in increasing the knowledge of IT sector regarding the importance of IT project success. IT competence will allow project managers and employees in IT sector to look for any unethical activity that may cause delay in project activities and hinders the way to project success. With high IT competence the manager know the clear and concise plan what the organization want to do and where they want to move on, employees will be motivated to express their creative ideas and opinions regarding projects which enhance the uniqueness in projects being carried out in Pakistan (McHenry, 2011).

5.2.2   IT Competence and Team Coordination

Hypothesis H2 assumed that there is a positive impact of IT competence on team coordination and the results (B= 0.7656, t= 13.8009, P= .000) of the hypothesis also underline the presence of significant relationship. The co-efficient turned out

to be 0.76 which shows that if there is a one unit change in IT competence then there is a likelihood that team coordination would be increased by 76.

Many studies supported this relationship such as high IT competence of the business manager will have better coordination with the employees of the organization and in result they will have high project success rate and they motivate the employees working in a team by better coordinating with them. Whereas conflict between the top management and non-managerial employees are due to the bad management of the top management simply low IT competence level at work which are intensified that results to increase in turnover, stress, absence and poor performance (Ying, Jia, Du, & Wang, 2018).

Probable reason for acceptance of this hypothesis is, if high IT competence such as IT skills and IT knowledge occur between team members or team leader and team members then it can lead to high productivity of IT products such as softwares and apps when managers or supervisors and team leader work in a collaborative way. As results calculated from collected sample indicate that Pakistans software organizations are facing issues when the business manager lack IT competence and they have very low project success rate. Therefore, this study findings will help to create a program about how to boost up the competence level of the business manager and how to avoid and cope conflict relationship between team leader and the IT developers. Avoidance of conflict relationship and managing the competence level will help employee to implement their ideas and increase productivity to his/her organization and would like to stay with the organization for a longer period. Team communication is the important part of team coordination and is essential for both team performance and effective team situation awareness. Team coordination enables team members to collect information linked to the surroundings and situational factors which could brunt the nature and get load off from the team tasks (Fussell, et al., 2014). In the light of literature, studies have agreed with ultimately positive influence of coordination on successfully completing the software project as working effectively on a in teams develops some innovative skills, removing the blockade of coordination gap, distributing the work load and adopting professional behavior which improve credibility and become factors of

project success in IT world (Espinosa, A.Slaughter, E.Kraut, & Herbsleb, 2014). Thus with the help from data and previous researchers confirms that team communication a vital role in development of software projects.

5.2.3 Team Coordination and IT Project Success

Hypothesis H3 assumed that there is a positive impact of Team coordination on IT project success and the results (B= 0.4695, t= 9.0800, P= .0000) of the hypothesis also underline the presence of significant relationship. The co-efficient turned out to be 0.4695 approximately 0.46, which shows that if there is a one unit change in IT competence then there is a likelihood that team coordination would be increased by 46.

The main reason for acceptance of this hypothesis is, the most important factor that can never be neglected in project management is successful execution of IT projects in the field of IT industry which can determine project success that revealed the IT competence level and Employee satisfaction towards their work (Hahn, Moon, & Zhang, 2012). Efficiency and functionality are the objectives of each organization. The key factor to achieve high success rates in team coordination to achieve a high level of performance. Generally, when people are aware of their working environment, people work hard and rely heavily on people with total productivity (Nofera, Korkmaz, & Miller, 2011), as results calculated from collected sample indicate that Pakistans software organizations are facing issues of lack Team coordination and communication among the employees and the top management . Therefore, this study findings will help to create awareness about team coordination and how to avoid and coordination with co-workers in an organization to get the project success and decrease the relationship conflicts (Waheed & Molla, 2004). Lack of team coordination among employees and managers in an organization cause conflicts in relationship and will make employee to become disloyal to his/her organization and would not like to stay with the organization for a longer and may cause damage to organization in there working projects (Jalil & Hanif, 2009).

5.2.4 Team Coordination Mediate the Relationship Between IT Competence and IT Project Success

Hypothesis H4 also show significant results, team coordination mediate the relationship between IT competence and IT project success because the indirect effect of X on Y upper and lower limits doesn't contain zero. Bootstrapped 95% of confidence interval lower limit value is 0.2586 and upper limit value is 0.4662 .On basis of results it is concluded that H4 is significant.

Though there are many research study being conducted on mediating role of team coordination. IT Competence of the business manager is the key important skill that every manager must acquire, in a project based organization or IT industry and Team coordination have access to improve the success rate of project which are in execution stage in an organization. Team coordination enhances use of IT competence of business manager by adopting best practices of team collaboration and team communication leading to improved organizational performance by having better team coordination (Desanctis & M.Jackson, 2011). Therefore, it is also evident from the results that in Pakistan in context of project based IT competence simulate IT project success through better team coordination. A general understanding of coordination is to operate, reliance in resources or technology (hu & Kapucu, 2016). There are several processes that can be applied for coordination and coordination through various methods (Albers, 2016).

The amount of IT skill and IT knowledge required to build a thing should be properly communicated to the team so that they could float the right software needed in the market. Mostly it is seen that 90 percent of the IT knowledge in an organization is tacit. For sustainability and sensation, team coordination becomes a vital gazette for the success of the companies, as its importance is being highlighted in other industries as well it is equally important in software industry (Niazi, et al., 2016).

It is a vital gazette for successful IT project implementation. So for lasting longer in the industry and constantly appearing as the top project management companies team coordination should be properly focused. If there is a Lack of team

coordination and communication between the worker than it would be difficult to complete the project on time under the estimated budget and with all assumed qualities that a smart it product should have in it (Khan & Khan, 2014).

5.2.5 Organizational Policy Moderates IT Competence and IT Project Success

Hypothesis H5: Organizational policy moderate the relationship between IT competence and IT project success.

Organizational policy doesn't moderates the relationship between IT competence and IT project success such that it weak the relationship. Moderating variable of this study is not supported as B=.0802, t=1.2501 and P=.2125 and there is a zero in the 95% of the confidence interval as the lower limit is -0.0462 and upper limit is 0.2066 whereas B coefficient means that one unit change in organizational policy will weak 8% the relationship of IT competence and It project success. Hence results indicates that the relationship of organizational policy with IT competence and IT project success is insignificant.

Though it is evident from the past studies that organizational policy plays an important role in improving organizational performance which increase the success rate of the IT project. Lfinedo and Nahar (2009) stated that organizational policy has a direct impact on innovativeness that improves organizational Performance. It is evident from the study of T, et al. (2018) that organizational policy and IT competence of the business manager are important asset of an organization that contribute to organizational performance provided employee competence and knowledge are utilized and developed regularly. However, studies suggest that other dimensions of IC that is human, structure and relationship capital have positive correlation with organizational performance. According to Yu, Xiao, and Bo (2018) organizational policy is having three broad dimensions that is managing intellectual capital, managing organization resources, organization workloads and Since this study only took one dimension of organizational policy for analysis, this serves as one of the reasons that it lead to the rejection of hypothesis. Also

when taking Pakistani organizational context into consideration, it is observed that when there is a highly experienced and knowledgeable employee in an organization and also the organization is heavily found dependent on that one or few persons holding such high IT competencies, wave of power loss prevails there. Such highly skilled employees does not feel comfortable sharing knowledge and experience with the fellow colleagues (Berkane, 2017). Another aspect is also that if the business manager in the organization make best use of organizational policy and manage organizational culture like friendly environment, then it will ultimately maximize the value of organizational policy overall. To make strong policies for the organization it is necessary for the higher authority to implement organizational procedure and processes and should engage team members for better achievement of desire results. It will work best when it is smashed with IT competence which means that when there will be strong organizational culture where employees follow set of mechanisms, policies and procedures of the organization for creating innovative ideas, creating new knowledge and there are also well established advanced information systems. According to Kim, Lee, and Cho (2016), deploying such advance technological systems in organizations breaks the barrier of communication and Coordination, IT knowledge and IT skills, this leads to exploring and development of new ideas and knowledge which leads to improvement of organizational performance.

However, in order to achieve the significant results common method bias is a likely explanation for our moderation results, given that all the analysis are based on data collected at one time point and from same sources (Malhotra, Kim, & Patil, 2012). Another explanation can be that all data collected from one sector can give different results as compared to other sectors, in our research data is collected from IT sector, if we collect data outside software organization may be it will lead to acceptance of moderation hypothesis because generalizability often give more significant results.

Prior these variables have been studied in organizations other than project based organizations therefore the results also suggest that they must be studied by including the other dimensions of organizational policy in context of project based

organization in Pakistan (Ahsan, 2016).

5.3   Practical and Theoretical Implication

This study has contributed in literature where the exploration of variables like IT competence, organizational policy and project success had been directed (Saglietto, 2016). The current study has made specific contributions to the project management domain of IT management. This is very important contribution to literature since prior no such research outlining the impact of business manager IT competence on IT project success has been conducted in Pakistani context.

The study has brought together the significant aspects of team coordination towards the past literature by analyzing its mediating role between IT competence and IT project success. The findings of the study are practically relevant since the direct relationship between IT competence and IT project success is equally important to the researchers and the practitioners. Furthermore, the findings of the study also illustrate the indirect importance of team coordination and the direct impact on IT project success.

The study provide information and suggest recommendations to the top management and the project managers in the way to increase and enhance performance of the projects, adoption and deployment of the best practices of the IT skills and IT knowledge should be made compulsory in the project based organization specially in IT industry. The working environment for the team coordination, team communication and core competencies of the business manager should be encourage and manager should organize and monitor the mechanism that enable the organization to learn, change and adapt to account for the achievement of new IT skills and IT knowledge whereby paying emphasis on better team coordination. The study provides the information and suggest recommendations to the top management of organization and the project manager. Moreover, one of the components of organizational policy that is organizational culture being studied suggested that it insignificantly moderates the association among IT competence and IT project

success which recommends that though competence and capabilities of the employees are very crucial for any kind of projects. However, when a project based organization has competent and skillful personnel in place, it should also have proper mechanisms and structures in place to educate its employees, because organizational policy and organizational structure together contribute significantly to improve projects performance. Organizational policy and IT competence of the business manager are considered to be the most valuable asset of an organization and the managers should to realize it more and pay emphasis on it as these define the potential future and long term viability of the organization in context of performance and success.

There are certain limitations in this study which happened mainly due to inadequate resources and time restraints. Medium size sample was selected due to time and cost constraints. Also the study is directed only to the project based organizations of Pakistan and the results may not be generalized to other sectors. Another limiting factor that since the questionnaire was dyadic and it was supposed to be collected from business managers and the team working under the business managers. The contact with the relevant team worker was real challenge.

Moreover, it was practically not possible to examine all the components of intellectual capital hence only human capital was selected for the study. As, it is defined after research that with respect to past studies some of the results are not according to expectations and literature, mainly due to high power distance culture, results can not apply to a non-Pakistani context.

5.4   Future Research Direction

The research on project manager IT competence and IT projects needs more attention of scholars, since the recent research has been done with the focus on project based organizations only, this actually gives a way forward to the researchers to study and duplicate the model both (public and private) other than project based in an organization in order to check the impact with a define sample size.

Furthermore, organizational policy clubbed with other dimensions of organization structure that is organizational capital which includes organizational culture, organizational procedures, advanced technological systems & organizational learnings and organization performance including stakeholders performance should be studied to further explore the influence of combined dimensions of organizational policy on the relationship between IT competence and IT project success.

Future researchers focuses on results and significance of the study to link IT competence to various other variables for instance creativity and innovation. As in this research team coordination was analyzed as a mediating variable which get very low support from the literature point of view, researchers can explore what other variables can use as a mediator and moderator relationship.

5.5   Conclusion

This study has made an attempt to assess the relationship between business manager IT competence and IT project success in project based organizations of Pakistan especially in IT industry. Data was collected from project based organizations (Jab Solutions, Abacus consulting, Jolta Technology, TMR Consulting limited, Oval-fox, Web smart, Sandbox) of Pakistan through a questionnaire survey to measure the extent to which IT competence impacts IT project success with mediating role of team coordination and moderating role of organizational policy (organizational structure).

Altogether 400 questionnaires were distributed however, only 250 valid responses were used for analysis since these questionnaires were having the most accurate and absolute data required for implementing the investigation of this research. The suitable validity and reliability of the model variable and fit of the model were stated in statistical test.

The proposed hypothesis are also supported through resource based view theory. The results of the study are also in line with resource based view which illustrates final output in the presence of available resources. According to which interaction and communication between the individuals and the organizational units

contributes to creation and advancement of IT skills and IT knowledge. Team coordination takes place when there is an exchange of information or experience between individuals and teams. Likewise the results also align with resource based view theory which also underlines the take for understanding and explaining the creation of organizational policy in an organization, however the hypothesis that organizational policy moderates the relationship between IT competence of the business manager and IT project success in project based organizations of Pakistan is not accepted which is possibly due to the fact that the only one dimension was studied and also due to the cultural context.

The research has given a general aspect that the impact of team coordination will mediate the relationship among IT competence and IT project success in project based organization of Pakistan.

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Appendix-A

Research-Questionnaire (Business Manager's)

Dear respondent,

I am MS Scholar at Capital University of Science and Technology, conducting research on 'Impact of IT Competence on IT Project Success with the mediating role of Team Coordination and moderating role of Organizational Policy for the completion of my research thesis. The specic objectives of the study are to; explore the relationship between IT competence and IT project success through team coordination. Examine the moderating eect of organizational policy on the relationship of IT competence and IT project success. Test empirically and establish the proposed relationships in the developmental projects of Pakistan. In this regard, you are requested to ll the following questionnaire, please note down that your identity as respondent is concealed. You can freely express whatever the ground realities you see and face. All the information obtained for this research will be used only for academic purposes. Thank you very much. Your active contribution is the real strength of this research study.

Regards

Kamal Ahmed

Section 1: Demographics

Please follow the instructions while filling the survey

Select your gender first

1 for male and 2 for female.

	1	2
Gender	Male	Female

Select your Age from the given table below.

If your age is between 18-25 then tick option 1, if it lies between 26-34 then select 2, if it lies between 35-44 then select 3, if it lies between 45-49 then select 4, if it range to 50 and above then select 5.

	1	2	3	4	5
Age	18-25	26-34	35-44	45-49	50 and above

Select your Qualification from the given table below.

If your qualification is matric then tick option 1, if your qualification is intermediate then select 2, if your qualification is Bachelors, then select 3, if your qualification is Masters then select 4, if qualification is MS/MPhil then select 5, if your qualification is PhD then select 6.

	1	2	3	4	5	6
Qualification	matric	Intermediate	Bachelor	Master	MS/MPhil	PhD

Select your Experience from the given table below.

Select 1 if you have job experience range from 0-5, select 2 if you have job experience range from 6-10, select 3 if you have job experience range from 11-15, select 4 if you have job experience range from 16-20 and select 5 if you have job experience above 20.

	1	2	3	4	5
Experience	0-5	06-10	11-15	16-20	Above 20

Section 2: IT Competence

Please read carefully before selecting the options, for selection tick (✓) mark is allowed only.

Before filling the survey please read the following instructions.

5 point Likert scale was used for analysis, where 1 is for strongly disagree, 2 is for disagree, 3 is for neutral, 4 is for agree and 5 is used for strongly agree.

Strongly disagree: 1, Disagree: 2, Neutral: 3, Agree: 4, strongly agree: 5

1	The extent of use of IT including the Internet and World Wide Web in: Providing necessary information to customers	1	2	3	4	5
2	The extent of use of IT including the Internet and World Wide Web in: Identifying groups of customers whose needs are not being met.	1	2	3	4	5
3	The extent of use of IT including the Internet and World Wide Web in: Determining customers requirements.	1	2	3	4	5
4	The extent of use of IT including the Internet and World Wide Web in: Tailoring the products and services to match customers needs.	1	2	3	4	5
5	The extent of use of IT including the Internet and World Wide Web in: Reengineering business processes.	1	2	3	4	5
6	The extent of use of IT including the Internet and World Wide Web in: Enhancing business process flexibility	1	2	3	4	5
7	The extent of use of IT including the Internet and World Wide Web in: Integrating the firms	1	2	3	4	5

	supply chain					
8	The extent of use of IT including the Internet and World Wide Web in: Integrating internal business unit	1	2	3	4	5
9	The extent of use of IT including the Internet and World Wide Web in: activities Increasing the speed of logistics	1	2	3	4	5
10	The extent of use of IT including the Internet and World Wide Web in: Developing new products/services.	1	2	3	4	5
11	The extent of use of IT including the Internet and World Wide Web in: development Improving the speed of product	1	2	3	4	5
12	The extent of use of IT including the Internet and World Wide Web in: Increasing the speed of products/service delivery.	1	2	3	4	5
13	The extent of use of IT including the Internet and World Wide Web in: Increasing the speed of responding to business opportunities/threats.	1	2	3	4	5
14	The extent of use of IT including the Internet and World Wide Web in: Identifying new market segments.	1	2	3	4	5
15	The extent of use of IT including the Internet and World Wide Web in: Redefining the scope of our business.	1	2	3	4	5
16	The extent of use of IT including the Internet and World Wide Web in: Entering new markets.	1	2	3	4	5

Section 3: Team Coordination

Please read carefully before selecting the options, for selection tick (✓)mark is allowed only.

Before filling the survey please read the following instructions.

5 point Likert scale was used for analysis, where 1 is for strongly disagree, 2 is for disagree, 3 is for neutral, 4 is for agree and 5 is used for strongly agree.

Strongly disagree: 1, Disagree: 2, Neutral: 3, Agree: 4, strongly agree: 5

1	Our team meetings are well organized.	1	2	3	4	5
2	We have a difficult time reaching decisions.	1	2	3	4	5
3	We often do not know who is responsible for important tasks.	1	2	3	4	5
4	Team members anticipate what they will need from me and tell me so I can plan ahead.	1	2	3	4	5

Section 4: Organizational Policy

Please read carefully before selecting the options, for selection tick (✓)mark is allowed only.

Before filling the survey please read the following instructions.

5 point Likert scale was used for analysis, where 1 is for strongly disagree, 2 is for disagree, 3 is for neutral, 4 is for agree and 5 is used for strongly agree.

Strongly disagree: 1, Disagree: 2, Neutral: 3, Agree: 4, strongly agree: 5

1	How often do you. Willingly follow company policies.	1	2	3	4	5
2	How often do you. Follow organizational policies even when you do not need to do so because no one will know whether you did or not.	1	2	3	4	5
3	How often do you. Voluntarily follow organizational rules and policies concerning how to do your job.	1	2	3	4	5

4	How often do you. Willingly defer to your supervisors judgments about your work load.	1	2	3	4	5
5	How often do you. Willingly defer to your supervisors judgments about your job responsibilities.	1	2	3	4	5
6	How often do you. Willingly defer to your supervisors decisions about work deadlines.	1	2	3	4	5

Section 5: IT Project Success

Please read carefully before selecting the options, for selection tick ($\checkmark$)mark is allowed only.

Before filling the survey please read the following instructions.

5 point Likert scale was used for analysis, where 1 is for strongly disagree, 2 is for disagree, 3 is for neutral, 4 is for agree and 5 is used for strongly agree.

Strongly disagree: 1, Disagree: 2, Neutral: 3, Agree: 4, Strongly agree: 5

1	Projects delayed due to design or implementation problems.	1	2	3	4	5
2	Completed projects are successful in meeting their design objectives.	1	2	3	4	5
3	After projects are implemented, it is apparent that an alternative design could have better served the user.	1	2	3	4	5
4	After projects are implemented, major reprogramming efforts necessary to improve processing efficiency.	1	2	3	4	5
5	New systems designed and implemented in a manner which enhances the credibility of the systems organization.	1	2	3	4	5
6	Newly developed systems work the way the user expects them from.	1	2	3	4	5