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**Impact of Social Media on  
Project Success with Mediating  
Role of Project Communication  
and Moderating Role of  
Technology Orientation**

by

Raja Shahbaz Ali

A thesis submitted in partial fulfillment for the  
degree of Master of Science in Project Management

in the

Faculty of Management & Social Sciences  
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*The thesis is dedicated to my first Love, My Lord, Allah, who always be-stowed and showered endless bounties on me. My great teacher and messenger of Allah, Muhammad (Peace Be Upon Him), who enlightened us the purpose of life. To my ever-loving Parent, fellows and my family. I am sincerely thankful from the core of my heart, to so many people, who directly and indirectly were the source of encouragement during my thesis work. My special thanks to no one but to my supervisor Dr. Ishfaq Khan unequivocally, not only for the remarkable academic support, but also for showing me multiple dimensions of the thesis work. Alike, wholehearted thanks for my family, since they have been an extraordinary supportive. I am particularly grateful to my supervisor for his consistent support and faith in my hard work, and for his support this would not have been possible for me to achieve this milestone. I dedicated this thesis to them.*



## CERTIFICATE OF APPROVAL

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## *Abstract*

The purpose of the current study is to explore the impact of social media on project success with mediating role of project communication and moderating role of technology orientation. The study also examines the mediating role of project communication between social media and project success in the presence of moderator (technology orientation). Based on the deductive approach, cross-sectional research is designed. To access the respondents, non-probability convenience snow ball technique was used to collected data from 463 managers and project managers of IT companies and call centers registered in Pakistan Software Export Board, Islamabad. Preacher and Hayes' Model 7 is used to statistically examine the moderated mediation in the proposed theoretical framework. The results revealed that social media has positive and significant impact (direct effect) on project success. Further, indirect effect of project communication which positively, significantly, and partially mediates the relationship between social media and project success in the presence of moderator. Then, current study explore to what extent technological orientation moderates the association between social media and project communication such that it strengthens the said linkage. Finely, moderated mediated is tested in which technological orientation moderates the mediating effect of project communication positively and significantly between the social media and project success. The current study is supported by the development communication theory which reflect the essence of communication between the project stakeholder for project success. The current study extends the theoretical body of knowledge related to social media, project communication and project success along with technological orientation. Further, it suggests managers to enhance the project communication while using technology to make the project successful. It is also fruitful for managers, practitioners, and policy makers at workplace. The implications are followed by the limitations, future directions and conclusion.

**Keywords: Social Media Usage, Project Communication, Technological Orientation, Project Success.**



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# Abbreviations

<b>Acronym</b>	<b>What (it) Stands For</b>
<b>DV</b>	Dependent Variable
<b>IV</b>	Independent Variable
<b>M</b>	Mediator
<b>PC</b>	Project Communication
<b>PS</b>	Project Success
<b>SM</b>	Social Media
<b>TO</b>	Technological Orientation
<b>W</b>	Moderator

# Chapter 1

## Introduction

### 1.1 Theoretical Background

Project Management is a way of pushing efforts of a group/team in order to achieve objectives of the project within provided instructions. A project can be a temporary effort done to deliver a inquiringly thing, benefit, or outcome with a clear beginning and conclusion (like a show which has time constraints, finances and staffing) in order to meet certain, closer to target, benefits ([Salman, 2021](#)). Project Management is a starting point or discipline for organizations and businesses to find ways of productivity within the projects and it's becoming a challenging concern for organizations to make projects effective ([Ika, 2018](#)). The concept of Project Management has been changed from the basic cost, time and scope to something that includes different components in order for a project to be productive. Project success and project management success must be distinguished in order to assist businesses in determining success ([Hefley, 2021](#)). The degree to which the project's objectives are achieved can be used to determine the efficacy of a project, with the deliverable being evaluated in terms of benefits and stakeholder satisfaction. The degree of efficiency the project acquires to link up its goals is what defines project management success. Efficiency is the technique of project limited resources to overcome its objectives its objectives and cultivate positive connections with internal and external stakeholders ([Irfan, 2019](#)).

Alternatively, a project may succeed in reaching the development objectives while

failing to achieve the financial plan, schedule, and opportunity. Likewise, a project may succeed in meeting the financial plan, schedule, and opportunity while failing to meet the ultimate development objectives. When a project falls short of its development goals, it fails in the worst possible way ([Alasfour, 2021](#)).

Project management is a key aptitude supported by an environment that fosters learning, and organizations to meet the criteria of success are characterized by the use and application of a consistent, repeatable, and predictable methodology that supports the planning and implementation of development projects. The construction project is described as a complex sequence of activities to achieve settled objectives, a complex system of uncertainties, moreover a significant number of associated and connected factors, different organizational units, and a variety of people([Atkinson, 2020](#)). The uniqueness, temporary nature, and progressive development of construction projects are three characteristics that set them apart from ordinary activities. A project should be planned, carried out, and controlled because it is carried out by people and is restricted by resources. One of the first to offer a descriptive definition of a project that goes beyond the limitations of a project being a static assignment. In accordance with his definition, a project is "an organizational unit dedicated to the attainment of a goal, generally the successful completion of a development product on schedule, within budget, and in compliance with set performance standards." Similar to this, project is defined as a series of connected tasks carried out within a given budget and time frame to fulfil a specific purpose. Others provide a straightforward explanation of project. An understanding of how to achieve performance, budget, and schedule as well as a quondam multitask job with performance, time, and cost is the definition that considers resources.

A sophisticated attempt to achieve particular objectives and a planned series of activities that fulfil defined goals and results are two further definitions that include having objectives. Another description is a task that is complicated, time-restricted, novel, fleeting, and requires knowledge, skills, and abilities to meet client needs([Davis, 2018](#)). By completing the project's primary goals and satisfying the needs of the client, the success of the project is determined. However, in order to get the best project success, the iron trilogy of cost, patch, and quality is the

basis for measuring the success of project management. According to De Wit and Baccarini (2020), each stage of a project's life cycle has a variety of factors that work together to influence or determine the project's success (Baccarini, 2020). It is crucial to divide the project into stages since certain aspects will have an impact on the outcome of the project depending on its stage. The project can be deemed successful if the project manager succeeds and the product receives positive feedback from customers. It is important to distinguish between "success criteria" and "success elements," two additional project management ideas. While success factors can be thought of as inputs that have a significant impact on a project's outcomes and need to be handled carefully, success criteria are a collection of principles that can be quantified to determine a project's success or failure.

However, it is crucial to have a clear explanation of success criteria and success elements because the phrases can be confused easily, leading to a misinterpretation of the actual goals and duties. In the majority of cases, specific contributing elements could also be utilized as a benchmark to assess the other set of criteria. Many academics emphasized the need to define these ideas, such as who showed how the qualities of a project might affect how the impact of a project's success criteria is felt the need to define project success criteria after taking into account input from important project stakeholders, this is not always the case (Shaukat, 2022). An inquiry on the practice of life cycle management through the process of community infrastructure development in Thailand in order to uncover success variables impacting infrastructure projects success. An analysis of life cycle management revealed a direct correlation between successful project completion and cycle project management. The main focus of studies on project success historically was the successful achievement of cost, schedule, and quality objectives (Atkinson, 2020). Recent studies have called for additional clarification regarding how to quantify project performance. The project is generally regarded as successful if the primary stakeholders are pleased with the end outcome and the original project specification is met.

There are several criteria should be used to gauge a project's performance in order to help the iron triangle meet the expectations of the client, particularly because projects today vary in size, distinctiveness, and complexity (Davis, 2018).



Other authors continue to use the time-cost-quality triangle with the aspect of scope included in the quality, despite challenging the project triangle and introducing what he calls the project Diamond. Numerous research investigations confirm that time-cost-quality are the three basic criteria, and that there may be more criteria, but they are secondary in nature. Every project will typically define its own success criteria or results based on time, cost, and quality limits. When the various project management tools and techniques are effectively used, according to this will result in cheaper costs, quicker delivery, and higher-quality projects. Project management did not become well-known as a method for managing projects. In order to undertake successful projects, project management has become a more and more important technique over time. The tried-and-true methods and technologies used in project management focus on the efficient completion of a project. Define the requirements for the task, allot the necessary resources, plan and carry out the work, and track and regulate progress and deviations are all responsibilities of project management. The client's objectives in terms of usefulness, function, quality, time, and cost are identified, and links between resources are established.

Project success linked it to the project manager's experience. Modern project management, on the other hand, emphasizes the iron triangle of time, cost, and quality as the combined criteria for project success (Davis, 2018). It became challenging to use time, budget, and quality as the only factors determining success once projects demanded a higher level of contact and technical support. However, perceived performance used to assess the success of a project. However, while there is agreement on how to monitor intangible assets, there is disagreement on how to measure project financial performance, hence He also refers to gauging project success against the project's overall objectives. The studies came to the conclusion that building and maintaining positive relationships with project stakeholders as well as effective communication with them may help with project management. Their study was titled "A retrospective look at our evolving understanding of project success". The effectiveness of management tools must be ensured, as well as a regular assessment of the project's goals.

The concept of interface management was created to address coordination

problems. Even though the general model of the project life cycle reflected the transient nature of projects and the need for practitioners to change their management emphasis as projects progress, the focus on the project life cycle led to a more function-based fragmented approach to the management of projects and adherence to the traditional view of managing time, cost, and quality (Muller, 2019). However, by using gap analysis with a focus on the overlap between project stages, project activities can be connected together to lessen project surprises and to enable effective management of client expectations. Addressed the requirement to maintain the 'line of visibility' and keep the client in mind throughout the project life cycle in order to retain project added values. The next stage after establishing a project communication strategy is to put it to use in transferring insights from where they are generated during the project management process to where they are analyzed and utilized by relevant people throughout the subsequent phase. In addition to serving the purpose for which it was designed, implementing a project management communication strategy reveals any weaknesses in your project management plan that may be delaying your project management requirements, allowing you to immediately address them (Fauzi, 2021). Without a thorough project communication plan, it is hard to keep all accountable parties informed of the project's changing condition. Lack of transparency ultimately leads to negative, ineffective decisions that will undermine the goals of the current endeavour. When effective communications are in place, it is simple to maintain transparency across all parts of project management in order to make the right decisions and complete projects quickly (Ali, 2020).

Communication with others is nowadays a crucial element of a businessperson's success and prospering. Although very few people are able to achieve great riches and success on their own without the aid of others, people now meet and collaborate both offline and online thanks to the success of social networking sites (SNS), such as Facebook, LinkedIn, Twitter, and many others that are rapidly growing. Social media platforms have drawn millions of users and are employed for a wide range of activities. Webster describes electronic communication as the exchange and distribution of knowledge, ideas, and private communications (Mughal, 2019). This is how people create online communities. The internet

represents the most successful technological revolution of the twenty-first century, and it has been developing quickly. As a result, the Internet's worldwide reach has drawn a lot of people from all over the world. For instance, approximately 3.2 billion people (or 44 percent of the world's population), according to International Data Corporation (IDC), will have access to the Internet in 2017. Online services known as social network sites allow users to register, establish a profile, and communicate with other users who have also registered on the same website (O'Daniel and Rosenstein, 2018). Users are able to observe, share, and connect with other users within that system thanks to this (Mohammed, 2019). Additionally, social networking websites that offer user-generated material encourage participation from users and offer a variety of ways for people to get involved with organisations. There are numerous ways to define success in business. One way to judge the success of an entrepreneurial venture is by looking at tangible indicators like income, profitability, growth, and sustainability. Using SNS could also affect the performance of the venture (Meng, 2018). Additionally, a statistics portal that displays data from 2010 to 2014 and makes projections through 2018 indicates that there would be roughly 2.13 billion social network users in 2017, a significant rise from the 1.4 billion members in 2012. Additionally, 118 minutes each day, on average, are spent on social media today. These figures show how popular social media platforms are all over the world and how crucial it is to comprehend user behaviour there in order to help business owners create plans that will enable them to establish a presence and engage with potential clients (Muller, 2018). A further study that was conducted more recently, in 2019, examined how social networking sites affect small businesses in under served areas. The following was discovered through the use of case study methodology, two surveys, and interviews with small business owners: Social networking platforms improved brand exposure, inquiries, and consumer relationships. It also promoted nearby businesses throughout the targeted area and allowed new clients to contact such firms. A study was conducted to determine the effect social networking sites have on young Jordanians between the ages of 18 and 24 in relation to their perceived significance. It has been demonstrated that these networks have changed how young people study, developed their abilities, and choose how to communicate

with others (Oetzel, 2018). This has the effect of enabling business people to reach the large majority of young people using social networks. Similar to this, it is investigated whether social networks offer any real value for companies. It was evident that social networks offer various advantages to business owners and organizations in general. This is because social networks enable business owners to customize their services and goods in response to consumer demands posted on those platforms. However, studies made it evident that business owners need to be able to use social media platforms correctly and effectively in order to subject their companies to significant profitability. In other words, the approach taken to using social network sites has a greater impact on a business' financial performance than the fact that it uses social networks at all.

Projects function as change agents because they are diverse, complex activity. They have a questionable performance background (especially IS projects). However, because of this complexity, it is challenging to develop a coherent viewpoint on the problem. Since empirical studies commonly use varying criteria of project success, comparing results can be challenging. The literature uses a range of terms to describe project success, including completion "on time, under budget, and to specification," success of the generated product, and success in accomplishing the project's commercial goals. Additionally, these measures are frequently disputed, making it challenging to assess whether there is indeed a problem. Another challenge is that, like quality, perspectives of success vary based on the stakeholder's perspective and the amount of time since project completion. Despite these challenges, answering the question of what exactly makes a project successful is essential to the development of project management research and the growth of the body of knowledge in this relatively new discipline (Driskell, 2018). Numerous studies have been conducted on project success, but instead of developing a uniform framework for determining if a project is successful, these studies have usually concentrated on identifying the elements that contribute to project success. With agility in project management, there should also be strong communication in order to boost motivation and chances for success. While all these concepts are clearly described, understanding the project failure causes is critical and there should be a clear definition to separate the success of the project

from its failure. There is another hindrance that prevents understanding commerce merits for project is the language gap. Use of frequently vague language in the project enhances the significance of project communication. Communication exists in discussions, conversations and interactions but there is a requirement in project management for the people to gather in order to know about their contributions and learning in the whole project period and what they have learnt from it. Success of Project depends on strong and regular communication in any project which maximizes success and keeping the risk to minimum. When there is a fruitful communication between project executive with his partners or subordinates, this makes way for new projects and enhances communication skills. For instance, the concept would be confusing for people if social media is used by a project executive in a working environment due to the fact that it is used casually in posting photos of one's beloved friends. On the other hand, it's also used in promoting and communicating project related data. Social media offers many different facilities that help boost the efficiency and chances of the project to be completed on time within defined budget. This helps in figuring out how social media can expand organization regarding commerce and its execution.

The process of communication is crucial in the field of project management. Although challenging to master, it is important to make an attempt to accomplish this goal. Project team members frequently believe that if communication had been better, difficult projects would have run more smoothly ([Mathieu, 2018](#)). As a result, one of the areas that needs the most improvement is communication. Expectations, goals, needs, resources, progress updates, budgets, and purchase requests must all be regularly communicated to all significant stakeholders in order to assure a project's success. Due to challenges specific to project management, project communication can frequently be more challenging. Since many projects are temporary in nature, project communication is also frequently transient. To prevent communication failures, project managers must communicate clearly from the start. Project managers use a variety of media to interact with one another. Communication of the project's management, including the flow of information into and out of the project, is one of the key components. In order to address project duties and the various forms of communication that will occur, there should

also be a simple and clear communication plan. It covers the procedures necessary to make sure that project information is generated, collected, distributed, stored, retrieved, and ultimately disposed of in a timely and suitable manner. There are various crucial elements of the project communication plan that should be taken into consideration (Culo, 2019).

Social Media improves the project by keeping all the individuals together and making it simpler for everyone on a group to be on the same page on the progress of project. Normally, when people think of social media, things like Twitter, Facebook and Instagram pops up into the head whereas it has professional and business benefits in the form of Due dates, records and advanced reports. But social media is more than that - anything that enable customers to make and communicate substance can be qualified as social media stage. One good example is Slack, that permits people or groups to chat right away within a huddle or chat. In a variety of business fields, including insurance, sales and marketing, healthcare, information technology, academia, and government, the advantages of adopting social media platforms have been studied. The use of SM is perceived as changing organizational processes particularly by enabling virtual teams. Over through the past ten years, the demand for existing research on virtual teams has steadily increased. It has been determined that task orientation, proper communication, and cohesive social dynamics are necessary for productive virtual teams.

Lack of communication among team members has been noted as one of a virtual project team's limitation. This has been ascribed to a number of elements, including leadership, cultural diversity, human relationships, and the usage of the right technological platforms. Reduced cycle times, higher customer expectations, and increased stakeholder pressure to improve project performance are all having an increasingly negative impact on the project team environment. The effective project management has become essential for firms to be sustainable. To stay competitive, project practitioners must continually innovate. The widespread consensus is that projects are social practices. Numerous academics have discovered that technology can increase project management' efficiency. When it comes to project management, 54.5 percent of firms use social media. The lack of widespread adoption, however, might be ascribed to security issues and the need

for training for staff members who are inexperienced with such tools, especially elderly staff members.

The study suggested that managers should incorporate new technologies like social media in order to be competitive and meet the expectations of potential clients. The more entrepreneurial oriented a corporation is, the better it will be able to compete in the market since it is more supportive of embracing new technology and actively adapting to changing trends. Organizations with a high level of technologies are more "likely" to encourage innovation, the adoption of new technologies, and experimentation. Additionally, the element of risk-taking plays a role in businesses' willingness to take part in creative projects with uncertain outcomes. Managers and staff members must exercise entrepreneurial behavior and be willing to embrace unpredictability when using social media, a new interactive technology. The development of the internet over time has been crucial to company performance, and social media is particularly important in this context in developing nations. According to studies, social media use is increasing in industrial markets with the intention of developing relationships and network growth that support both profits and innovation-related issues. According to studies, supply-chain participants can improve new product development by using social media. Information created by social media is useful for government and industry business performance policies in emerging nations. Businesses in developed nations are increasingly using social media, and this trend is also being seen in developing nations. Popularity and new trends in social media help businesses' online learning and information-sharing procedures, which are thought to be beneficial in attaining objectives and enhancing corporate performance.

People utilise these platforms to connect with one another, and well-known companies use them to market their goods. Real-world social interaction has become virtualized thanks to social networking platforms. Because of this, companies see social media platforms as crucial tools for controlling the internet market. Social media marketing is the technique of using social media to advertise products or events to potential customers online. Numerous companies have started figuring out the best ways to use community websites in order to forge lasting connections and open lines of communication with users in order to

foster warm and intimate relationships and build online brand communities. The current study examines the social media WhatsApp specifically WhatsApp because previous researches not study this variable as related with project success. So, this study will bring awareness to the project managers that how they use social media (WhatsApp) in their research which leads to increase project success. For the present research, the nature of projects is to generate sales which includes multiple campaigns of insurance policies i.e., medical benefits. The medium choose in this research for communication is social media (WhatsApp).

## 1.2 Research Gap and Present Study

Unfortunately, many of the project results still fail the concerned stakeholders which are not upto their desires. Therefore, the formation of Project Management Offices (PMOs) could help to lower project failure rate since many of the mistakes could be prevented with the right kind of experience with diverse range of people experienced same problem in the past. Organizations which contain PMOs, are more centered and visible. Most of the organizations utilize social media for communication purposes within the organization that resulted in favorable results for trade. During projects, Project Managers play an important role in incorporating social media (WhatsApp) into their projects to ensure strong and non-stop communication among the individuals.

Business Expertise has a transforming impact on Knowledge Management Processes which in turn influence the success of project with the help of Knowledge Worker Satisfaction acting as a medium either directly or indirectly. The studies have found that there is a connection of Knowledge Worker Satisfaction and Knowledge Management Processes with project success. Many researches in general has their focus on literature analysis regarding social media in the industry of Market, Management, Public Education and individuals as well. There are enough literature ([Shaukat, 2022](#)) found on project success with diversified constructs also there are many researchers ([Gunduz, 2020](#)) on project success and many variables are linked with this . Some are included as (project success – project monitoring, project success – transformational leadership, project success



– transitional leadership, project success – perceived cohesion, project success  
– knowledge sharing, project success – shared leadership, project success –  
psychological empowerment, project success – psychological safety, project success  
– inclusive leadership).

Enough work has been done by diversified constructs but rare work has been done on project communication, social media and project success (Muszynska, 2018). Similarly, likewise there are a lot of research from textual perspective. In our Pakistani culture, there is no research related to these variables, so aim of this research is to find the relationship between project success with other variables i.e. project communication, social media (WhatsApp), and technological orientation. These all variables are related to project success. Our major target area of organizations is IT companies call center in which many projects (campaigns) take place. As call centers have to work across different time zones and face difficulty in communication. For instance, platforms like LinkedIn, Messenger and Twitter are not always active so the main social media tool used in all this system is WhatsApp from which we can communicate easily and this media is easily approachable for everyone across different time zones as well. The technology which we use is common i.e., social media (WhatsApp) and this become the medium of our communication. In this way, all these variables lead to project success.

Therefore, current study will be conducted on to identify the moderating role of technology orientation on the relation between social media (WhatsApp) and project communication and mediating role of project communication on the relationship between social media (WhatsApp) on project success.

### **1.3 Problem Statement**

The projects in IT companies and Call center failed around world In the world. in Pakistan, several projects are also failed because of communication issues. Project communication practices not only have a positive impact over project success, but also influence medium of communication, which in turn is related to project

success. WhatsApp medium used for conveying the message to other stakeholder by the project managers. Furthermore, lack of technological orientation also also one of the major causes of project failure. The current study is being conducted in order to analyze the moderating role of technology orientation between social media and project communication, and mediating role of project communication on the relation between social media and project success. Hence; a complex theoretical framework with moderated mediated is required to explore. So, current study will explore this complex moderated mediated relationship to explain the project success

## 1.4 Research Questions

The present study intends to find out answers of the following questions by keeping in view the above-mentioned problem statement:

**Question 1:**

To what extent 'Social media ' influences the 'Project Success'?

**Question 2:**

To what extent project communication mediate the relationship between 'social media (WhatsApp) and 'Project Success' in the presence of moderator?

**Question 3:**

To what extent technology orientation moderates the relationship between social media and project success?

**Question 4:**

To what extent technology orientation moderates the mediation of project communication between the social media and project success?

## 1.5 Research Objectives

The project success is explained as an outcome of social media, project communication and technological orientation, the objectives of the current study

are to:

**Research Objective 1:**

find out the impact of social media (WhatsApp) on project success.

**Research Objective 2:**

find out the mediation role of project communication between the social media and project success in the presence of moderator.

**Research Objective 3:**

find out the moderating effect of technology orientation on the association of project success and project communication such that it strengthens the relationship.

**Research Objective 4:**

find out the effect moderated mediation in which technology orientation moderates the mediation of project communication between the social media and project success.

## 1.6 Significance of Research

Project-based organizations, where projects are viewed as tools to fulfil goals and objectives of an organization and to improve its performance, are a result of globalization's robust rise in technology and innovation. One of any project's ultimate goals is success. There are numerous studies that have determined the factors that influence a project's success. The association between technology inclination and project success hasn't been thoroughly investigated. By identifying additional elements that may affect project performance, the study aims to investigate the impact of technological orientation on project success. Theoretical, empirical, and practical implications all come with this research study. By evaluating the impact of technology orientation on project success in the cultural contexts of Pakistan, the current study addresses a research gap caused by the lack of studies that relate the disciplines of entrepreneurial and project management.

The research will theoretically close the gap between project success disciplines and the amount of information already available in the field of project success. Additionally, this study has identified the factors that contribute to project success and has created a research framework that modifies project communication support and technological orientation.

From a managerial perspective, the study offers suggestions for improving project success rates. Call center project managers ought to adopt a different method of project management. Their adoption of many elements that are essential to the projects' success will be made possible by such an insight. To increase project success, they should show a variety of diverse technological orientation features. In order to take advantage of market opportunities and incorporate project communication for successful project execution, management of the organisation should develop policies, adopt best business practices, and make strategies based on the best tangible and intangible resources available. This will increase project success rates and give the organisation a competitive advantage. Call center managers must now investigate innovative methods to comprehend project success and enhance project performance. Researchers were also directed to examine success factors in other economic sectors and industries to further validate current research models in this study. This will be the first study conducted in the context of project-based organizations in Pakistan. Additionally, with various projects in Pakistan, project managers will learn about social media, project communication, technological orientation, and its efficacy in call centers. It is essential that variables support project success should be recognized and understood well. In the past, there was a basic commitment to project success understanding and we acknowledge that many basic perspectives are sometimes disregarded to maintain a distance from what actually happened in the project context. Whatever the case is, the objective was to analyze the moderate effect of technology orientation on project communication and social media which eventual guarantees the chances of project success. Since it is inspected that successful communication and technological orientation are related to the project success, it is important to connect social media, project communication and technological orientation with project success.

## 1.7 Supporting Theory

The current study is got aligned with development communication theory. The main idea behind Development Communication Theory is media for development of people in a nation or to help the target population. The underlying fact behind the genesis of this theory was that there can be no development without communication. Communication seeks to serve the people without manipulation and encourage genuine response of communication from Shannon Weaver's Model of Communication (1949). This study is conducted to find the importance of communication through social media and technology orientation and making project a success. Hence the project managers should used the social media but should also develop communication soft skills to clearly communication the mission, objectives and share the knowledge to achieve the desired project success.

## 1.8 Definition of the Constructs

### Social Media Usage

The social media can be defined as "Social media maybe a collection of associate-confront, which allow users to produce and trade customer-oriented content via the internet." However, social media utilization takes into account the time which is fully spent on social interactive websites either at workplace or home ([Kaplan and Haenlein, 2012](#)).

### Technological Orientation

Technical orientation is defined as "the capacity and will of a firm to acquire considerable technological background and utilize it within the improvement of unused products ([Zhou, Yim, and Tse, 2005](#)).

### Project Communication

Communication plays dynamic part in each level of a project. Need of project communication can make issues and eventually leads to project success ([Pinto and Pinto, 2021](#)) and ([Roberts, 2021](#)).

### Project Success

"If the project achieves the specific performance criteria and/or task to be

completed, and if there is a high degree of satisfaction regarding the extend outcome among key individuals within the parent organization, key persons within the client organization, key individuals on the project team, and key clients or clientele of the project effort, the extend is generally seen as a success". The instrument for project success was adopted from (Aga, Noorderhaven, and Vallejo, Aga et al.).

## 1.9 Structure of Thesis

The thesis is divided into five chapters:

- **Chapter 1:** It consists of Background, Introduction, problem statement, Research Gap, Research Problems, Research Objectives, Supporting theory, Definition and Abbreviations of the Constructs.
- **Chapter 2:** This chapter explains the Literature review in depth and discussion.
- **Chapter 3:** This chapter describes about the Research Methodology along with statistical tools used in the current study.
- **Chapter 4:** In this chapter, results outputs along with their interpretations and Discussion are explained,
- **Chapter 5:** In this chapter, conclusion, limitations and future recommendation are included.

# Chapter 2

## Literature Review

This chapter describes the involvement and connection of project communication, project success, social media and technology orientation and how project success is affected by all these different components and how all these influencing factors, project communication and social media and technology orientation affect the success of a project. Few studies show that there has been a gap within the literature. An understanding regarding the suggested conceptual system has been built up and, on the side, there is a hypothesis development for the study under discussion.

### **2.1 Social Media (WhatsApp) and Project Success**

Recent market dynamics levels have put pressure on businesses to satisfy more complex needs with ever-more-cost-effective tactics, which is mostly what drives development and innovation. To address the challenges posed by this scenario, the organization's operations naturally decrease, creating space for an increase of activity through initiatives. As a result, many companies are adopting project management approaches and investing time and resources into putting them into practice. Studies on project management show that using project management techniques improves project performance. Approaches aimed at expanding our

considerate of project success (PS) and its impact on organizational performance naturally go hand in hand with the expansion of project-based activities in the workplace. PS is connected to the project's goals. The PS idea, as described by Kerzner in 2019 is closely related to the outcomes of each project, particularly when those outcomes form the company's core competencies and business operations. There were many studies which studied project success and how it can be evaluated in different projects. The impact of project success to organizational performance in particular zones (such as effectiveness, development, and improvement), can therefore be favored as projects are successful (Yang, 2018).

The literature has addressed the topic of project success in a variety of ways. The difference between project success and success in project management must first be made. A project's success is depend on the given instructions which were given by the organization. Project managers must take effective action and implement tools in accordance with each project's scope, deadline, and budget to achieve success. This discrepancy is mentioned by both (Davis, 2018) and (Aga, 2018). The iron triangle model, which considers the possibility that dozens of projects may have distinct success criteria, is frequently used in the literature to describe methods for evaluating project success. Research on the variables that favorably influence project success has been ongoing. This strategy is supported by a number of different authors due to its five distinct dimensions: effectiveness, impact on the customer, team, business and direct success, and future planning. Using this framework, it is feasible to understand how initiatives affect each of these characteristics separately. According to the research, the competence element is a short evaluation that determines whether the project was finished in compliance with schedule, budget, and scope.

In order to meet customer needs, the second component, influence on customer, emphasizes how the project's product impacts the customer's life or business. Impact on the team, the third dimension, measures how the project has generally impacted team morale, organizational loyalty, and team members' ability to remain employed by the company after the project is finished. The business and direct success dimension, for instance, focuses on the project's contribution to the organization's end product development as a manifestation of the project's



business success (Davis, 2018). Finally, the long-term component of planning for the future assesses how well the project contributes to the organization's structure preparation for the future or even how it generates new business opportunities. The model provides an assessment of project success using dimension-linked data focused on various time periods, from short to long term. It should be collected after a certain phase of the project life cycle. Zahra and Covin (2021) noted that some entrepreneurial orientation (EO) variables perform well based on long-term time horizons, with a reported success rate of 60 percent. I gave an example, citing Von Hippel's 1977 study of 18 companies that in a project (within 3–5 years after project initiation he achieves a gross profit of 10 percent). Social media is one of these venues for exchange of ideas, innovation, and best practices for knowledge sharing and debate. It can also be termed as a category of internet media that reassures people to discuss their profiles, thoughts, and issues. Social media also describes the use of mobile and web-based technology to transform communication into an interactive discussion. As a result, social media is changing how project teams communicate, form connections, and establish trust in professional contexts. Social media also makes it possible to track changes in communication over time, which could be a sign of a project's latent problems, such as a problem discovered during an integration test that prompted intensive discussion amongst the participating teams. As a result, the project team can use social media to benefit the business through fresh ideas, improved working practices, and cost-saving organizational strategies. Social media platforms like Twitter, WhatsApp, Instagram, LinkedIn, and others are frequently used for communication. Nevertheless, these social media platforms are only used for person inquiries, official, educational, and product promotion. Furthermore, digital media such as WhatsApp have such features that motivate the team to persist online promote communication timely. The project team also makes use of WhatsApp for communication purposes because these social media are much more affordable than more conventional methods like email and formal meetings. Social media stands out as a crucial component of the modern communications sector. Social media is a platform used by individuals, businesses, and communities to share material, profiles, opinions, problems, experiences, and media in general.

Additionally, it is facilitating timely communication. The growth of social media globally has an impact on internet users everywhere. According to a study, about 20 million Malaysians used the internet in 2013, with Facebook having the most users there with just under 14 million. Additionally, social media was already widely used by businesses around the world for internal communication. To ensure ongoing collaboration and communication among the team members, project managers in an organization play a crucial role in incorporating these social media into their projects. In general, a lot of research concentrates on literature studies about social media in the marketing industry, management education, as well as personal use. However, there haven't been many research done to determine how social media helps the project team assure effective communication. The paucity of research on the subject prompted this study to investigate how social media supports project teams in ensuring effective communication. This was especially true when it came to communication.

Social media is an important part in communication industry. It might be just used as a mean of sharing substance, profile, supposition, issues, involvement, viewpoint and media itself is continuously used in firms and communities. Most businesses use social media today for internal communication, which has an effect on their bottom line. To ensure continued collaboration and communication across all teams, managers in every firm play a critical role in integrating these social media platforms into initiatives. Majority of studies focus on literature analysis of social media for marketing, management, education, public, and personal use in general. However, other studies have found no evidence of how social media helped ensure effective communication among project teams. Given the lack of research that does not explain how social media can help project teams communicate, this study went a step further and analyzed how social media ensures effective communication for project teams. To do. The project team plays a significant role in creating high-quality products and ideas that will increase an organization's productivity. But whenever project teams attempt to function as a team, disagreements develop. These disputes typically develop when team members disagree over the present aim, the importance of the objectives, the timeline of the objectives, and the team's location. The key to dealing with all of these issues is communication,

which is the primary factor in helping businesses overcome employee resistance, build trust, and find solutions to issues. Therefore, the project team members must communicate in all forms, whether informal or official, directly or indirectly, via phone, meetings, and email, on a daily basis.

Project teams often require quick feed-backs and without effective communication tools, obstacles will occur which will eventually prevent the project teams in making decisions. Moreover, they will not be able to share their experiences and information with the rest of the team. Barriers to communication can lead to compulsion, manipulation, fraud, and other negative behaviours including rage, irritation, and demotivation. Large workplaces, conference rooms, silent rooms, and other items that can become the cause of their attention can also hinder the team's ability to engage and communicate. The team will be able to make decisions and solve problems more quickly when they have the technology to communicate, share data, and information efficiently. This can lead to better outcomes and a higher possibility that the project will succeed. The recent advancement of social media in communication technologies has prompted investigations into how these tools affect and support remote work practises. Therefore, more research is needed to understand how social media ensures good communication among the project team.

WhatsApp is also suitable for project team communication as it offers a free alternative to sending text message directly to the receiver's smartphone. It is also one of the most popular mobile messenger apps in the world. It is also ranked among the most popular mobile messenger apps in the world. Additionally, in the spring of 2014, Facebook announced the acquisition of the standard messaging platform. WhatsApp has also launched web and desktop PC versions of WhatsApp running on Google Chrome. As such, it is one of the best platforms for project teams to communicate effectively. Processes more instant and more messages are sent per day than the entire global SMS industry.

One of the best-designed and most user-friendly In mobile apps is WhatsApp, which features a clean and inviting UI. Text messages, media items including photographs, videos, and music snippets, links, contact vCards, and location may all be shared instantly with others using WhatsApp. Moreover, user phonebook

contacts that have WhatsApp installed will be automatically added to WhatsApp contact list and allows the project team opens a chat with them or create a group chat. Based on the above discussion, following hypothesis has been developed;

**Hypothesis of the literature is:**

- H1:social media (WhatsApp) has positive and significant impact on project success.

## **2.2 Mediating Role of Project Communication**

The ineffective interaction between the project team and the many project stakeholders stands out as a recurring topic. Despite the common misconception that these issues are primarily the responsibility of the project team, most failures are actually the consequence of miscommunications between all stakeholders regarding their wants and preferences. However, the responsibility for establishing efficient communication will always fall on the project team, regardless of who is really to blame when it breaks down or fails. The project team needs to accept this since successful project communication is a crucial component of effective project leadership. The project will almost certainly experience difficulties and perhaps potential disaster if the project team fails to recognize and accept this fact. It's crucial for a project team to comprehend certain common communication mistakes in order to develop an effective communication plan. Knowing what obstacles stand in the way of success allows the project team to more successfully implement techniques that can help allow greater success in project-related communication for all parties involved.

There are many mistakes in communication. Poor project communication is common because project teams focus on external one-way communication of project stakeholder status reports and expectations. This type of communication does not give the project team and stakeholders a clear picture of the problems and difficulties that exist within the project. Without a thorough feedback mechanism, project difficulties and problems are unlikely to be discovered, which can lead to unexpected and unpleasant project failures. It is difficult to list and describe

every possible misunderstanding or error a project team may make when working on a project. But there are some recurring themes in the project management literature. The project is less likely to experience setbacks if the project team is aware of these throughout the whole project life cycle and actively works to address them (Haywood, 2018). Different groupings have different dynamics and interactions. The team which works for programming will not work for design team. In general, what works for mid-level managers won't work for the design team and vice versa. The project team cannot plan to collaborate with stakeholder groups externally the same way they do internally. To collaborate and communicate with different investor groups, a range of strategies will be necessary, which may require the project team to change their own working practices. For instance, a communication plan that only makes use of the project team's preferred communication channels, such as a blog or email, might not be well received by others. The project team will ultimately have communication problems if they ignore this (Pinto, 2019).

Previously, it made sense for project managers to assume that the majority of the team would be based in the same location, that project management software would be installed on a desktop computer, and that status updates would be presented at weekly team meetings or monthly executive review meetings. Today, sponsors demand real-time access to project data, executives want the opportunity to see their projects as a portfolio of initiatives, and it is probable that at least one team member will be physically or temporally removed from the team. Strong communication skills in project managers are now more crucial than ever due to these changes in the criteria for information systems supporting project managers. It is commonly known how crucial good communication is to a project's success. Research studies investigated projects that crossed organizational boundaries and discovered that effective communication across project team boundaries required effective communication between project managers and sponsors. Additionally, he discovered that effective project managers adapted their communication styles to the particulars of the project and the organizational culture in order to foster positive connections and provide project status information. Project success was not supported by task-oriented communications that lacked relationship-building

components. Muller wasn't the first to note the significance of good project communication on project outcomes. The ability to retain relationships during a project has been found to promote team building efforts, which in turn enhances other aspects of team performance and encouraging project team productivity and team member satisfaction. These and other relationship factors, as well as the results of the financial and operational aspects, are crucial in evaluating whether a project is deemed successful. Communication skills have become one of the most sought-after project management competencies as a result of the realization that good project communication practices and project success are positively correlated. This has also increased the demand for project management information systems.

The project team is typically entrusted with a crucial role in delivering high-quality products and offering innovative ideas to increase an organization's efficiency. However, disagreements usually start when the project team decides to work together. Conflict typically occurs when team members disagree with the present goal, have divergent views on how to prioritize and schedule the goals, and also because of where the team members are located. Communication is the key component to helping firms enduring change by reducing employee resistance, boosting employee trust, and resolving issues. As a result, the project team must communicate on a daily basis in both informal and official ways via face-to-face meetings, telephone calls, and email. Additionally, the project team needs prompt feedback. Without an efficient means of communication, however, obstacles will arise, stopping the project team from making choices, delaying feedback, and impeding reciprocity. A communication barrier will prevent the project team from sharing experiences and information with the other team members. Anger, frustration, internal exile, or demotivation may result from communication breakdowns or talks that undermine the qualities of coercion, manipulation, fraud, and deception. Lack of amenities like spacious work spaces, meeting spaces, quiet rooms, etc. can also reduce the team's opportunities for connection and communication and cause them to become distracted while working. However, using an effective communication tool will produce better results, increasing the likelihood that the project will be successful overall. This is because the project

team will be able to make decisions and solve problems much more quickly when they have the technology to share data, information, and knowledge effectively. The current advancement of communication technologies, such as social media, has also prompted investigations into the ways in which these technologies support and influence remote work practices. Therefore, it's crucial to conduct more research to determine how social media facilitate productive team collaboration.

Workplaces are changing dramatically as a result of social media. Organizations are becoming more and more interested in adapting business processes. The ultimate goal of social media usage may vary, but it is to create social networks and encourage sharing at work. The use of social media and employees' job performance is examined empirically, as well as the organisational structure's mediating role. Social media is one of those places where dialogue, innovation, and best practises for information exchange and discussion occur. It is a type of internet media that encourages users to share the profile, viewpoint, material, issues, and media itself. It involves using web-based and mobile technology to transform communication into an interactive discourse. Social media thus influences how project teams communicate, form connections, and establish trust in professional situations. Because social media allows for the detection of changes over time, such as a problem discovered during an integration test that prompted significant contact between the participating teams, it can serve as an early warning indicator for latent difficulties in a project. A project team can therefore use social media to benefit an organisation through fresh perspectives, improved working practises, and cost-saving organizational techniques.

Social media platforms like Instagram, Facebook, Twitter, LinkedIn, Orkut, Myspace, and others are frequently used for communication in modern society. However, they are just used to advertise goods and offer information to potential candidates. WhatsApp, on the other hand, motivates the group to stay online and facilitate rapid communication. In project teams, communication tools like Team viewer, Facebook, Online meetings, and Microsoft is heavily used since they are far more affordable than more conventional methods like email and in-person meetings. This study looks at one social media platform that guarantees efficient teamwork communication. Additionally, this study makes advantage of one of the

most well-liked social media channels for efficient project team communications. Based on the above discussion, following hypothesis has been developed;

**Hypothesis of the literature is:**

- H2:project communication positively, significantly and partially mediates the relationship between social media (WhatsApp) and project success in the presence of moderator.

## **2.3 Moderating Role of Technological Orientation**

Technology orientations are defined as developing firm behaviours that are anticipated to generate competitive advantage over the long term in parallel with firm strategy. Technology orientation is characterised by the level of commitment, acquisition of new technologies, and applications. Technology becomes relevant to project management in today's technologically equipped workplace, where electronic resources are frequently used for collaboration, networking, and project management tasks. Even co-located project teams now frequently use electronic modes of communication. Research has demonstrated that it is challenging to link the usage of technology with business success, and the absence of such a relationship is quantified in a manner similar to project performance. However, technology must play a crucial part in helping project managers operate it effectively and efficiently. Numerous studies have examined the importance of project managers and leadership styles.

Technology plays a crucial role in project management. Information technology's main objectives are the development, application, distribution, and sharing of knowledge. The management tool that permits technological knowledge aids in the development, compilation, and transmission of knowledge. Databases, hardware, software, and smart devices are the four areas into which technology knowledge can be classified. Numerous studies indicate that the building sector does not rely on technology as heavily as other industries and is hesitant to adopt new



technologies. A national study by the Civil Engineering Research Foundation revealed that the design and construction sector barely spent 0.5 percent of its overall profits on RD. On 219 accomplished projects from all around the United States, the degrees of technology applied on 68 distinct typical project work functions have been evaluated. The projects were also assessed based on their overall cost and timeliness of completion. Based on the project's scale in particular, the results of an analysis of project technology consumption were reported. The outcomes of composite project performance, which includes project cost and schedule performance, were also covered. The findings showed that small and medium-sized initiatives had more significant technological influences on project performance than large projects. It was discovered that the adoption of project technology was favorably correlated with the overall success of small and medium-sized projects. When handling bulk goods. Researcher intended to see what effect electronic data exchange had on that. As a result of the investigation, a process model was created. In order to identify the benefits of technology, the analytical findings from integrated models were contrasted with those from non-integrated models. The results showed that integrating the bulk materials process reduced cycle time.

The project management tool family is more generic in design and lacks specialized software sizing and estimating functions, in contrast to software cost estimating tools. Additionally, many general project management solutions don't deal with quality problems like the effectiveness of the defect clearance procedure. Even while project management software is useful, it needs more managerial know-how to be utilized to its fullest extent. According to ([Abrantes, Abrantes](#)), a project manager today has access to a variety of computer technologies. The goal of computer-aided project management is to integrate all project management systems with computer tools while also identifying the precise duties carried out by distinct computer programmers. Project management is not the only goal of computerization. But it's feasible that using software is equivalent to manually constructing a dreadful schedule, budget, or crucial component ([Aga, 2018](#)). Technological Orientation (TO) is the organization's willingness to gain technical knowledge and utilize it to develop new products. Under the umbrella term

of Strategic Orientation, which enables an organization to implement strategies that contribute significantly in determining whether a product succeeds or fails, Technological Orientation has been mostly researched (Allen, Allen). TO is a valuable factor in the development of new products (Bakker, Bakker). A firm is enabled by TO to refine its existing technology according to changes in market and reconfigure its resources to exploit the potential opportunities. Enhanced competition that can help in eradication of monopolies and creation of entirely new markets or industries is a result of technological change (Berry, 2019).

Management researchers have created a number of categories to represent alternative forms of strategic orientation. The social media market orientation, which comprises customer orientation, competitor orientation, and technical orientation, is a form of strategic orientation (Balliet, 2021). These categorizations often show how disparities in strategic orientation result from different combinations of individual, organisational, or environmental elements that affect how and why specific strategic orientation happens as it does.

To represents the idea of “technological-push” which means that customers will choose those products or services that are technically superior (Brinkhoff, Brinkhoff). A firm needs to collect technical information from the industry in which operates, including its suppliers and customers in order to be technically oriented (Yang, 2018). Thus, a firm is considered as technologically oriented when it invests substantially in RD to acquire new technologies with an idea to develop value creating products (Nixon, 2019). To remain competitive in the market, technology is recognized as a vital factor for firms. As a result of globalization, the intense competition has made it necessary for the organizations to acquire emerging technologies for developing new products otherwise they will be out of the competition at global level (Ragatz, 2022).

The product life cycle that has forced the firms to upgrade their technology base to gain competitive advantage over their rivals is abridged by the robust growth in technology (Ryan, 2018). Therefore, a strategy must be adopted by a firm to direct its activities towards achievement of superior performance. A firm can strengthen its position relative to its competitors by acquiring new technology at early stage. It can also be beneficial for the firms in the form of “valuable resources,

increasing market power and initiating strategic renewal (Aragón-Correa, 2018). When the market turbulence is low, a firm has to decide whether the acquisition of new technology can benefit them or not because it can expose the firm to financial risk due to uncertainty prevailing in the market. A technology-oriented firm is needed to be in line with the mission and vision of the firm and either to develop technology within the firm or to acquire it from others is at the discretion of firm's management. Based on the above discussion, following hypothesis has been developed;

**Hypothesis of the literature is:**

- H3: Technological Orientation positively moderates the relationship between social media (WhatsApp) and project communication such that it strengthens the relationship.

## **2.4 Technological Orientation Moderate the Mediating Effect Project Communication**

Technological orientation is described as "the ability and the intention to acquire a solid technological background." The employment of the most advanced, cutting-edge technologies in new product development (NPD), active scanning, achievement, and quick assimilation of new technologies both within and outside of the sector are all illustrations of behaviors that are technologically focused (Alias, 2019). The argument market orientation, imitating market pull, fosters new product ideas that better meet consumer needs as opposed to technological orientation, reflecting technology push, which focuses on concepts that employ material removal and cutting-edge technologies (Anantatmula, 2018). They describe technology orientation as a company's capacity to develop a technical response to the changing demands of its users. They assess a company's technology orientation by factors like how much it uses advanced technologies to create new products, how proactive it is in creating new technologies, how many ideas it generates for new products, and how quickly it integrates new technologies. They

contend that a technology focus should lead to more radical breakthroughs with the potential for greater competitive advantage. In order to stay up with technological change, they also discovered that businesses became more technologically focused (Avolio, 2018).

The study asserts that technically complicated products with high levels of innovation and technological sophistication have a significant effect on consumer behavior, have a significant impact on how customers utilise products and offer a number of unique advantages (Muszynska, 2018). The sophistication, focus, and informativeness of technology are the three most important strategic dimensions.” For a number of years, researchers have been examining the connection between technological orientation, or the so-called innovation orientation, and new product performance. Additionally, empirical studies support the idea that a significant focus or the use of advanced technology during the development of new products might lead to the success of those products (Yang, 2018). From view point of RBV, TO can be considered as a valuable asset/ specific internal resource that is beneficial in enhancing entrepreneurial activities of a firm (Yap, 2018). Technological Orientation helps a firm to explore advanced technology and to take risks in its implementation to generate new ideas or make new product, service or process (Butt, 2018).

Business firms that have necessary skills to manage new technologies effectively and efficiently will be able to make products superior to the competitors (De Oliveira, 2019). The entrepreneurial characteristics of firms drive them to integrate the latest technologies in their processes and to explore the new business opportunities (Buvik, Buvik). It has been examined that innovativeness leads to novelty through the use of technology and RD. Similarly, firms that are proactive in the acquisition of cutting-edge technologies and integrating them in their processes are more likely to enhance their capabilities and to become market leaders. Hence, TO represents a major element in the growth of firm and innovation in different industries (Park, 2019). The novel technologies have transformed the working environment of organizations. Consequently, organizations invest in technologies with the aim to achieve competitive advantage (Anantatmula, 2018) by developing a system that can minimize cost. As the businesses are becoming projectized, the

use of technology in projects has grown substantially ([Anantatmula, 2018](#)) because technology makes a significant contribution in the successful accomplishment of the project. The intense competition and globalization have accentuated the significance of project success to firm's performance. The success in project comes when it fulfills the desired requirements. The end result of a project is also a unique product, process or service; hence technological orientation has been stated as enhancing performance of a new product. Only when all team members are actively communicating on the project is effective project communication feasible. The project manager serves as the main point of contact, but team members also need to be skilled at interacting with stakeholders. The entire team must be informed of the project's goals, objectives, outcomes, and benefits in order to accomplish this. The project's vision must, therefore, be perfectly apparent both internally and externally.

Regular meetings are frequently utilized as a technique to make this happen. Regular meetings, regardless of their length or frequency, establish a dependable framework for informing and including all participants. However, meetings should be focused on the decisions or activities that need to be taken rather than on status updates, which are fatal to engagement. Status reports can and should be released in advance of the in-person meeting so that the discussion can focus on the unusual cases rather than the usual ones. In other words, only topics that are either preventing the project from moving forward or have caused it to move ahead of schedule should be discussed. The most productive meetings restrict discussion to exceptional things and specify actions to be taken and who will be responsible for them. Active communication techniques like in-person conferences, phone calls, video calls, and presentations—are typically more interesting than passive ones. Examples of passive communication techniques include podcasts, e-mails, blogs, and project newsletters. The recipient using passive communication techniques finds it more difficult to concentrate on the subject at hand and is more likely to be interrupted. Passive methods have the advantage of being made available on demand, which makes them more convenient for a person's schedule. Because of this, passive strategies are appropriate in the project's communication plan, but they should only be utilized with stakeholder groups that are likely to use them for

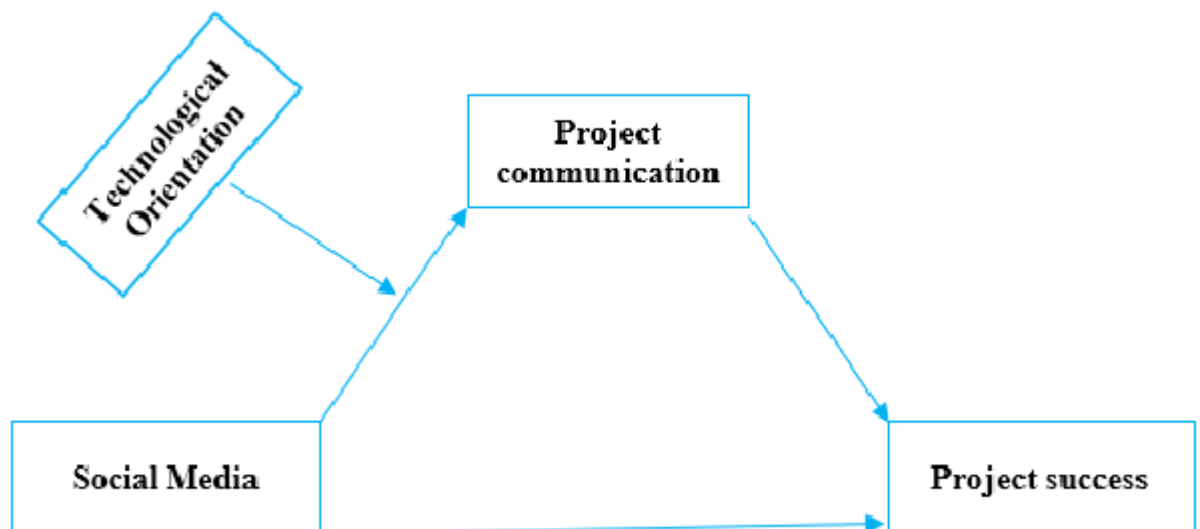


FIGURE 2.1: Framework of Research

communication outside of the project and in particular circumstances. Based on above discussion, the role of moderation and mediation will create a major impact on project success as this will increase the success of project. Based on the above discussion, following hypothesis has been developed;

**Hypothesis of the literature is:**

H4: Technological orientation moderate the mediating effect project communication between the social media (WhatsApp) and project success.

## 2.5 Theoretical Framework

In this research study, the main variables which are included are;

- Social Media
- Project Communication
- Technological Orientation
- Project Success

### Model 7

#### Conceptual Diagram

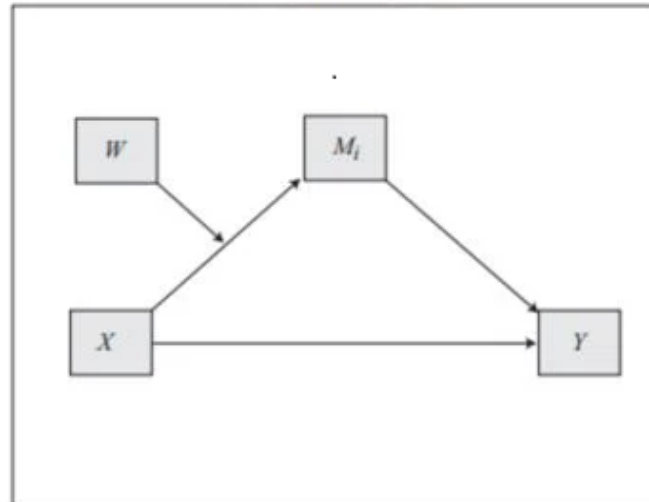


FIGURE 2.2: Model7

## 2.6 Hypothesis Development and Research Framework

In the proposed framework, the social media is independent variable, Project Communication is Mediator, Technological Orientation is Moderator and Project Success is Dependent Variable and is aligned with Preacher Hayes' Model 7 in Figure 2.2. Further, hypotheses developed based on the above literature review to statistical test the research framework are given below:

The hypothesis for this research are as follows:

- H1: social media (WhatsApp) has positive and significant impact on project success.
- H2: project communication positively mediates the relationship between social media (WhatsApp) and project success in the presence of moderator.
- H3: Technological Orientation positively moderates the relationship

between social media (WhatsApp) and project communication such that it strengthens the relationship.

- H4: Technological orientation moderate the mediating effect project communication between the social media (WhatsApp) and project success.



# Chapter 3

## Research Methodology

### 3.1 Research Design

The present study investigates the relationship between social media usage (WhatsApp), project communication, technological orientation and project success. This part of the study describes the methodology of the current research which includes instrument, data collection, unit of analysis, sampling process, sample size, and statistical analysis, etc. This will help in examining the relation of social media usage and project success with mediation of project communication and moderation of technological orientation.

A research design encourages specialists to get desired results; likewise, it helps in raising the assessment. Mainly, two research design techniques are there known as “quantitative and qualitative”. The current study followed the quantitative research design. Hence; cross-sectional research design used to achieve the objectives of the current research. Due to cross sectional research design, data were collected in the same time frame instead of longitudinal.

### 3.2 Type of Study

The current research design was cross-sectional and data were collected from Population of IT companies and Call Centers. The unit of analysis for the current

research is the managers in the call centers and IT companies (17000+) registered in Pakistan Software Export Board, Islamabad. A sample of 1200 respondents were approached using non-probability, convenience snow ball sampling technique by visiting the offices in Islamabad and Rawalpindi. Further, google doc link was also sent via email to remote call centers and IT companies for data collection. Out of 1200 questionnaires 550 were received back, 65 were excluded due to extensive missing data, 18 were excluded due to extreme values and 04 responses were discarded due to all neutral values. Hence, a sample size of 463 suitable responses data were used for the statistical analysis. Data were collected using the adoption of existing questionnaires.

### **3.2.1 Study Setting**

The current study was conducted in natural environment and data were also collected during the office hours in the natural work environment and setting. The data were collected at one time because of cross sectional nature of the current study.

### **3.2.2 Time Horizon**

The cross-sectional study collect the data in the same time horizon contrasting with longitudinal studies. Hence; the data were collected in one span of time in the current study from Call centers and IT Companies registered in Pakistan Software Export Board of Pakistan.

### **3.2.3 Unit of Analysis**

In observational research, the material being studied is referred to as the unit of investigation. One element of the population is referred to as a unit of examination, and each component of an organization is referred to as a unit. The scope, purpose, and nature of the research all influence the selection of the examination unit. An individual, a group, an organization, or a society may be the unit of analysis. At a smaller scale, persons are the unit of study, whereas groups are the focus at a larger

scale. The focus of the large-scale level study is organization, with a foundation in social structure, social tactics, and their connections. The unit of analysis for the current study was employees working at the designation of managers or project managers in the call centers or IT industry. It is troublesome to urge information from organizations, so project managers who were working completely different call centers were the unit of investigation in this study.

### **3.3 Population and Sample**

#### **3.3.1 Population**

Population of the current study was managers working in the IT companies and Call Centres registered in Pakistan Software Export Board. There are about 17000+ companies and call centers were registered as per the statistics of P.S.E.B.

#### **3.3.2 Sampling Process**

The sample is the minimal factor that signifies the entire of population and the results from the sample is inclusive and representative to the whole population. Choosing a sample out of entire population is really a tough task. Huge samples are attained where the population is heterogeneous, whereas smaller sample size is ascertained if the population is homogeneous. The growth of efficiency is not considered by raising the length of data. Research population refers to individual or group which possess same traits.

#### **3.3.3 Sample Size and Strategy**

The sample size of the current study was 463 consists of manager or project managers. This is also greater than the size provided by online sample calculator i.e., 376. The sample size more than 300 hundred is excellently suitable to generalize the results. Project managers working in different call centers of Rawalpindi and Islamabad are population of the study. 1200 respondents

were contacted and requested to complete the questionnaires. Out of 1200 questionnaires, 463 sample size was found suitable for statistical analysis. The rate of response was 38.6 percentage. Sampling strategy denotes to the methods or process selected for choosing sample size from all population. Two plans are adopted for such research studies; i) probability sampling; it means a method in which there are equal chances of selection out of the targeted population ii) non-probability sampling; it means a technique in which there are no equal balances of selection out of the targeted population. In the current study, non-probability sampling technique is applied i.e., snow ball sampling technique.

### **3.4 Instrumentation**

The primary phase contains survey design, its explanation for variable, reliability and its validity actions. Instrument Structure. The questionnaire has been divided into two sections; demographics and constructs. And constructs are Project Communication, Social Media WhatsApp usage, Technological Orientation and Project Success.

#### **3.4.1 Instrument Development and Measurement:**

The current study adopted the following instruments for data collection on five-point Likert scale that ranged from 1-5 where 1 represents “strongly disagree” while 5 represents “strongly agree”.

#### **3.4.2 Social Media (Whatsapp)**

The social media can be defined as ”Social media maybe a collection of associate-confront, which allow users to produce and trade customer-oriented content via the internet.” However, social media utilization takes into account the time which is fully spent on social interactive websites either at workplace or home ([Kaplan and Haenlein, 2012](#)). Social Media (WhatsApp) usage was reported by using 6-item scale by Shaista Rehman. For instance, items are “WhatsApp is

part of my everyday activity at work” and “I feel I am part of the WhatsApp community at work”.

### 3.4.3 Project Communication

Communication plays vibrant role in each level of a project. Lack of project communication can create problems and ultimately leads to project failure (Pinto Pinto, 2020). This six items scale was adopted from (Roberts, 2021) e.g. “Everyone participates”, “Everyone has a chance to express their opinion”, or “We listen to each individual’s input” (Pinto and Pinto, 2021).

### 3.4.4 Technological Orientation

Technological Orientation was assessed using the scale of (Zhou, Yim, and Tse, 2005) with four items. Responses were evaluated on items e.g. “We use sophisticated technologies in our new product development” etc.

### 3.4.5 Project Success

For measuring project success 14 items scale was used. This scale was received from (Aga, Noorderhaven, and Vallejo, Aga et al.).

## 3.5 Scales for Measurement

TABLE 3.1: Instrumentation Sources Items

Variable	Reference	No. of Items
Social Media (IV)	Kaplan (2012)	6
Project Communication	Roberts, Cheney, Sweeney and Hightower (2004)	6
Technological Orientation	Zhou et al., (2005)	4
Project Success (DV)	Aga and Vallejo (2016)	14

### 3.6 Data Analysis Method

The data collection procedure leads to the statistical analysis and results analysis. The current study theoretical framework is examined by using the Preacher and Hayes Model 7 that is recommended for moderated mediation research model. The results analysis comprised of demographic analysis, correlation, regression (direct effect), mediation (indirect effect in the presence of moderator, moderating effect and moderated mediated effect to explain the project success.

**Following statistical analysis are taken to examine the theoretical framework:**

1. Incomplete, missing values and extreme values responses were excluded from the data set.
2. Data set were also checked for existence of any outlier or mis-entry of responses values for corrective actions.
3. Frequency distribution and Descriptive characteristics of respondents were also examined.
4. Analysis of Variance (One-way ANOVA) was applied to check any significant impact of demographic on dependent variables was checked. No demographic has significant impact on project success in the current study.
5. Cronbach's alpha as reliability measure were examined and all constructs were found reliable for the current study.
6. Correlation among the model construct were observed and found significant association between the construct.
7. Regression analysis for direct effect of social media on project success was observed as per the objective of the current study.
8. Mediation analysis as indirect effect of project communication between the relationship of social media and project success in the presence of moderator was examined.
9. Moderation analysis of technological orientation between the social media and project communication was also analysed.

**10.** The moderated effect of technological orientation on the mediation of project communication between the social media and project success was examined too. To analysis the statistical significant of proposed research model, Model 7 recommended for moderated mediation analysis was used as recommended by Preacher and Hayes.

# Chapter 4

## Results and Data Analysis

This study focuses on the finding of “Impact of social media (WhatsApp) on Project Success with Mediating Role of Project Communication and Moderating Role of technology orientation”. This chapter shows the relationships of study variables through descriptive statistics, correlation, regression (direct effect) mediation (indirect effect), moderation, and moderated mediation

### 4.1 Sample Characteristics

The initial part of the results described the respondents characteristics which includes Gender, Age, Education, Experience. All the data were collected based on the criteria that respondents are manager or senior manager in Call centre or IT Companies. Manager's gender represents the gender composition of the sample. The table shows that both male and female were the part of sample. Out of 463 respondents 76.2 percent (n=353) were male while 23.5percent (n=109) were female. However, male were increased in number than females. Manager's Age reflects the composition of age of sample. The table shows that participants of present study belong to different age groups. 70.4 percent(n=326 ) belonged to 20-30 years of age group, 19.4 percent(n=90) to 31-40 years, 7.6 percent(n=35) to 41-50 years, 2.6 percent (n=12) belonged to more than 50 years of age.



TABLE 4.1: Frequency Table

	Description	Frequency	Percent
<b>Gender</b>	Male	353	76.2
	Female	109	23.5
<b>Age</b>	20-30	326	70.4
	31-40	90	19.4
	41-50	35	7.6
	More than 50	12	2.6
<b>Qualification</b>	Bachelor	232	50.1
	MS/MPhil		36.7
	Others	61	13.2
<b>Experience</b>	Less than 3 Years	251	54.2
	3-5	115	24.8
	6-10	75	16.2
	More than 10 Years	22	4.8

Manager's qualification reflects the composition of qualification of the population. 50.1 percent (n=232) of the participants were having bachelors, 36.7 percent (n=170) having master degrees, 13.2percent(n=61) having other education. Majority of the participants were having the bachelor degree. Managerial experience reflects the composition of experience of population. This table shows that sample also varied in term of job experience 54.2 percent (n=251) were having less than 3 year of experience, 24.8 percent (n=115) 3-5 years of experience, 16.2 percent (n=75) 6-10 years and 4.8 percent (n=22) more than 10 years of experience.

## 4.2 Descriptive Statistics

Descriptive statistics contain the standard deviation, mean, minimum and maximum values. It includes the summary of entire data. The averages of all the responses recorded are described as mean and change of responses from mean are described by standard deviation.

All the variables were tested on a five point likert scale ranging from 1 to 5 where

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. Values of mean and standard deviation basically explain the understanding of individuals regarding each variable. The mean Value of social media is 3.8567 and its standard Deviation is 0.51702. The Value of mean for Technological orientation is 3.7289 and its standard deviation has a value of 0.74979. The value of mean for project communication is 3.9039 and its standard deviation is 0.68826. The value of mean for project success is 3.6129 and its standard deviation has a value of 0.65006 respectively.

TABLE 4.2: Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
<b>Social Media</b>	463	2.50	5.00	3.8567	0.51702
<b>Project Communication</b>	463	1.25	5.00	3.9039	0.68826
<b>Technological Orientation</b>	463	1.50	5.00	3.7289	0.74979
<b>Project Success</b>	463	1.43	5.00	3.6129	0.65006
<b>Valid N (listwise)</b>	463				

### 4.3 Control Variable

In this study, There is no need to control the effect of control or demographic variable. To test the significance of demographic, One-way ANOVA test is applied and results revealed that no demographic (gender, age, experience and qualification) has any significant impact on the Project Success. Further, all the constructs reliability was also more than 0.7.

### 4.4 Correlation Analysis:

Correlation Analysis is carried out in order to determine the link between two variables. The purpose of doing correlation analysis in this research is to find out the link between social media usage (WhatsApp) and Project Success, mediating role of project communication and Moderating role of technological orientation in order to validate the presented hypothesis. Pearson's Correlation is also known as Correlation Analysis. It demonstrates the link between two variables as well as

the nature of their relationship. It ranges between - 0.05 to 0.00. If the correlation value is far away from zero it means link is strong whereas when the correlation value is closer to zero it means link is weak. No link exists when the value is equal to zero. Negative and positive signs demonstrate the nature of link between two variables. Positive sign shows that link is direct and when one variable increases, it causes an increase in the other variable also. Whereas Negative sign shows that the link is indirect, increase in one variable is causing decrease in the other variable.

TABLE 4.3: Correlations

Variables	1	2	3	4
<b>Social Media - IV</b>	1			
<b>Project Communication - Med</b>	.432**	1		
<b>Technological Orientation-Mod</b>	.417**	.351**	1	
<b>Project Success - DV</b>	.507**	.437**	.545**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).  $p < 0.05^*$ ,  $p < 0.01^{**}$ .

Most of the time researchers don't take demographics correlation analysis and we have already checked and verified no relationship of demographics and dependent variable. Above table shows relationship between other all variables performed with the help of Pearson correlation in SPSS. It has been seen from the results that there is significant positive correlation between shows the link between two variables. Project communication and Project success share a significant positive correlation having value of  $r = .437^{**}$  at  $p < 0.01$ . Moreover, technology orientation is positively associated with Project success have value of  $r = .545^{**}$  at  $p < 0.01$ . Furthermore, social media (WhatsApp) has a favorable positive significant relationship with project success having value of  $r = .507^{**}$  at  $p < 0.01$ . This represents that all the variables are positively correlated with one another.

## 4.5 Regression Analysis

Correlation analysis was directed to discover the connection among variables as well as the nature of link between variables. But we cannot only rely on correlation

analysis. Regression analysis is carried out to know the dependence of one variable on the other. It tells us how much one variable is dependent on the other variable. We can say that change in independent variable will bring change in the dependent variable. R2 has a value of 0.3159 which shows that technological orientation brings about 31 percentage in project success. To calculate the direct, indirect (conditional mediation), moderating effect and moderated mediated effect, Preacher and Hayes process Macros model 7 is applied. Hypothesis 1 states that social media (WhatsApp) is positively linked with project success. The results showed in the above table also prove that social media (WhatsApp) is positively related with project success.

## 4.6 Regression (Direct Effect)

### 4.6.1 H1: Social Media and Project Success

The direct effect of social media on project success revealed that there is positive and significant effect which supported the H1: social media (WhatsApp) is positively related with project success. Table 4.4 shows the empirical results of direct effect of social media on project success. The value of  $\beta$  is 0.4923 and its significance has a value of .000. This proves that the relationship between social media (WhatsApp) and project success is highly positive and highly significant.

TABLE 4.4: Regression Analysis (Direct Effect)

<b>Project Success</b>					
<b>Social Media</b>	Beta	se	t	p	LLCI
ULCI (WhatsApp)	.4923	.0538	9.1541	0.000	.3866
.5979					

Upper limit confidence interval has a value of .5979 and lower limit confidence

interval has a value of .3866 which shows that there is no zero in the 95 percent bootstrap confidence interval.

#### 4.6.2 H2: Mediation (Indirect Effect)

The mediation is revealed in the presence of moderator that is called conditional indirect effect of project communication between social media (WhatsApp) and project success. The results are presented in the Table 4.5

TABLE 4.5: Mediation Analysis

Effect	BootSE	BootLLCI	BootULCI
.0942	.0218	.0542	.1383

Mediation (indirect effect) is the phenomenon that explains the relationship of independent and dependent constructs (Sarstedt, Ringle, and Hair, 2017). For current study, the objective of mediation analysis is to test Hypothesis 2 which states that Project communication plays a mediating role between social media (WhatsApp) and project success. in the presence of moderator. There is no zero is between the LLCI and ULCI whose values are 0.0542 and 0.1383 respectively, this means that the relationship is significant as non-zero value exist between the LLCI-ULCI

#### 4.7 H3: Moderation Analysis

Moderation of Technological Orientation between project communication and social media (WhatsApp) was also revealed by the results of model 7. It was hypothesized that technological orientation moderates the association between the social media and project success such that it strengthens the said association. The results revealed a positive and significant moderation of technological orientation

between the social media and project communication exists which strengthens the linkage between these two constructs. Table 4.6 presented the results below:

TABLE 4.6: Moderation Analysis

Predictor	Coeff	T	P	LCI	ULCI
<b>Int term (x*w)</b>	.2405	.0695	3.4617	.0006	.1040 .3770

X=Social Media (WhatsApp), W=Technological Orientation, Y=Project Communication, CI=Confidence Interval, UL=Upper Limit, LL=Lower Limit.

The role of technological orientation as a moderator between Project communication and social media (WhatsApp) is highly significant. R<sup>2</sup> has a value of 0.2420 which shows that project communication brings about 24 percent change. For Moderation Analysis Preacher and Hayes Process macros model 7 is also explained the moderating role of Technological Orientation between project communication and social media (WhatsApp). Hypothesis 3 states that Technological Orientation plays a moderating role between project communication and social media (WhatsApp) such that it strengthens the relationship between project communication and social media (WhatsApp). Table 4.6 represents the same strengthening role of Technological Orientation among project communication and social media (WhatsApp). In this analysis, Beta has a value of .2405, t has a value of 3.4617 and p is 0.0006. Upper limit confidence interval has a value of .3770 and lower limit confidence interval has a value of .1040 which shows that there is no zero in the 95 percent bootstrap confidence interval. Thus, hypothesis 3 is also accepted stating that Technological Orientation plays a moderating role between project communication and social media (WhatsApp) such that it strengthens the relationship among project communication and social media (WhatsApp).

## 4.8 H4: Moderation Mediation Analysis

Technological Orientation moderates the mediating effect project communication between the social media and project success is also explained by the Model 7. The results revealed a positive and significant moderating effect on the mediation

of project communication between the social media and project success. Table 4.7 presents the results below: table mediation moderation

TABLE 4.7: Moderated Mediation

<b>Predictor</b>	<b>Index</b>	<b>BootSE</b>	<b>BootLLCI</b>	<b>BootULCI</b>
<b>TOW</b>	.0609	.0234	.0218	.1125

In this analysis, Beta has a value of .0609, The upper limit confidence interval has a value of .0218 and lower limit confidence interval has a value of .1125 which shows that there is no zero in the 95 bootstrap confidence interval. Thus, hypothesis 4 is also accepted stating that Technological Orientation moderates the mediating effect of project communication between the social media and project success positively and significantly.

## 4.9 Summary of Supported/ Not Supported Hypothesis

- H1 : Social Media has positive, significant impact on project success. (Supported)
- H2 :Project Communication mediates the relationship between social media and project success in the presence of moderator (Supported)
- H3 :Technological Orientation moderates the association between the Social Media and Project Communication such that it strengthens the said association (Supported)
- H4 :Technological Orientation moderates the mediation of project communication between the social media and project success (Supported)

The results show that the all four hypotheses developed in the theoretical framework are supported by results. Hence, it can be concluded that social media, project communication and technological orientation explained the project success in IT companies and call centers.

# Chapter 5

## Discussion, Conclusion and Recommendations

### 5.1 Discussion

The purpose of this study is to analyze the ‘relationship between Impact of social media on Project Success with Mediating Role of Project Communication and Moderating Role of Technology orientation’ This chapter holds the discussion on the results comes towards the analysis of the study. Empirical study is evident that all theoretical models are supported by the results. The results and findings of the study create an understanding about the theoretical models of all these variables.

#### 5.1.1 Research Question Number 1 Discussion:

Chapters 1 of this study raise the following question:

**Question No. 1:** To what extent ‘Social media (WhatsApp)’ influences the ‘Project Success’?

**H1:**

- To answer the above-mentioned question, theoretical model was established and Hypothesis 1 is tested.



- H1: social media (WhatsApp) has positive and significant impact on project success.

Hypothesis 1 states that social media (WhatsApp) is positively related with project success. This statement was supported through data collection and analysis. The hypothesis and the results of data collection were both in line with the present study. The results show that social media (WhatsApp) is positively related with project success. Through social media (WhatsApp), project success increases. The results of the hypothesis show that  $\beta$  has a value of 0.4923 this shows that social media (WhatsApp) will bring 49 percent change in project success which shows that social media (WhatsApp) have strong influence on success of the project.

Davis stated in his research that while evaluating and acknowledging project success, this is how we conduct ourselves and interact with one another around here (Davis, 2018). It is the social component of social media, which is characterized as "the interaction among individuals in which they produce, distribute, or exchange knowledge and ideas through online groups and networks." The entire point of social media is cooperation on documents, concepts, or projects. Users can send and receive messages, share files, and collaborate on documents using a variety of tools. Particularly project management solutions offer cooperative ways to keep track of tasks, activities, milestones, and deadlines. When communication on social media (WhatsApp) increases, success of the project also increases. The results of earlier studies and data also corroborate this claim. In previous research, it was also discovered that communication is regarded as the most crucial component for a project's success.

Social media platforms have been utilised by government organisations and municipal governments as a cheap way to collect and share data (Ranawat, 2018). An open source web application that tracks children's academic progress and alerts parents and instructors has been created by six Swedish communities. Social media techniques have been used in Northern Cyprus to give handicapped people the most modernized information about opportunities for study and tourism. Quickly, the private organization adopted social media (SM). In a study, (Rezvani, 2018) stated that companies in South Korea, Australia, and Malaysia revealed

almost all of their websites prominently presents their social media accounts. Additionally, they came to the conclusion that the adoption of SM had improved customer experiences, improved brand recognition, increased information access and sharing capabilities, and decreased costs associated with advertising and customer service (Patrashkova, 2018). For example, in healthcare marketing, social media (SM) presents fresh chances for the general public to offer input and solutions for providers to combine public health messaging. The capabilities of the technological tools include electronic facilitation (built-in tools to control member participation), electronic memory, and availability and synchronicity (Papke-Shields, 2019). Podcasts, WhatsApp, chat platforms, video calls, message or emailing techniques are a few examples of technologies that fit the notion of collaborative technology (Piccolo, 2018).

Due to the different assimilation rates caused by different languages, these methods are favored over telephones. It is important to comprehend the numerous SM tool categories. Most of the categorization is using functions and features that SM tools offer. In addition to the social criteria for project coordination, a project is divided into three socio-behavioral roles: setting the scene, bridging cultures, and brokering political alliances (Pinto, 1991). SM is seen to be a tool that encourages quicker inclusion of new hires. However, there isn't much research on the use of SM in project management. Social Media increased team communication, and tools are rapidly adopted because these techniques are enjoyable to use, quick, easy, assembled, and modern. The advantages of SM for project management Social media management (SM) technologies. It should be classified according to the degree of interaction that they permit from a social capital perspective (Pollack, 2019). Sharing of photos and videos falls under the category of weak intensity SM, whereas strong intensity SM tools enable active user participation and the creation of online communities. To determine the benefits and drawbacks of utilising SM in a project environment, Social media tools into four categories: collaborative projects, blogs, content communities, and social networking. One of the main advantages of employing SM tools. It is the capacity to engage stakeholders on a larger scale. He also advocated the creation of proper laws to regulate the efficient application of SM tools in projects (Podsakoff, 2018).

The team members' ability to communicate with one another and with the project management depends on the availability of communication tools. This form of communication can be used for a variety of purposes, including sending messages, scheduling meetings, providing specific learning materials, and more. The project communication tools currently in use are beneficial for commercial goals, but occasionally they may not be enough to address certain challenges. Consumer behavior and business communication patterns are changing as a result of SM. It has been well documented how SM platforms like WhatsApp and its analogues are growing. For instance, a 2019 McKinsey study of 1700 executives revealed that 64 percent of businesses used social media for selective internal messaging. In a similar vein, Barnes and Mattson discovered that 52 percent of CEOs in their study acknowledged using social media as productive work tools moreover organization used social media to connect with other businesses, like vendors, suppliers, or partners, they locate that 34 percent of respondents said they did. The ability of these groups to forge solid bonds and trust—two elements necessary for efficient communication—is the primary factor in the success of online social networks. The business community anticipates that the adoption of SM will increase and spread across company departments and industries ([Pinto, 1991](#)).

It might be the best tool for creating groups or sending direct messages to anyone. The ideal way to inform the team members about a meeting with all of its specifics, including the location, time, and purpose, is by creating a group in WhatsApp and inviting them to it. Web WhatsApp, a useful tool that allows users to use WhatsApp on their PCs and laptops, has recently been added. The useful aspect of WhatsApp is that it informs the sender whether each message was received or not, as well as whether it was read or not and at what time. Large-scale construction projects, in particular, frequently pique the political and public interest. These projects are usually characterized by a substantial expenditure, a lengthy schedule, a high degree of uncertainty, and complexity. A supreme level of cooperation amongst project teams are crucial for the success of building projects. Project success has received a lot of attention from researchers studying construction management. Recent research has suggested a number of social aspects to supplement conventional notions of project success ([Russ, 2019](#)).

The idea of project success has many different forms. This is mostly due to the numerous players' differing viewpoints, concepts, and advantages. Project governance and project management are combined in existing studies of project success, and they rely on an overview of the entire project life cycle. Success in project management and overall project success are increasingly interrelated (Wang and Howell, 2020). The success of the project has been looked at from a range of perspectives, including those of owners, contractors, and design units, similar to how project stakeholders have attracted increasing attention (Wu, 2019). It is evident that based on the perspectives of the different project participants, issues affecting project performance and the metrics used to measure project success change. As a result, both the perspectives of a specific project participant and that of a particular sector should be considered when evaluating project success. WhatsApp communication helps that team members understand one another, which results in the timely and efficient completion of project objectives. Additionally, this improves project performance, which eventually raises project success. Team members connect with each other and get to know one another through communication, which helps them finish the duties that have been given to them more quickly and efficiently. Open communication allows information to flow across all levels, and accurate and timely information will help in achieving objectives and guaranteeing task completion on time, which improves performance and results in project success. The findings indicate that there is strong support for the 1st hypothesis of the study.

### **5.1.2 Research Question No. 2 Discussion:**

Following the first question of the present study, another question of the study is:

**Question No. 2:** To what extent project communication mediates the relationship between 'social media (WhatsApp) and 'Project Success' in the presence of moderator?

All the below hypothesis result supports and establish a strong answer to the above question.

**H2**

- H2: project communication positively mediates the relationship between social media (WhatsApp) and project success in the presence of moderator. Hypothesis 2 states that Project communication moderates the relationship between social media (WhatsApp) and project success. It is further supported by data, as the upper and lower limits for the indirect impact of social media (WhatsApp) on project success through project communication are 0.0130 and 0.1218, respectively. This demonstrates that the 95 percent bootstrap confidence interval does not contain a zero. Therefore, this hypothesis is accepted because outcomes prove that Project communication moderates the relationship among social media (WhatsApp) and project success. The aforementioned theory is supported by literature, and earlier research also supports this result.

According to Ragatz, project communication through social media (WhatsApp) and other channels will increase its chances of success. Project team members' social media usage, expressly WhatsApp, is important to the project's success. Because people can connect with one another more easily when there is social media (such as WhatsApp) between them, it also plays a significant role ([Ragatz, 2022](#)).

In their study, author Stackman, and Lindekilde (2018) claim that social media (WhatsApp) and project communication are intertwined and that both have an effect on the project's success. The possibility of performance degradation is eliminated by project communication. Social media (WhatsApp) is essential for project communication, which in turn is essential for project success. Project communication involves number of factors, communication and social media usage (WhatsApp) is one of them ([Henderson, Stackman, and Lindekilde, 2018](#)).

The degree of project communication within the project team has an impact on social media (WhatsApp). The high level of project communication facilitates communication and enhances information flow, which strengthens the relationship between the team and supervisor moreover also aids in task completion on schedule and in the most effective and efficient manner.

As it is established that project communication is positively related with the social media (WhatsApp) and project success, project communication will also increase the level of interaction in a project group and work done in a harmonize way to achieve the end goal whereas project communication also helps to build the positive relation with in the group members and with the project leader which ultimately help to ensure the success of a project.

Social media has an impact on how people interact, form connections, and establish trust at home and at work. What started as a set of communication tools for friends has transformed into a way for companies to communicate both inside and outside. Despite that there are many uses for social media platforms; this paper focuses on the new development of using them to aid in project management. Since project team members are frequently separated, project managers must manage relationships to build trust. Because of the lack of physical contact, it is harder to build deep attachments and relationships that result in high levels of trust. Social media communications have the potential to be an important tool for building trust among project team members. The next sections go over research on social networks and social media, trust, and social media-integrated project management information systems

Hence, Information may be transformed and transferred from one person to another using speech as a metaphorical conduit. The communication is the act of giving, receiving, and sharing ideas, information, emotions, and perspectives.

The communication is a cyclical process in which people communicate information continuously throughout time. It is claim that typical modes of communication involve a two-way exchange of information between sender(s) and receiver(s). The primary channel of communication between project teams and their counterparts is often successful (Xiong, 2019). To achieve project objectives, project teams can communicate with one another and exchange information. It is argued that team communication refers to active information exchange activities between teams or the activity through which team members effectively communicate with one another.

Team communication is defined as a procedure for fostering understanding and cooperation amongst teams through knowledge exchange and information sharing. Team communication is an activity of information spread and responsive communication since it involves both the discussion on information among teams and the interchange of thoughts and reactions (O'Daniel and Rosenstein, 2018). During the course of a project, communication problems or disorders might directly cause a dramatic rise in the amount of wasteful spending. Communications are a highly recommended method for preventing claims and conflicts in building projects. Bidirectional communication is one strategy suggested for enhancing the quality of construction projects. Effective team communication is the cornerstone of cohesion, cooperation, and democratic decision-making during the project execution process (Park, 2019). Team communication aids in the coordination and management of each project team's activities. The information transmission, emotional expression, control, and motivation are the four fundamental roles of team communication. Effective communication serves as a barometer to assess the outcome of communications by persuading or motivating others to take action. The metrics include completeness, timeliness, correctness, obstacles, and understanding. Effective communication is widely acknowledged as being essential to the success of construction projects (Buvik, Buvik).

The building project team has some distinctive traits, like being task-oriented, transient in nature, having varying team goals, and having inconsistent core capabilities. For early detection of performance deviations from the plan and quick decision-making for appropriate actions, project teams need to gather, analyze, and communicate information in real-time (Henderson, Stackman, and Lindekilde, 2018)2018). Due to their decentralized character and the fact that different project teams have varying duties and variable times to join the project, building projects place an even greater emphasis on communication. Additionally, team communication is a highly effective tool for resolving disputes. Conflicts may arise due to differences in organizational scale and structure as well as modifications to

project objectives. The resolution of these problems requires coordination and communication. Therefore, the process of information sharing, information interchange, and information transmission among project teams during the course of the project can be described as communication between construction project teams. It addresses information's frequency, impact, attributes, scope, and transformation and aims to lessen information asymmetry across project teams.

The accomplishment of dream goals in terms of designation, plan, and budget can be referred to as a project's success. Though once considered to be mostly appropriate in project management tasks, it is now identified that a wider variety of result conclusion is now typically necessary. The requirement for a more comprehensive strategic perspective from the various project stakeholders is one of the factors that has influenced this approach. The idea of the sustainable enterprise is the growing interest in knowledge as a source of competitive advantage. The importance of motivation as a source for better project execution and the growing concern to ensure maximization of the lifetime value of the project endeavor are a few examples of these influences.

Projects are now seen as persistent strategic interventions that must contribute to the economic, social, and environmental well-being of the numerous project stakeholders in order to be approved, as opposed to discrete sequences of events with limited effect and short-term goals. Projects are also thought of as an enlightenment of businesses; each one's uniqueness creates a wealth of opportunity for individual and organizational learning (Muller, 2019). Project management success is a notion used by Munns and Bjeirmi in 1996. This is the standard situation, which emphasizes meeting the project's quality, cost, and schedule goals as well as the standard of its practices or work. A successful resolution would be considered a project management success. These issues are seen as project management responsibilities. The term "product success" is used in a slightly different way to describe the outcomes of a project conclusion, including the deeds of the project holder's strategic organizational goals moreover the fulfillment of



user and stakeholder necessity with regard to the product (Baccarini, 2020). Standards for knowledge creation and distribution may also be included, as many project owners now view these as signposts of a project's success (Prencipe, 2021).

What we regard to be the more comprehensive definition that considers the project's wider and longer-term ramifications is total project success, or both the management and output success of the project. The success of the project management can be evaluated once the project is complete. The idea overall project success indicates that expanding the success criteria will necessarily delay the project's final evaluation. Several months or years after the project is finished, the interpretation on success criteria will be eventually assured.

After detailed research, it is concluded that social media (WhatsApp) and project success are linked to each other and project communication act as a mediating role among project communication and project success. Acceptance of hypothesis 2 was centred on the assumption that project communication is an important element and serves as a relationship between social media (WhatsApp) and project success, strengthening their relationship.

### 5.1.3 Discussion on Research Question No 3:

Another question of this study is already discussed in chapter 1, which is: **Question No. 3:** : To what extent technology orientation moderates the association between social media and project communication? To answer this question H3 is developed and tested.

#### **H3:**

- Technological Orientation positively moderates the relationship between social media (WhatsApp) and project communication.

It was assumed that Technological Orientation will moderate the relationship between social media usage and project communication. The findings

provide strongest relationship support for the acceptance of 4th hypothesis that Technological Orientation moderates between social media usage and project communication. The results of the third hypothesis were also supported through literature, past research as well as data collection. The advancement in technologies has put pressure on the organizations to innovate in order to survive in the competitive environment. The innovative mindset of organizations has created new technological knowledge that has enabled them to utilize this knowledge which can help to produce new products, services or methods and to survive in the competitive environment. Firms who possess the competencies to manage new technologies are in a better position to develop new products or services and to outperform their competitors to become market leader.

Project communication and social media (WhatsApp) both are interconnected and Technological Orientation plays a vital role between the two. All the above mentioned discussion comes to the point that the relationship between project communication and social media (WhatsApp) becomes stronger in the presence of Technological Orientation as a moderator. So it can be stated that the relationship between project communication is moderated by Technological Orientation and social media (WhatsApp) such that it strengthens the relationship between project communication and social media (WhatsApp). No existing empirical study has thoroughly examined the mediating role of social networks in this relationship, despite the fact that many studies have identified project communication and social networks as crucial success factors of project success ([Pinto and Pinto, 2021](#)). As a result, there is a lack of meaningful interpretation of the results, which makes it challenging for researchers and project managers to reach valid conclusions and infer implications for project success.

According to the definition of project success it has been the subject of a lively debate in recent literature. Cost, time, and performance were historically used as the three metrics to determine whether a project was successful. The main concern of the project was to completed on time,

within the estimated budget, and met all of its performance objectives, it was considered successful. Though, according to this iron triangle or by using these three measures are considered the project to be successful. With the help of these measures, we can consider its outcome that is very soft and simple it also helps to grow easily to maintain the project with client satisfaction and growth of employees (Rezvani, 2018). The criteria that are decided for project success which needs long term success of the organization it helps the organizations to achieve long term objectives for better future and to beat their competitors (Nixon, 2019). According to this research Using the criteria of triple constraint that is project cost, project time and budget is for ease of project success and it is important process for industries (Davis, 2018). When we see the industry these three points are the key makers that leads towards the project success and also it has the huge impact on customer satisfaction.

These fields frequently need significant capital investments. Although the process industries contribute significantly to national economies and have a considerable global presence, project management researchers have paid them little attention. Capital projects in the process industries, comprise constructing physical plant infrastructure and materials-processing equipment either to create a new product for projected profit or alternatively to maintain or increase operating-level capabilities. Over the past ten years, there has been a shift in how people view how capital project systems fit into an organization's operations.

company's strategy to gain a competitive edge in both home and foreign markets can include upgrading its capital project system. Even little advances in project management can yield large financial rewards for businesses, shareholders, and the economy as a whole. The foundation of any project's success is made up of important success variables that have been ambiguously categorized as "hard" and "soft" factors. All individuals who were taught their "hard assumptions" about the world, who are based on positivist and realist philosophies, and who encourage an understanding of the world as an objective reality are the "hard" components which

everyone has unrestricted access. As a result, systems are viewed as being mechanical processes with stable relationships between variables. Functional analysis is used to understand systems by attempting to understand them in terms of their functions. The soft components, on the other hand, are interpretivism-based and include social construction and critical theory. In conclusion, ontological and epistemological philosophies are connected to the "hard" and "soft" parts of project management, respectively.

In social psychology, the willingness of a project team to communicate information is known as communication willingness. Project teams in the Chinese culture are not always eager to disclose their information in the absence of interpersonal trust (Ning, 2018). Additionally, a decline in communication willingness is brought on by the transient, uncertain, and fragmented nature of building projects.

Project teams frequently include a variety of team members, are complex, and depend on other organisations for certain tasks, all of which emphasise the value of communication. An intense desire to communicate improves the flow of information between teams. As a result, information processing relies on communication willingness, which is increasingly stressed as a key component of being in charge of communication in construction projects. Due to the diversity of project teams' resources (such as manpower, technology, and information), these teams may come into conflict with one another. A project team has two main goals: completing the project and reaping its own rewards, which is an objective duality (Gunduz, 2020). Only to a certain extent of communication desire will result in chronic communication activities across project teams, since the objective duality of the project team will generate varied subjective demands for communication (Roberts, 2021). As a result, one of the major factors in evaluating whether disagreements may be addressed quickly is the willingness to communicate. The degree to which the project team communicates and shares information with the other project teams involved in the project is defined in this study as communication willingness.

Hence, on the basis of above arguments it can be concluded that

Technological Orientation positively moderates the relationship between social media (WhatsApp) and project communication.

#### 5.1.4 Discussion on Research Question No 4:

The last research question of the current study is already mentioned in discussed in chapter 1, which is **Question No. 4:**

To what extent technology orientation moderates the mediation of project communication between the social media and project success?

To answer this question Hypothesis H4 is developed and tested.

#### **H4:**

- Technological orientation moderate the mediating effect project communication between the social media (WhatsApp) and project success.

It was assumed that Technological orientation moderate the mediating effect project communication between the social media (WhatsApp) and project success. The findings provide strongest relationship support for the acceptance of 4th hypothesis that Technological orientation moderate the mediating effect project communication between the social media (WhatsApp) and project success. The results of the fourth hypothesis were also supported through literature, past research as well as data collection. The way people use and share information and how they communicate, collaborate and organize are being reshaped by new technologies. These technologies brought innovative services and applications, as well as means to communicate and create content. Social media is transforming consumer behaviors and business communication patterns. The growth of social media platforms such as Facebook and its equivalents have been well documented. For example, a 2009 survey by McKinsey of 1700 executives worldwide showed that about 64 percent of these companies were using social media for effective internal communications. Similarly, in a study of executives, it is found that 52 percent reported using social media as effective tools

in their businesses. Effective communication is one crucial motivator in a project. Past studies alleged that about 75 percent of all problems left after administrative measures are taken, are caused by the lack of communication between team members and stakeholders. Communication consists of project marketing and unwanted information vaguely exchanged within the project team and outside parties. To send a message does not essentially mean that the receiver understood exactly the way we wanted- which is why good communication skills are very important. The results revealed that that project communication with team members, managers and clients is critical in the project.

The team uses a variety of forms of communication: face to face, telephone, emails or written documents. The form they use depends on the people involved and the content. However, it is underlined that hard or organisational technology consists of informal or formal communication methods with or without the use of hardwares and electronic devices(Ning, 2018). Previous studies have confirmed that a great deal of information is communicated via softer channels. Thus it is crucial to make a note that project communication is much more than written or verbal flow. A sense of balance is required in terms of organisational structure, people skills and hard technologies in order to effectively support project communication.

In his study, Muller (2003) found that good communication between project managers and sponsors was essential for valuable communication across project team boundaries. He also found that task-oriented communications that missed the building aspects of relationships were not enough to carry successful projects(Dwivedula, 2019). It has been demonstrated that effective communication skills enhance other areas of team performance, such as fostering teamwork by fostering relationships throughout the project. These and other relational fundamentals, along with financial and operational outcomes, play a main role in assessing whether a project is considered a success. Project management calls for communication techniques that go beyond transaction confirmation to include relationship management, trust-building, and stakeholder expectation management. It

appears that the efficacy of team communication can be improved by project managers through social media technologies usage. Therefore, it is crucial for project managers to comprehend how communication techniques, the growth of trust, and the impact of social media on them all relate to the project's completion.

The emerging information technology industry is also mainly sustained by the telecommunication sector. Big business opportunities was presented by this booming sector by way of telecommunications global projects, public projects, international projects, international online projects, government telecom projects and project news worldwide. Several studies highlighted the role of telecommunications on the performance of an economy. Deloitte (2009) found that a 10 percent increase in telephone penetration resulted in a 0.6Hence, on the basis of above arguments it can be concluded that Technological Orientation moderate the mediating effect project communication between the social media and project success.

## 5.2 Theoretical Implication

In this study theoretical implications were implemented in a way according to this research that the research was not studied before in this study we can see the impact of social media usage (WhatsApp) on project success. According to results of our research show that social media (WhatsApp) increases project success. By using communication channel better results can be achieved. By using social media (WhatsApp) and project communication it helps the project managers to communicate with the team it is beneficial and easy way to achieve goals and objectives of the company which can lead towards project success.

For the mediation the relation between social media (WhatsApp) and project success, in this study project communication is used as a moderator. This role of project communication among social media (WhatsApp) and project success was not tested before. The results show that project communication

enhances or adds to the relationship between social media (WhatsApp) and project success. Therefore, a positive and significant relationship was found between social media (WhatsApp) and project success along with project communication which is mediator, linking the relationship of social media (WhatsApp) and project success.

Thirdly, taking technological orientation as a moderator is also a significant theoretical contribution in the context of Pakistan. Technological orientation is moderating the relationship between project communication and social media (WhatsApp) such that its presence strengthens the relationship between project communication and social media (WhatsApp). This is a very significant contribution in literature since previous literature does not highlight the impact of project communication on project success with mediating role of project communication and moderating role of technological orientation.

### **5.3 Practical Implications**

Present study has numerous practical implications worthy for future research. It will help manager, researchers, practitioners, policy makers, individuals and organizations, to examine how manager's social media usage can link to work engagement. This study suggests that social media usage can increase knowledge, creativity, innovation which will lead to organization performance, productivity and competitive advantage. It would be helpful to organization to analyze how to engage managers, how to increase performance and creativity. The study will enable organization to learn new technology and interfaces and compete with the market through social media usage. The current study will give hands-on knowledge how traditional organization can transform.

The previous studies have done in academia to test the problems of social media usage in academic institutions. Very limited studies have been done in Public or private enterprise to examine its impact on employees. This



study will provide room for future researchers to examine negative impacts of social media usage and technological orientation. Using the findings and results of this study, those project managers can be recruit which have ability to learn new technologies and idea through social media usage and increase the organization productivity, profitability and efficiency. This study will help managers and supervisors to provide innovative environment for their employees. Future scholars will have more opportunities to work on this theoretical model according to our research. Future study can take a unique angle in the setting of Pakistani culture.

## **5.4 Limitation and Recommendation**

This study also contains certain limitations that were encountered during the research process. Data was only gathered from the call centers in Rawalpindi and Islamabad due to time and resource constraints. Only one mediator and moderator were used in this study due to limited time, however other mediators and moderators could also be evaluated using this approach.

The study's sample size is still another drawback. The study's sample size is 463 due to financial cost, yet a bigger sample size could also be investigated. Furthermore, the technique which is used in this study is convenience sampling. In this approach convenience sampling technique approaches to those community for sample which is conveniently located for us. There were numerous issues with data collecting as well because no managers or project managers wanted to take the time to complete the questionnaire.

Detailed interviews could not be collected due to shortage of time. However detailed interviews could have been very beneficial but due to lack of time only questionnaires were filled by the managers. Managers were not willing to provide data and were least interested in filling out the questionnaires. In such case, detailed interview could have been a better option.

## **5.5 Future Direction**

There is always a margin of future work in almost everything. In this study, the impact of social media usage (WhatsApp) on project success was studied along with the mediation of project communication and moderation of technological orientation. This study was conducted in different sectors of private and public call centers of Rawalpindi and Islamabad which makes the way for it to be conducted in other industries also such as telecom etc. Another direction could be the sample size as the sample size of this study was 463 due to shortage of time however a larger sample size could be taken for future research. Furthermore, the impact of social media usage (WhatsApp) on project success was studied using only one mediator and moderator. In future research more than one mediator and moderators can also be used. Different mediators and moderators other than project communication and technological orientation can also be used with the model. The current study is focusing on cross sectional data collection method however in future research longitudinal data collection can also be useful. Detailed interviews can also help in understandings the problems faced in making the team communicate with one another and the strategies adopted by the managers for doing so. Furthermore, Future researchers can also add cultural context in this research. Lastly, the outcomes and significance of this research will help the future researchers who are interested in working on this model with the help of different mediators or moderators.

## **5.6 Conclusion**

This research focuses on the impact of social media usage (WhatsApp) on project success with the mediating role of project communication and moderating role of technological orientation. This study was carried out in Pakistan and covers call centers of different companies of public and private sector in Islamabad and Rawalpindi. Data was gathered from private and public call centers with different companies of Islamabad and Rawalpindi

through a questionnaire survey to know the level of impact of social media usage (WhatsApp) on project success with the mediating role of project communication and moderating role of technological orientation. Total 555 questionnaires were distributed from which only 463 responses came back. These 463 responses were then used for analysis of data of this research study. The results show that the model is significant. There are five hypotheses which are discussed above. All hypotheses were also accepted as the results of data analysis strongly support these hypotheses. The results show strong connection between all the four variables: Project Communication, technological orientation, social media usage (WhatsApp) and Project Success. This research contributes significantly to the existing literature of social media usage (WhatsApp) and project success. Since very limited literature was available on these gaps. Very limited literature was available regarding the link between technological orientation with project communication and social media usage (WhatsApp). Furthermore, this study contributes to the literature in a way that it contains a different moderator between the relationship of project communication and social media usage (WhatsApp). It also consists of a different mediator among social media (WhatsApp) and project success. The outcome of this research will help the call centers offices in Pakistan to realize and to understand the basic reason that plays an important role in the success of the project. The study focuses on the relationship between social media usage (WhatsApp) and project success along with mediating role of project communication and moderating role of technological orientation.

# Bibliography

Abrantes, A. C. M., P.-A. M. e. C. M. P. . S. C. M. Bringing team improvisation to team adaptation: The combined role of shared temporal cognitions and team learning behaviors fostering team performance.

Aga, D., N. Noorderhaven, and B. Vallejo. Transformational leadership and project success: The mediating role of team-building.

Aga, D. A., N. N.-. V. B. (2018). Transformational leadership and project success: The mediating role of team-building. *International Journal of Project Management* 34(5), 806–818.

Alasfour, F. S., . M.-A. (2021). Impact of project management on project success at engineering firms in kuwait. *International Journal of Project Management and Productivity Assessment* 9(2), 68–89.

Ali, M., L. Z. K.-S. S. S. J. . U. R. (2020). Linking humble leadership and project success: The moderating role of top management support with mediation of team-building. *International Journal of Managing Projects in Business* 14(3), 545–562.

Alias, Z., Z. E. Y.-K. . A. N. (2019). Determining critical success factors of project management practice: A conceptual framework. *Procedia Social and Behavioral Sciences* 153(1), 61–69.

Allen, T. J. Communication networks in r d laboratories. *RD Management* 1(1), 14–21.

Anantatmula, V. S., . R.-P. F. (2018). Role of organizational

- project management maturity factors on project success. *Engineering Management Journal* 30(3), 165–178.
- Arago'n-Correa, J. A., G.-M. V. J. . C.-P. E. (2018). Leadership and organizational learning's role on innovation and performance: Lessons from Spain. *Industrial Marketing Management* 36(3), 349–359.
- Atkinson, R. (2020). Project management: cost, time and quality, two best guesses and a phenomenon, it's time to accept other success criteria. *International Journal of Project Management* 17(6), 337–342.
- Avolio, B. J., G. W. L. W. F. O. L.-F. . M. D. R. (2018). Unlocking the mask: A look at the process by which authentic leaders impact follower attitudes and behaviors. *The Leadership Quarterly* 15(6), 801–823.
- Baccarini, D. (2020). The logical framework method for defining project success. *Project Management Journal* 30(4), 25–32.
- Bakker, R. M., B. s. S. K. P. . O.-L. A.
- Balliet, D., . F. D. L. (2021). Ostracism and prosocial behavior: A social dilemma perspective. *Organizational Behavior and Human Decision Processes* 120(2), 298–308.
- Berry, A. J., C. A. F. H. E. P. O.-D. T. . S. C. (2019). Emerging themes in management control: A review of recent literature. *The British Accounting Review* 41(1), 2–20.
- Brinkhoff, A., O. z. O. . . S. G.
- Butt, A., N. M. . S. J. (2018). Project change stakeholder communication. *International Journal of Project Management* 34(8), 1579–1595.
- Buvik, M. P., . R. M. Prior ties and trust development in project teams—a case study from the construction industry.
- Culo, K., . S. V. (2019). Communication management is critical for project success. *Informatologia* 43(3), 228–235.

- Davis, K. (2018). An empirical investigation into different stakeholder groups perception of project success. *International Journal of Project Management* 35(4), 604–617.
- De Oliveira, G. F., . R. J. R. (2019). Stakeholder management influence on trust in a project: A quantitative study. *International Journal of Project Management* 37(1), 131–144.
- Driskell, T., S. E. . D. J. E. (2018). Teams in extreme environments: Alterations in team development and teamwork. *Human Resource Management Review* 28(4), 434–449.
- Dwivedula, R. Bredillet, C. . M. R. (2019). Personality and work motivation as determinants of project success: the mediating role of organizational and professional commitment. *Int. J. Management Development* 1(3), 229–245.
- Fauzi, M. A., A. K. F. R. R. A. J.-J. . S. N. M. (2021). Determinants of project management success: View from an emerging economy. *Journal of Engineering, Design and Technology*.
- Gunduz, M., . A. M. (2020). Critical success factors for sustainable construction project management. *Sustainability* 12(5), 1990.
- Hefley, W. E., . B. M. (2021). Skills of junior project management professionals and project success achieved by them. *International Journal of Information Systems and Project Management* 9(1), 56–75.
- Henderson, L., R. Stackman, and R. Lindekilde (2018, 10). Why cultural intelligence matters on global project teams. *International Journal of Project Management* 36, 954–967.
- Ika, L. (2018). Project success as a topic in project management journals. *Project Management Journal* 40(4), 6–9.
- Irfan, M., H. M. . H. N. (2019). The effect of project management capabilities on project success in pakistan: An empirical investigation. *IEEE Access* 7, 39417–39431.

- Kaplan, A. and M. Haenlein (2012, 04). Social media: Back to the roots and back to the future. *Journal of Systems and Information Technology* 14.
- Mathieu, J. E., H. J. R. v. K. D. . I. D. R. (2018). A century of work teams in the journal of applied psychology. *Journal Of Applied Psychology* 102(3), 452–461.
- Meng, X., . B. P. (2018). The role of the project manager in relationship management. *International Journal of Project Management* 35(5), 717–728.
- Mohammed, S., . A. K. K. (2019). It's time for temporal leadership: In- dividual, dyadic, team, and organizational effects. *Industrial and Organizational Psychology* 7(2), 178–182.
- Mughal, M., B. A. . S. N. (2019). Behavioral factors for it project success in pakistan: Moderating effect of leadership styles. *Management Science Letters* 9(7), 987–996.
- Muller, R., . T. R. (2018). The influence of project managers on project success criteria and project success by type of project. *European Management Journal* 25(4), 298–309.
- Muller, R., T. R. (2019). Leadership competency profiles of successful project managers. *Int. J. Proj. Manag* 28(5), 437–448.
- Muszynska, K., D. V. T. A. a. G. . S. M. (2018). Communication management in project teams—practices and patterns. *Managing Intellectual Capital and Innovation for Sustainable and Inclusive Society* 6(4), 1359–1366.
- Ning, Y. (2018). Combining formal controls and trust to improve dwelling fit- out project performance: A configurational analysis. *International Journal of Project Management* 35(7), 1238–1252.
- Nixon, P., H. M. . P. D. (2019). Leadership performance is significant to project success or failure: a critical analysis. *International Journal of Productivity and Performance Management* 16(2), 204–216.

- Oetzel, J. G. (2018). Effective intercultural workgroup communication theory. *The International Encyclopedia of Intercultural Communication* 25(2), 301–323.
- O’Daniel, M. and A. H. Rosenstein (2018). Professional communication and team collaboration. *journal of communication* 1(2), 201–223.
- Papke-Shields, K. E., B. C. . Q. J. (2019). Do project managers practice what they preach, and does it matter to project success? *International Journal of Project Management* 28(7), 650–662.
- Park, J., L. J. L. H. . T. D. (2019). Exploring the impact of communication effectiveness on service quality, trust and relationship commitment in it services. *International Journal of Information Management* 32(5), 459–468.
- Patrashkova, Volzdoska, R. R. M. S. A. G. S. G. . C. W. (2018). Examining a curvilinear relationship between communication frequency and team performance in cross-functional project teams. *IEEE Transactions on Engineering Management* 50(3), 262–269.
- Piccolo, R. F., . C. J. A. (2018). Transformational leadership and job behaviors: The mediating role of core job characteristics. *Academy of Management Journal* 49(2), 327– 340.
- Pinto, M. B., . P. J. K. (1991). Determinants of cross-functional cooperation in the project implementation process. *Project Management Journal* 22(2), 13–20.
- Pinto, M. B. and J. K. Pinto (2021). Project team communication and cross functional cooperation in new program development. *Journal of Product Innovation Management* 7(3), 200–212.
- Pinto, J. K., S. D. P. . E. B. (2019). Trust in projects: An empirical assessment of owner/contractor relationships. *International Journal of Project Management* 27(6), 638–648.



- Podsakoff, P. M., M. S. B. . P. N. P. (2018). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology* 63(4), 539–569.
- Pollack, J., . M. P. (2019). Testing the impact of targeted team building on project team communication using social network analysis. *International Journal of Project Management* 37(3), 473–484.
- Prencipe, A., T. F. (2021). Inter-project learning: processes and outcomes of knowledge codification in project-based firms. *Res. Policy* 20(3), 1373–1394.
- Ragatz, G. L., H. R. B. . S. T. V. (2022). Success factors for integrating suppliers into new product development. *Journal of Product Innovation Management* 14(3), 190–202.
- Ranawat, H. S., B. G. . T. M. (2018). Critical factors which are affecting the success of construction project in gwalior division. *International Journal of Applied Engineering Research* 13(11), 10108–10114.
- Rezvani, A., C. A. W. A. A. N. M. J. P. J. . Z. R. (2018). Manager emotional intelligence and project success: The mediating role of job satisfaction and trust. *International Journal of Project Management* 34(7), 1112–1122.
- Roberts, T. L., C. P. H. S. P. D. . H. R. T. (2021). The effects of information technology project complexity on group interaction. *Journal of Management Information Systems* 21(3), 223–247.
- Russ, S., R. S. S. N. M. K. D. A. . V. C. (2019). Do safety checklists improve teamwork and communication in the operating room? a systematic review. *Annals of Surgery* 258(6), 856–871.
- Ryan, S., . O. R. V. (2018). Acquiring and sharing tacit knowledge in software development teams: An empirical study. *Information and Software Technology* 55(9), 1614–1624.
- Salman, A., J. M. M. S. M. D. . M. S. A. (2021). An empirical investigation of the impact of the communication and employee motivation on the project

- success using agile framework and its effect on the software development business. *Business Perspectives and Research* (1), 46–61.
- Sarstedt, M., C. Ringle, and J. Hair (2017, 09). *Partial Least Squares Structural Equation Modeling*.
- Shaukat, M. B., L. K. F. S. A. . E. G. (2022). Revisiting the relationship between sustainable project management and project success: The moderating role of stakeholder engagement and team building. *Sustainable Development* 30(1), 58–75.
- Wang, X.-H. F. and J. M. Howell (2020). Exploring the dual-level effects of transformational leadership on followers. *Journal of Applied Psychology* 95(6), 1134–1146.
- Wu, G., L. C. Z. X. . Z. J. (2019). Investigating the relationship between communication-conflict interaction and project success among construction project teams. *International Journal of Project Management* 35(8), 1466–1482.
- Xiong, K., L. W. L. J. C. . W. L. (2019). Employee trust in supervisors and affective commitment: The moderating role of authentic leadership. *Psychological Reports* 118(3), 829–848.
- Yang, L. R., H. C. F. . W. K. S. (2018). The association among project manager's leadership style, teamwork and project success. *International Journal of Project Management* 29(3), 258–267.
- Yap, J. B. H., A.-R. H. . C. W. (2018). Collaborative model: Managing design changes with reusable project experiences through project learning and effective communication. *International Journal of Project Management* 35(7), 1253–1271.
- Zhou, K., C. K. Yim, and D. Tse (2005). The effects of strategic orientation on technology- and market-based breakthrough innovations. *Journal of Marketing* 69, 42–60.

# Appendix

## Questionnaire

*Dear Respondent,*

I am student of MS Project Management at Capital University of Science and Technology, Islamabad. I am conducting research on” Impact of social media (WhatsApp) on Project Success with Mediating Role of Project Communication and Moderating Role of technology orientation”. Your responses will be kept confidential and will only be used for academic purposes only. Your name will not be mentioned as well. Hence; kindly give unbiased opinion to make research successful. However, this questionnaire is required to fill only by Manager/Senior Manager of IT company/Call Centre so that right responses can be received which is essential for the reliable data collection. So, If you are performing your job as a manager in a IT company or Call Centre, kindly fill it out. In other case, you are requested to accept my apology for inconvenience. You may contact me on email given below for any query related to this research work

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This questionnaire survey is comprised of two section and a criterion question. In the section-1, demographic profile of respondents is requested while construct title and their items are requested in the section 2. You are requested to response the construct items on five point likert scale.

### Section 1: Demographics

Section	Demographics
Gender	1- Male 2- Female
Age(years)	1 (20-30), 2 (31-40), 3 (41-50), 4 (More than 50 Years)
Experience(years)	1 (Less than 3 Years), 2 (3-5), 3 (6-10), 4 (More than 10 Years)
Education	1 (Bachelors), 2 (Master),3 (MS/M.Phil.), 4 (Others)
Organization	1 (Public), 2 (Private)

**Section 2: Project Success** Please tick the relevant choices: 1=Strongly Disagree,2=Disagree, 3=Neutral,4=Agree,5=Strongly Agree.

1	The project was completed on time.	1	2	3	4	5
2	The project was completed according to the budget allocated.	1	2	3	4	5
3	The outcomes of the project are used by its intended end users.	1	2	3	4	5
4	The outcomes of the project are likely to be sustained.	1	2	3	4	5
5	The outcomes of the project have directly benefited the intended end users, either though increasing efficiency or effectiveness.	1	2	3	4	5
6	Given the problem for which it was developed, the project seems to do the best job of solving that problem.	1	2	3	4	5
7	I was satisfied with the process by which the project was implemented.	1	2	3	4	5
8	Project team members were satisfied with the process by which the project was implemented.	1	2	3	4	5
9	The project had no or minimal start-up problems because it was readily accepted by its end users.	1	2	3	4	5
10	The project thas directly led to improved performance for the end users/target beneficiaries.	1	2	3	4	5
11	The project has made a visible positive impact on the target beneficiaries.	1	2	3	4	5
12	Project specifications were met by the time of handover to the target beneficiaries.	1	2	3	4	5
13	The target beneficiaries were satisfied with the outcomes of the project.	1	2	3	4	5
14	Our principal donors were satisfied with outcomes of the implementation.	1	2	3	4	5

### Section 3: Technological Orientation

Please tick the relevant choices: 1=Strongly Disagree,2=Disagree,  
3=Neutral,4=Agree,5=Strongly Agree.

1	We use sophisticated technologies in new product development.	1	2	3	4	5
2	Our new products always uses state-of-the-art technologies.	1	2	3	4	5
3	Technologies innovation based on research results is readily accepted in our organization.	1	2	3	4	5
4	Technologies innovation is readily accepted in our program/project management.	1	2	3	4	5

### Section 4: Project Communication

Please tick the relevant choices: 1=Strongly Disagree,2=Disagree,  
3=Neutral,4=Agree,5=Strongly Agree.

1	Every one participates.	1	2	3	4	5
2	Every one has a chance to express their opinion.	1	2	3	4	5
3	We listen to each individual's input.	1	2	3	4	5
4	Members feel free to make positive and negative comments.	1	2	3	4	5
5	Even though we don't have total agreements, we do reach a kind of consensus that we all accept.	1	2	3	4	5

### Section 5: Social Media Usage

Please tick the relevant choices: 1=Strongly Disagree,2=Disagree,  
3=Neutral,4=Agree,5=Strongly Agree.

1	WhatsApp is part of my everyday activity at work.	1	2	3	4	5
2	I am proud to tell people I'm on WhatsApp at work.	1	2	3	4	5
3	WhatsApp has become part of my daily routine at work.	1	2	3	4	5
4	I feel out of touch when I haven't use WhatsApp for a while at work.	1	2	3	4	5
5	I feel I am part of the WhatsApp community at work.	1	2	3	4	5
5	I would be sorry if WhatsApp shut down at work.	1	2	3	4	5