THE IMPACT OF INTERNAL COMMUNICATIONS FOR ORGANIZATIONAL SUCCESS IN MANAGING PROJECTS

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The Impact of Internal Communications for Organizational Success in Managing Projects

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DECLARATION

I hereby declare that:

(1) This MKMA29906 Research Project is the end result of my own work and that due acknowledgement has been given in the references to all sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) The word count of this research project is _____26,700_____ .

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Date: 22 April 2016

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DEDICATION

This research project is dedicated to my beloved parents, brother, sister, and wife, whose supports and encouragement had made everything possible.

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ABSTRACT

Internal communication is the need of today's organizations, and sustainability is a major challenge for all. Internal communication is among one of the most important factors for organizational success in managing projects. In this research study, researcher focuses on internal communications using technology among employees in order to manage projects successfully in an organization through online and offline communication link.

First, researcher will explain and explore the correlation between offline direct internal communication link, such as face-to-face meeting; and organizational performance in managing projects. Second, researcher will look into the correlation between offline indirect internal communication link, for instance, written communication (letter, fax, memo) and organizational performance in managing projects. Thereafter, researcher will distinguish the correlation between online direct internal communication, for example, electronic communication (email, sms, WhatsApp's) and organizational performance in managing projects. Then, researcher will analyze data to determine the correlation between online indirect internal communication like telephone calls, video conferencing and organizational performance in managing projects. Lastly, the research study will able to describe the implications, limitation and recommendation of the findings through the analysis.

CHAPTER 1

RESEARCH OVERVIEW

1.0 Introduction

This chapter proposes a research study that will add to an understanding of the impact of internal communications among employees for organizational success in managing projects. Specifically, the study aims to examine the relational factors on internal communication networks among employees in an organization toward managing successful projects. Nowadays, big organizations such as Petronas Malaysia, Technip Group of Companies and even medium size company make huge investments continuously to establish virtual information and communication technology (ICT) platforms to facilitate employees' internal and external communication and, consequently; improve the performance of employees in managing projects (Gartner, 2008). Money have been spent trillions on such ICTs serve as a major source of motivation for the research study, aimed to understand the success of information systems, (Bajwa, Raj, & Brennan, 1998; Thong, 1999; Thong, Yap, & Raman, 1994; Thong & Yap, 1996; Venkatesh, Morris, Davis, & Davis, 2003). Therefore, research that focuses in explaining organizational success in managing projects will be a valuable research and practice. The six main areas which will be discussed in this chapter include: the background of the study, the problem statement, the research objectives, the research questions, the hypotheses of the study and lastly the significance of the study follow by the conclusion of this chapter.

1.1 Background of the Study

The role play by internal communications in an organization is tangible as an effective tool in project management. Every aspect of business requires a good communication network. It is regarded as the foundation upon which organization of business is built. In this case, the major executive function is to develop and maintain an effective system of communication of an organization in managing successful projects. Communication also serves as link between various parts of an organization. However, it is not exaggeration to say that communication is the means by which organized activities is unified fit oriented organization, the transfer of information from one individual to another is absolute essential.

At times, it is surprising to hear such a side comment as regard company progressing day-to-day while some others are not effective and retarded growth wide due to ineffective communication These without any industrial disharmony are not farfetched but are in most cases neglected by those who form the crew in the unprofitable organization. (Gartner, 2008) For a business organization, either private or public to successful meet up with it targeting the importance of effective communication should not be neglected.

Internal communication in project management is among one of the most important success factor. It helps the project managers to take right decisions, implement the right strategies and complete a project on time and within budget. The project manager should have possesses the skills in order to ensure the deliverables are correctly handed out by measuring internal communications and tracking its development as a crucial asset (Mihaela & Danut, 2013). In this research study, the goals are to show how essential the internal communication in managing a project and internal communication analysis model based on the characteristics of communication. Each communication, for example, by its characteristics reflect the behaviors of the internal communication of a project.

Communication is both ordinary life and management, such a complex concept involving all senses, experience and feelings. It is the action of people talking, listening, seeing, feelings and reacting to each other experience and their environment. Certainly, internal stimuli like emotion interest, experiences sentiment and others contribution factors cause to perceive actions the word in specific ways. In a business context, where people in an organization exchange information regarding the operational techniques of exchanging, between employee, which are known as internal communication, serve some useful purposes in a business organization, communication is often described as the most vital tools of management. Internal communications help management in solving some problems faced by management. It can even be regarded as the foundation upon which organization and administration must be built. Communication serves as tools in decision-making theory. It builds mutual understanding area of conflict and creating industrial harmony.

The process in which flowing of information between persons in an organizations are considered internal communication (Mohr, Fischer, & Nevin, 1996). It has been termed the "life-blood of organizations" (Rogers & Agarwala-Rogers, 1976). Varies in degrees of conventionality, regularity, and the tools that are being applied form the communication process (e.g. email, social media software application, face-to-face meetings, telephone calls and databases). In addition, the complexity of the direction, content, and communication varies (Hoegl & Gemünden, 2001). Internal communication plays a vital role in performance of the organizations because it can affect new product development, employee satisfaction, brand awareness, decision making, customer interaction consistency and effectiveness in development of innovative (Cleaver, 1999; de Chernatony & Segal-Horn, 2003; Ernst, Hoyer, & Rübsaamen, 2010; Gemünden, Salomo, & Hölzle, 2007; Smythe, 1996; Stayer, 1990).

Information overload (Edmunds & Morris, 2000) is one of the several barriers to effective internal communication being discussed in existing literature. Others, namely absence of clarity in communication (Robson & Tourish, 2005), difficulty to segregate between useful and useless information (Bovée, Thill, & Schatzman,

2003), cultural differences (Mounter, 2003), and getting the right information at the right time become a challenge. To improve internal communication, an array of technological solutions, such as instant messaging, portable communication devices and group meeting systems have been developed. However, these techniques are not used efficiently (Peters & Fletcher, 2004). In addition, popularizing internal communication by building a common frame of reference found to be giving a proven result (Eskerod & Riis, 2009).

Has been recognized in prior studies the significance of internal communication in the marketing, selling, and management of projects (Ajmal & Koskinen, 2008; Goczol & Scoubeau, 2003; Henderson, 2008; Lecoeuvre-Soudain & Deshayes, 2006; Lehtimaki, Simula, & Salo, 2009). Negative impacts on project team members' satisfaction and effectiveness can be noticed through inefficient internal communication (Henderson, 2008). In addition, lack of internal communication interface allows project managers seem disintegrated to the customer (Natti & Ojasalo, 2008). Thus, essentially abuse customer relationships might cause by inadequate internal communication (Lecoeuvre-Soudain & Deshayes, 2006). Despite highlight the importance of the project management of interpersonal communication, only a few studies with particular emphasis on the issue.

1.2 Problem Statement

The issue, as part of the overall decisive communication or organizational communication of whom in the organization owns internal communication is important. Academician has been at the leading edge of encouraging the integration of internal and external communications, so there will be a more consistent message to all stakeholders, including employees. Practitioners have been lagging to implement this in their organizations while this has been a primary focus for academician. That is, internal communications was considered a range of human resources, while external communications was responsible for external communications. Both internal and external communication cannot be created in silos in order for all stakeholders to recognize a consistent message from the organization, they must be integrated in order to be most effective. This

research study aims to incorporate technology into the representation of the concepts of interest in relating social networks communication to promote the success of the organizations toward understanding of organizational success in managing projects, which is a fundamental assets of technology (DeLone & McLean, 1992; DeLone & McLean, 2003). It also targets to find out the extent to which employees had implemented internal communications as a part of their job responsibilities. This research determines between an online internal communication network (e.g., where employees interact using a variety of communication technologies available to them in their company); (Dennis, Fuller, & Valacich, 2008), and an offline internal communication network (e.g., where employees interact face-to-face), to capture the role of technology, particularly different communication technologies used for creating and maintaining social networks. This research seeks to understand the independent and interdependent roles of online and offline internal communication network links in affecting organizational success in managing projects by distinguishing between online and offline internal communication networks. The research study is that who have a lot of employee relations in both networks will be able to take full advantage of the complementary strengths of the two networks while minimizing both networks' limitations and constraints. This research further explains how they enable or constrain employees' access to valuable resources and differentiate between direct and indirect links in both the online and offline internal communication networks.

1.3 Research Objectives

This study investigates the relationship between internal organizational communication and employee involvement. A two-way exchange of information forms the internal communication foundationally. Internal communication occurs between supervisors and subordinates, between managers and employees, among peers. Internal communication promotes employee engagement, is "the degree to which an individual is attentive and absorbed in the performance of their roles". Earlier studies have observed that managers' internal communication with their employees spurs their subordinates to give better service to customers. Employees' learning and aptitudes about both their employment and the organization furnish

them with the chance to end up organizational supporters with the clients, who thusly can improve the company's reputation. Internal communication enhances primary concern results for the organization including expanded efficiency and gainfulness. Internal communication helps efficiency by streamlining organizational parts and obligations. Pounsford (2007) found that internal communication strategies, for example, narrating, casual communication, and honing prompt to more prominent employee engagement, and in addition expanded levels of trust in the organization and expanded income of more noteworthy consumer loyalty. Besides, Chong (2007), contemplating Singapore Airlines, found that concentrating on up close and personal dialogue in the middle of management and staff helped the airline convey its image guarantee to its customers through its employees.

The following are the research objectives examined in this research topic:

RO1a: To examine the offline direct internal communications in relation with successfully managing projects.
RO1b: To examine the offline indirect internal communications in relation with successfully managing projects.
RO1c: To examine the offline indirect internal communications in relation with offline direct internal communications and successfully managing projects.

RO2a: To examine the online direct internal communications in relation with successfully managing projects.
RO2b: To examine the online indirect internal communications in relation with successfully managing projects.
RO2c: To examine the online indirect internal communications in relation with online direct internal communications and successfully managing projects.

RO3: To examine the offline direct internal communications in relation with online direct internal communications and successfully managing projects.
RO4: To examine the offline indirect internal communications in relation with online indirect internal communications and successfully managing projects.

RO5: To examine the offline direct internal communications in relation with online indirect internal communications and successfully managing projects.
RO6: To examine the offline indirect internal communications in relation with online direct internal communications and successfully managing projects.

1.4 Research Questions

After identifying the research objectives that mentioned previously, the research questions to be answered in the research project are:

RQ1a: How does offline direct internal communications in relation with successfully managing projects?
RQ1b: How does offline indirect internal communications in relation with successfully managing projects?
RQ1c: What is the relationship of offline indirect internal communications in relation with offline direct internal communications and successfully managing projects?

RQ2a: How does online direct internal communications in relation with successfully managing projects?
RQ2b: How does online indirect internal communications in relation with successfully managing projects?
RQ2c: What is the relationship of online indirect internal communications in relation with online direct internal communications and successfully managing projects?

RQ3: What is the relationship of offline direct internal communications in relation with online direct internal communications and successfully managing projects?
RQ4: What is the relationship of offline indirect internal communications in relation with online indirect internal communications and successfully managing projects?
RQ5: What is the relationship of offline direct internal communications in relation with online indirect internal communications and successfully managing projects?

RQ6: What is the relationship of offline indirect internal communications in relation with online direct internal communications and successfully managing projects?

1.5 Hypotheses of the Study

The hypotheses that are corresponding to the research questions are developed as follow:

H1a: There is a significant positive relationship between offline direct internal communications and successfully managing projects
H1b: There is a significant positive relationship between offline indirect internal communications and successfully managing projects
H1c: There is a significant positive association between offline indirect internal communications to offline direct internal communications and successfully managing projects

H2a: There is a significant positive relationship between online direct internal communications and successfully managing projects
H2b: There is a significant positive relationship between online indirect internal communications and successfully managing projects
H2c: There is a significant positive association between online indirect internal communications to online direct internal communications and successfully managing projects

H3: There is a significant positive association between offline direct internal communications to online direct internal communications and successfully managing projects
H4: There is a significant positive association between offline indirect internal communications to online indirect internal communications and successfully managing projects

H5: There is a significant positive association between offline direct internal communications to online indirect internal communications and successfully managing projects

H6: There is a significant positive association between offline indirect internal communications to online direct internal communications and successfully managing projects

1.6 Significance of the Study

The research is expected to make important theoretical contributions. First, by understand the role of technology in affecting job performance in managing projects, it contributes to information system research. Second, by providing a more distinction view of the role of social networks in explaining organizational success in managing projects, it contributes to organizational behaviour research. Third, by distinguishing between online and offline networks as well as direct and indirect links, it advances social networks research; thus responding to the appeal of finer-grained research network conceptualization (Cross, Borgatti, & Parker, Beyond Information: Relational Content of the Advice Network, 2001) and complementing other such work (Mehra, Kilduff, & Brass, 2001; Yang & Tang, 2003).

Sustainability work is not only the responsibility of senior management, which requires a collective effort of each member of an organization. And it is only possible through effective internal communication. As defined by (Chong, 2007), “effective internal communication is the first frontier in the battle for the customer”.

Evidences are able to be found in past researches about the significance of effective internal communication. For example, (Barrett, 2002) emphasizes, face-to-face communication is the best way to reach employees than counting on indirect channels such as electronic media. Vaaland and Heide (2008) highlights on bottom-up communication. Furthermore, Welch & Jackson (2007) claims that, employees should be segmented based on structural levels of demographics, rather

than treating them as a single public. This ensures relevant and meaningful information as possible obtained by the targeted audience. Significant contribution are noticeable by conducting sustainability communication studies that center on employees as a key stakeholder group, from those findings.

One of the most demanding tasks in any organization lies in keeping all communication routes as open as possible. They are the vain and arteries that carrying the organization lay blood. Therefore, this study is aimed at find ways of achieving efficiency in that line of managing projects. Simply put, the purpose of this study among others, is to examine the importance of communication network in managing projects successfully and to suggest ways of improving them.

1.7 Conclusion

In conclusion, this research study will contribute to organizational success in managing projects in viewing more frequent usage of technology in internal communication such as, email, social electronic media, etc. First, by understand the role of technology in affecting job performance in managing projects, it contributes to information system research. Second, by providing a more distinction view of the aspect of social networks in explaining organizational success in managing projects, it contributes to organizational behaviour research. Third, by differentiating between online and offline systems correlation as well as direct and indirect network, it advances social networks research; thus responding to the appeal of finer-grained research network conceptualization

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

In this chapter, the first section will be comprehensive review of relevant articles, journals, and related past research from secondary sources on the topic of the impact of internal communications for organizations. The second section followed by the review of relevant theoretical models. A proposed conceptual framework will be developed based on the research objectives and research questions in the third section. Finally, in the last section, hypotheses on each of the components will be developed and be tested to review the relationship toward organizational success in managing projects. Previously mentioned, organizations continue to make huge investments to build virtual information and communication technology (ICT) platforms to facilitate employee internal communication and, consequently, improve the performance of employees in successfully managing projects (Gartner, 2008). Money have been spent trillions on such ICTs serve as the major cause of motivation for research study, aimed at understanding the success of information systems (Bajwa, Raj, & Brennan, 1998; Thong, 1999; Thong, Yap, & Raman, 1994; Thong, Yap, & Raman, 1996; Thong, Yap, & Raman, 1997; Thong & Yap, 1996) (Venkatesh, Morris, Davis, & Davis, 2003).

2.1 Review of Literature

This section seeks to identify internal communications in contemporary literacy practice related to the key issues. The purpose is to support the capacity of internal communication practitioners will need to effectively do their jobs and for further research, in order to provide a framework for the analysis. The analysis aims to evaluate the internal communication practitioners described role is the role that matches the analysis of contemporary texts identify an individuals are being recruited. The research reviewed public relations, internal communication and employee communications text.

This research study has reviewed academic published texts and used e-journal access to search communication and business publications in preparing this literature review. Keyword searched such as “business success”, “project success”, organizational success”, and “internal communications”, was conducted. In the following texts, literacy criticism in the emerging themes are being discussed.

2.1.1 The Evolving Aspect

One that is seen to be undergoing and have undergone considerable change is the aspect of internal communications (Baines, Egan, & Jefkins, 2004; Keenan & Hazelton, 2006; Therkelsen & Fiebich, 2003). Its various iterations described as “eras” (Theaker, 2001) include those of entertaining employees (1940s), informing (1950s) and persuading (1960s) to open communication (1980s to date) (Theaker, 2001). Concentrated on challenging and stimulating employees, managing change and gaining employee engagement and commitment are today’s internal communication practitioners’ objectives (Tourish & Hargie, 2004; Smith & Mounter, 2005). The objective has moved from controlling and coordinating individual, through giving data, making declarations and supporting industrial relations, to support the advancement of an adaptable work environment which adjusts to improve, looks for development, offers learning and know-how, creates thoughts and includes individuals in accomplishing key objectives (Keenan & Hazelton, 2006; Smith & Mounter, 2005; Tourish & Hargie, 2004).

People in organizations and how to influence employee, education, learning ability, adaptability, attitudes and behaviors are aspects that internal communication practitioners need to understand. They must be able to measure an organization's communications environment (L'Etang, 2008) and analyze the existence of internal organizational cultural, political and relational dimensions (Conrad, 1994). This is a complex and challenging aspect. This is illustrated by Conrad and Poole's assertion that "strictly rational theories of decision making simply do not reflect the complex maze of personal, interpersonal, political, and ethical considerations that employees incorporate into their choices." (Conrad & Poole, 2005).

Therefore this development seems to require not only different skills application at every stage, but the acquisition of support employees in dealing with such complex skills. It can be said, entertaining and informing repeatedly involve certain technical skills (Grunig & Hunt, 1984) while persuading employees, gaining employee commitment, challenging employees and maintaining open communications demand more strategic understanding and involvement. This is a strategic approach to internal communication and practices as an important issue to which leads to the adoption of high performance.

There has not been a significant change while some organizations have implemented this development and the strategic support that internal communications can offer (Smith & Mounter, 2005). Continuation of the technical mode is observed in the practice of public relations (Theaker, 2001). It can, therefore, be generalized that it has expanded and the skill set grown, instead of shifting the focus of internal communications practice. Practitioners still need to be able to use the traditional craft skills, design messages (Bambacas & Patrickson, 2008) and be "innovative, entertaining and face-to-face" (Farrant, 2003). Importantly, it would appear that today's internal communication practitioner need to have a more highly developed skills and a wider range of application of these multi sensitively capacity (Keenan & Hazelton, 2006).

Acknowledgement in literacy review that the aspect of internal communications is varied, multifaceted and demands a range of competencies from its practitioners are what the research study sees here. Therefore, internal communications is deemed to have contributed, increasingly at a strategic level; to the success of the tactical aspects of the organizations. The literature review also acknowledges that the development of very different functions across organization.

During expected changes in the process of internal communication of impact has been empirically demonstrated and practitioners mutually agreed. The empirical picture appeared indicated that organizational change and communication process are associated with countless of process (Lewis, 1999). Communication has positive correlation with many organizational outputs like organizational commitment, performance, organizational behaviors, and job satisfaction shown from recent studies about internal communication. Internal communication failure, in contrast may cause unwanted results like stress, job dissatisfaction, low confidence, reduce organizational commitment, turnover intentions, and absence. This may cause a negative impact to organization (Zhang & Agarwal, 2009). Organizational shifts processes in internal communication, reduces resistance to change. The change-effort turns out to be more productive when resistance to change levels is low within an organization. Change the internal communication plan is dependent on the ability of the organization to change the individual performance of each employee (Goodman & Dean, 1982; Robertson, Roberts, & Porras, 1993; Tannenbaum, 1971). Conveyance of information to these employees on future change is a crucial and integrative part of the change strategies since organizational change introduces variation of tasks given to individual employees.

2.1.2 Commitment and Engagement

One of the most commonly cited aspects of the internal communications function is that of development of employee commitment, involvement and participation in support of achieving business goals (Arnott, 1987; Welsh & Jackson, 2007; Barrett, 2002). This is important as organizational success is relying on employee

support (Therkelsen & Fiebich, 2003) and employees who are committed to the organization personally identifiable are concerned about its future and loyal to it.

Welch and Jackson (2007) see non-task internal communication as having "a role to play in developing employee commitment and trust" (L'Etang, 2008) points to a positive communication environment and communication linkages between a building consensus. The existence of positive relationships in organizations is the requirement for the participation of employees. These depend on two-way participative communications (Stroh & Jaatinen, 2001).

2.1.3 Technological Evolve

Organization relations has been changed from the development of new technologies (Springston, 2001). In the field of internal communications, the potential of the network is still an emerging concept applies equally (Denton, 2006). The internal communication technology can improve access, increase speed and facilitate global communication (Holtz, 2003). It is not just a matter of grasping the technological aspects. The skills and knowledge to make good decisions about technology use for effective communications are skills that internal communication practitioners need to master (Ryan, 1999) and to develop that knowledge with the technology.

Technology offers the opportunity to internal communications practitioners in order to find different ways of reaching and communicating with employees. Internal business server has being used as a filing cabinet publishing and retrieval of documents for ongoing dialogue channels, allowing employees to share information and work together to develop (Cheney, Christensen, Zorn, & Ganesh, 2004) as well as delivering multimedia.

Internal communications using technology need to run more traditional channels such as face-to-face and print communication (Holtz, 2003). Making decisions about channel choice and judge the readiness of an organization to accept technological solutions to internal communication problems are part of internal

communications practitioners' duty, balancing technological concerns and the humanity of employees (Keenan & Hazelton, 2006).

The development of the internal business server has made editors, within organizations; powerful gatekeepers and agenda setters (Lehmuskallio, 2008). They need the knowledge and skills to perform this role effectively. In summary, what kind of research study are seeing here is an increasing need for internal communication practitioners to. If not, it must understand the function of technical issues related to information technology systems, with the consideration of the people in the organizations understand the behavior and cultural aspects (Keenan & Hazelton, 2006).

2.1.4 Planning

It is also acknowledged that greater awareness and broader knowledge is required in the more complicated internal communications arena whilst the importance of understanding stakeholders for public relations is highlighted (Smith & Mounter, 2005). Internal communication practitioners need to plan for variety stakeholder groups (Welsh & Jackson, 2007), maintain both upwards and downward communication, analyze internal communications condition (L'Etang, 2008) and the internal environment that creates it (Welsh & Jackson, 2007). These includes the corporate culture, communications systems and the psychological contract and constantly update their understanding of what employees want (Farrant, 2003). Internal communication practitioners need to understand how organizational processes work, how to analyze effective organizational environmental and cultural, and how to ensure two-way communication to flow in organizations.

2.1.5 Strategic Approach

Internal communication using technology is the exchange of data that helps people interface with innovation, advance work environment objectives, and solve complex issues. People live in a world where many of the everyday actions depend on complex but usable information. People need clear, easy-to-use

instructions and rely on usable technical communication in managing projects. In addition, technical communication is also used in more specialized settings (Farrant, 2003).

All internal communication utilizing technology requires some degree of research, even if that research merely entails checking a fact or consulting a colleague before writing a memo, letter, or email (Barrett, 2002). Most major decisions in the workplace are based on careful research, often with the findings recorded in a written report, in a long memo, on a website, or in some combination of documents. The types of research that will perform as a technical communicator depend largely on our workplace assignment.

Internal communications using technology must be strategic, support strategic objectives and focus on relationships in order to make a full contribution (Barrett, 2002; Welsh & Jackson, 2007). It takes part in both individual and functional level of the formation of business planning and performance management process (Barrett, 2002). Such issues, as strategic understanding, business planning and process management are the implications for the competencies.

In every literature review found, developing internal communication competencies emerges as a subject. Employees connect significantly to internal communication with immediate managers or supervisors (Smith & Mounter, 2005) and employee perspectives of immediate manager relationships influence their levels of fulfillment, responsibility and team performance (Keenan & Hazelton, 2006). Internal communication practitioners, in this way, need to organize understanding organizational communication parts, trying to draw in those with obligations in communicating successfully and giving applicable backing through training and ability advancement (Barrett, 2002).

Compelling internal communication among employees is vital to accomplishing fruitful change in organizations (Barrett, 2002; Cheney, Christensen, Zorn, & Ganesh, 2004; Kitchen & Daly, 2002). Organizational change employee communications programmes must propel employees' support for the new course,

empower elite, limit false impressions and bits of gossip and adjust employees behind the organization (Barrett, 2002). Internal communication has a part to play at the plan, usage and regulation periods of a change programme as well as in the distribution stage (Cheney, Christensen, Zorn, & Ganesh, 2004). As employees' advancement through change, communication plays an imperative but distinctive part at every stage (Theaker, 2001). The stages are from creating consciousness of environmental change and a comprehension of an organization's advancing points (Welsh & Jackson, 2007), giving realities and imparting the comprehensive view, listening and indicating worries amid periods of foreswearing and outrage, conveying the vision and including and, as employees start to acknowledge the change, to fabricate eagerness, give input and move to make commitment to the new way.

Internal communication practitioners must have some knowledge of the dynamics of a change process to fulfil this role effectively and be seen as "facilitators of change not just as producers of publications" (Barrett, 2002). The specialty side stay vital over the organization relations enclosure (Ahles, 2004; McCleneghan, 2006). Clarity of composing and media decision are vital to employees' daily duties (Bambacas & Patrickson, 2008). The best employee communications need to be relevant, innovative, entertaining and face-to-face (Farrant, 2003). There remains a key part for employee internal communication in advising and teaching employees and an obligation on internal communication practitioners of interpreting corporate messages for all employees (Barrett, 2002).

Models that give a sign of internal communication practitioners' abilities were incorporated in this literature review. These included those proposed by (Keenan & Hazelton, 2006; Dewhurst & Fitzpatrick, 2007) and a joint working party comprising the Chartered Institute of Public Relations' Internal Communication Alliance, Communicators in Business and International Association of Business Communicators and the Internal Communication Association (Smith & Mounter, 2005). Key topics are tended to here.

Internal communications has a key part to play (Smith & Mounter, 2005) and requires to concentrate on organizational results and empower individual employees to see the relationship between their part and those results (Keenan & Hazelton, 2006; Dewhurst & Fitzpatrick, 2007). Brand management is additionally referenced (Smith & Mounter, 2005), just like the significance of organizational culture to the internal communications part (Smith & Mounter, 2005).

The significance of connections and relationships building are normal subjects (Smith & Mounter, 2005; Keenan & Hazelton, 2006; Dewhurst & Fitzpatrick, 2007). Instructing, counseling and preparing is stressed alongside with practices (Keenan & Hazelton, 2006). Practitioners should have the capacity to work steadily and have facilitation skills (Smith & Mounter, 2005).

Journalistic abilities keep on having significance (Dewhurst & Fitzpatrick, 2007; Smith & Mounter, 2005) as messages must be clear and intense. Organizational skills connected with occasion and project management are likewise referenced (Smith & Mounter, 2005) alongside with the requirement for imagination, innovativeness, advancement and design (Dewhurst & Fitzpatrick, 2007).

The part of the internal communications practitioner as a planner is a typical component (Dewhurst & Fitzpatrick, 2007; Smith & Mounter, 2005) with the need to attempt research, assess, review and oversee channels (Smith & Mounter, 2005) and give chances for criticism. Channel administration and dealing with the stream of communications is referenced (Smith & Mounter, 2005).

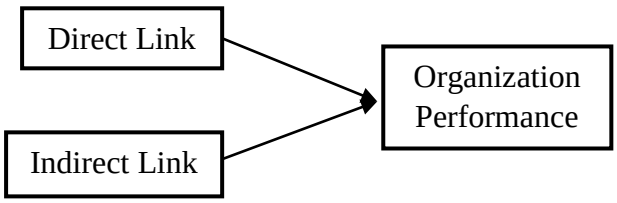
Skills in the master or sectorial area is likewise highlighted (Dewhurst & Fitzpatrick, 2007; Smith & Mounter, 2005) as is proficient information of, for instance, communications law and regulation (Smith & Mounter, 2005). The models point to various credits that are pertinent to this study. Internal communication practitioners are relied upon to be activity and objective orientated (Dewhurst & Fitzpatrick, 2007), to have the capacity to function admirably as a component of a group (Smith & Mounter, 2005) and to have affecting aptitudes

(Smith & Mounter, 2005). The requirement for internal communications to be incorporated inside of the more extensive public relations exertion and in addition with other organizational processes, including Human Resources and Marketing is likewise highlighted (Smith & Mounter, 2005; Welsh & Jackson, 2007).

2.2 Review of Relevant Theoretical Models

The theoretical framework is the foundation on which the entire deductive research study is based. It is a logically developed, described, and elaborated network of associations among the variables deemed relevant to the problem situation and identified through such processes as interviews, observations and literature review. Experience and intuition also guide the development of the theoretical framework. The relationship between the literature review and the theoretical framework is that the former provides a solid foundation for developing the latter. That is, literature review identifies the variables that might be important, as determined by previous research findings (Welsh & Jackson, 2007).

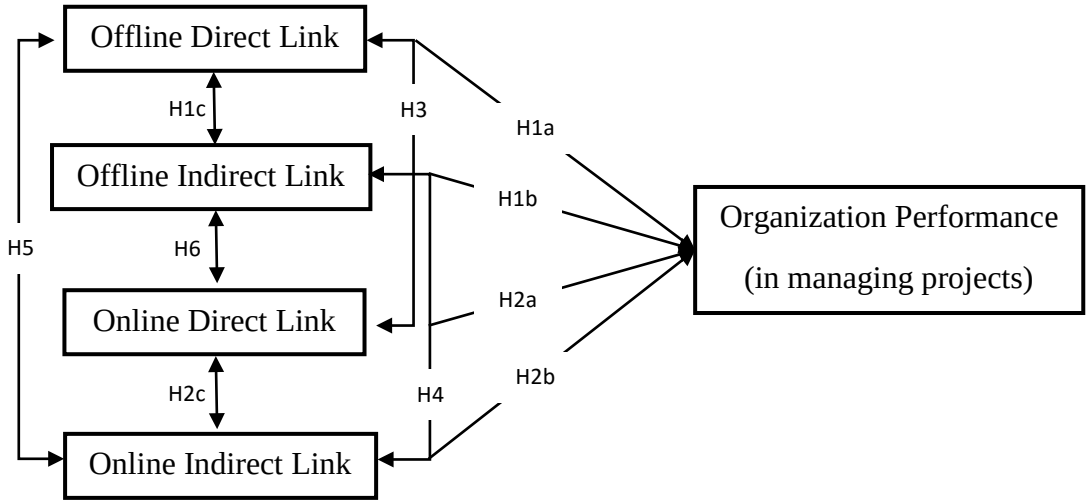
Figure 2.2.1: Relevant Theoretical Model



Source: Welsh & Jackson, 2007

2.3 Proposed Conceptual Framework

Figure 2.3.1: Proposed Conceptual Framework



Source: Developed for research

The independent variable of this research study is the effectiveness of internal communication utilizing technology within an organization that includes offline direct internal communication system link, offline indirect internal communication system link, online direct internal communication system link and online indirect internal communication system link. These variables will affect the dependent variable, which is the organization performance/success in managing projects.

2.4 Hypotheses Development

Once researcher identified the important variables in the situation and established the relationship among them through logical reasoning in the theoretical framework, researcher is in the position to test whether the relationship that have been theorized do, in fact, hold true. This research aims to develop three different sets of hypotheses that relate network link, conceptualized to contain both direct and indirect link in online and offline networks, to organization performance in managing projects. The first set of hypotheses suggested about the impact of offline links. The second set of hypotheses suggested about the impact of online

links. The last set of hypotheses suggested about the interaction of online and offline linkages. To explain the relationships between network links and organizational success in managing projects, the research incorporates mechanisms related to resource access into the hypotheses development. These mechanisms are not the development analyzed in the exploration demonstrate but rather they serve as the building pieces of the hypothesis improvement in this research paper (Dennis, Fuller, & Valacich, 2008). Each mechanism is evaluated as high, medium, or low on every kind of connection to show their contrasts concerning capability of getting to the resources. High is connected with stronger capability, trailed by medium and low.

H1a: There is a significant positive relationship between offline direct internal communications and successfully managing projects

Among the different mechanisms recognized, the research rates quick receipt of data, data trustworthiness, solid link, system homophile, and transmitting logical data as high for offline direct links. Offline direct links are prone to bring in quick receipt of data and keep up an abnormal state of data honesty since data needs to venture to every part of the most brief separation from the source to the objective (Burt, 1992). At the point when two individuals communicate face-to-face directly, they can better elucidate false impressions (Dennis, Fuller, & Valacich, 2008), thus making communication easier. Simplicity of communication prompts to high recurrence and force of collaborations that describe solid links. At the point when individuals connect every now and again, they are liable to know each other better, clinging to the individuals who are alike to themselves (Ibarra, 1992; McPherson, Smith-lovin, & Cook, 2001). At the end of the day, offline direct links are liable to help employees build up a high level of homophile. Given that up close and personal communication can transmit nonverbal and paraverbal prompts, for example, body language and facial expression, get individual center, and elucidate mistaken assumptions (Becker-Beck, Wintermantel, & Brog, 2005; Dennis, Fuller, & Valacich, 2008), offline direct links are useful for transmitting relevant data. Each of these qualities of direct offline links will contribute emphatically to organizational success in managing projects.

H1b: There is a significant positive relationship between offline indirect internal communications and successfully managing projects

Among the different mechanisms recognized, the research rates weak links, upkeep cost, system achieve, and third-party reconnaissance as high for offline indirect links. At the point when two individuals are associated by means of middle person (e.g. offline indirect links), their internal communication turns out to be less advantageous in light of the fact that each message transmitted between these two individuals needs to go through the mediators. Such burden makes it troublesome for these two individuals to convey frequently, in this manner bringing about low recurrence and force of communication that describes weak links. Offline indirect links are likewise inexpensive to keep up on the grounds that employees who are indirectly associated in the offline network do not need to invest much time and energy to communicate with each other contrasted with employees who are specifically associated (Ahuja, 2000; Burt, 1992; Hansen, 2002).

Low upkeep expense can likewise prompt a higher level of system span because of the minimal cost of extending relationships. Employees who are associated indirectly in the offline network will experience third parties and therefore will probably be liable to be subject to third-party observation (Reagans & McEvily, 2003). Each of these qualities of indirect offline links will contribute decidedly to organizational success in managing projects.

H1c: There is a significant positive association between offline indirect internal communications and offline direct internal communications

H2a: There is a significant positive relationship between online direct internal communications and successfully managing projects

Among the different mechanisms recognized, the research rates quick receipt of data, data trustworthiness, solid links, determines temporal and spatial limitations,

transmits data in parallel, and reports and recovers data as high. At the point when employees convey directly online, they are prone to get data faster than they do offline in light of the fact that in an online system, employees do not need to invest time and energy in booking up close and personal meetings. Rather, they can invest more time associating with different employees utilizing diverse online communication media and creating more grounded connections in the online system. Online direct links are prone to make employees obtain data of high trustworthiness in light of the fact that there are no mediators to transmit the data. Also, employees can straightforwardly trade data by utilizing asynchronous communication media, for example, email and mobile phone texting, to defeat the temporal and spatial limitations. Some computer-interceded innovations bolster parallel discussion such that employees who convey directly online can listen to or gain from alternate points of view in a convenient way (Dennis, Fuller, & Valacich, 2008). Online communication is good to record data in light of the fact that digital storage gadgets have bigger memory limit than people do. Once the data is kept in a very much planned digital storage gadget, for example, an advanced database management system, it is less demanding and quicker for employees who convey directly online to explore to the data. Each of these qualities of online direct links will contribute decidedly to organizational success in managing projects.

H2b: There is a significant positive relationship between online indirect internal communications and successfully managing projects

Among the different mechanisms recognized, the research rates weak links, upkeep cost, system achieve, third-party reconnaissance, data trustworthiness, resolves temporal and spatial limitations, and reports and recovers data as high for online indirect links. Employees who communicate indirectly online are less inclined to convey frequently to communicate often because it is inconvenient to communicate via mediators. Another explanation behind the low level of communication is that online communication media do not ordinarily transmit relevant data sufficiently. Subsequently, employees may think that it is hard to see each other when conveying indirectly online. Given that weak links portray

connections of rare communication (Granovetter, 1973; Hansen, 1999; Hansen, Mors, & Lovas, 2005; Haythornthwaite, 2002; Levin & Cross, 2004), online indirect links can be viewed as weak links. Like online direct links, online indirect links are reasonable to keep up because employees do not need to manage with face-to-face meeting logistics.

Hence, employees are liable to extend their system reach. Like offline indirect links, online indirect links connect employees through third parties who are liable to perform an observation part. Like online direct links, data exchanged by means of online indirect links can keep up high trustworthiness in light of the fact that the mediators can essentially utilize email to forward the message without deciphering it. Like online direct links, online indirect links are less bound by temporal and spatial limitations since employees can utilize different online communication media (e.g., email, tele or video conference) to impart such that they do not need to meet at the same spot in the meantime. Such online communication media can likewise archive the majority of the communication history without losing data, making it less demanding for future use (Dennis, Fuller, & Valacich, 2008). Each of these qualities of indirect online links will contribute decidedly to organizational success in managing projects.

H2c: There is a significant positive association between online indirect internal communications and online direct internal communications

H3: There is a significant positive relationship between offline direct internal communications to online direct internal communications and successfully managing projects

Online direct links are evaluated low in transmitting relevant data. The greater part of the online communication media, for example, email and audio conference, do not bolster transmission of different signals (e.g. body language, facial expression). At the point when employees do not converse with each other up close and personal, individual center is likewise diminished. In spite of the fact that video conferencing can transmit some relevant data, it is great to extend relies

upon the nature of the internet connection. For example, a sub-par nature of connection may bring about data misfortune and deferral. The quality of offline direct links as far as transmitting relevant data addresses such shortcomings of online direct links.

H4: There is a significant positive association between offline indirect internal communications and online indirect internal communications

Like online direct links, online indirect links are evaluated low in transmitting relevant data on the ground that online communication media gives lacking back up to transmit logical data (Dennis, Fuller, & Valacich, 2008). The ability of online indirect links as far as transmitting relevant data is considerably weaker than that of online direct links since data needs to go through extra hubs (e.g. mediators). The quality of offline indirect links as far as transmitting logical data addresses this shortcoming of online indirect links (Becker-Beck, Wintermantel, & Brog, 2005; Dennis, Fuller, & Valacich, 2008; Maznevski & Chudoba, 2000).

H5: There is a significant positive relationship between offline direct internal communications and online indirect internal communications

As examined before, offline direct links are evaluated low in weak links, up keep cost, system reach, and determines temporal and spatial limitations, transmits data in parallel, and reports and recovers data. The qualities of online indirect links regarding these mechanisms address the restrictions of offline direct links. As examined before, online indirect links are evaluated low in system homophile, solid links, and transmits relevant data. These impediments keep the exchange of complex learning. The qualities of offline direct links as far as these mechanisms address the restrictions of online indirect links.

H6: There is a significant positive relationship between offline indirect internal communications and online direct internal communications

As noted before, offline indirect links are evaluated low in quick receipt of data, data trustworthiness, determines temporal and spatial limitations, and reports and recovers data. Like offline direct links, offline indirect links do not bolster transmission of data in parallel on the grounds that amid up close and personal communication (e.g. meetings), stand out individual can talk at any given time. The qualities of online direct links as far as these mechanisms address the restrictions of offline indirect links.

As noted before, online direct links are evaluated low in third-party reconnaissance (Brass, Butterfield, & Skaggs, 1998; Reagans & McEvily, 2003) and transmits relevant data (Dennis, Fuller, & Valacich, 2008). The qualities of offline indirect links as far as these mechanisms address the restrictions of online direct links.

2.5 Conclusion

The study adds to research that looks to comprehend the impact of internal communication technology on employees' success in managing projects. Drawing from informal organization hypothesis and complementarity hypothesis, the research builds up a superior comprehension of the part of innovation in clarifying organizational success in managing projects by differentiating between online and offline workplace communication systems. Specifically, this research study conceptualizes online and offline internal communication network links as assets and hypothesizes about the correlative impact of these assets on organizational success in managing projects. The research along this line advances the comprehension of how the system mechanisms (e.g. accessibility to and control over assets) influence organizational success in managing projects. Further, the research progresses informal organizations research by bringing bits of knowledge from complementarity hypothesis, and builds up a more nuanced conceptualization of communication network links and their independent and interdependent effects on organizational success in managing projects.

CHAPTER 3

RESEARCH METHODOLOGY

3.0 Introduction

A research methodology is a methodical proposition which used to describe how research questions were searched. The essence of this chapter is to report the research methodology implemented in the operation of designing to analyzing of raw data in this research study. The element of selective manner, timetable, data collection, statistical processes, and tool utilized in the study are deliberated. In total, there are seven essential parts in this research methodology which include research design, data collection method, sampling designs, research instrument, construct measurement, data processing and data analysis.

3.1 Research Design

Research design is the overall plan for relating the conceptual research problem to relevant and practicable empirical research (Polonsky & Waller, 2005). It is a blueprint of the study to collect the desired data information in the best possible way (Polonsky & Waller, 2005). Therefore, it is an important backbone to conduct this research efficiently and organized. There are several research designs recommended by academicians and this study will use both descriptive and casual research. According to Polonsky and Waller (2005), descriptive research is used to find out the description of certain characteristics or functions like market conditions or employees opinions and organizational performance. The

methodologies suggested for this type of research design are surveys, diary notes, and observations; where researchers have obtained prior knowledge of the topic and planned to use structured approach to collect the desired information. In this research, the reviews on other researchers' studies and findings has provided knowledge on research variables such as offline direct link, offline indirect link, online direct link, online indirect link, and organization performance. These secondary data gathered will then be applied and adopted to develop questionnaire for survey purposes.

On the other hand, casual research is designed for cause-and-effect relationships type of research (Polonsky & Waller, 2005). Similar to descriptive research, this type of research design also works on structured approach and is suitable for research that intend to examine on the relationship of two or more variables (Ghauri & Gronhaug, 2005). Churchill (Polonsky & Waller, 2005) suggested that the primary method for casual research is hypotheses testing. In this research, hypotheses will be developed based on the understanding of the topic that was obtained through the study of other researchers' findings. In line with the approach of casual research, this research study aims to examine the relationship between independent variables (direct link and indirect link) and dependent variables (organizational performance/success in managing projects). Empirical research is conducted to answer or elucidate research questions. Poorly formulated research questions will lead to misguided research design.

3.2 Data Collection Methods

Data collection methods are an integral part of research design. There are several data collection methods, each with its advantages and disadvantages. Problems researched with the use of appropriate methods greatly enhance the value of the research. The explanation behind data collection is to recover data to book-keep, to delegate choices with respect to vital discussion, or to exchange data to different parties. Two sorts of data collection methods will be utilized as part of this research study, there are the primary data and the secondary data. Because to money and time constrains, the survey questionnaire was picked as the primary

data source, in the interim the secondary data collection are from journals, web, media publications, reading materials, articles and electronic library databases.

3.2.1 Primary Data

The primary data referred to the first hand data that will be obtained from a huge pool of respondents through the quantitative research method. As mentioned by Dillon, Madden, and Firtle (Polonsky & Waller, 2005), quantitative research methods involved relatively huge numbers of respondents and are designed to generate information that can be projected to the whole population. Therefore, quantitative research method would be most suitable for this research that targeted to reach as much participants as possible. Among several quantitative research methods, electronic surveys will be used in this research. The main advantage of primary data is that they are collected for the particular research study at hand. This means that they are more consistent with the research questions and research objectives.

According to Ghauri and Gronhaug (2005), survey is an effective tool to get opinions, attitudes and descriptions as well as for getting cause-and-effect relationships. Therefore, using survey as the data collection method will be suitable for this research, which aimed to examine the relationship of the independent and dependent variables. In order to conduct the survey, an electronic questionnaire will be designed using the online survey software, namely SurveyMonkey. This particular tool enables user to create online questionnaire easily, run pilot survey, generate survey link that user could invite potential respondents to answer the questionnaire, and also help to consolidate and tabulate responses data. User could then export the report to SPSS software for further analysis.

For this particular research, the survey link generate through SurveyMonkey will be distributed through email with a short description of this research project and enclosed with the survey link as invitation to potential respondents. In addition, the survey link will also be shared through social networking site, such as

Facebook and WhatsApp. As this survey is targeted to only Malaysian working individuals; hence, this criterion will be stated clearly in the message to respondents, in order to avoid confusion and invalid responses from the wrong participants.

3.2.2 Secondary Data

Secondary data refers to the data that has existed and has been collected by different analysts for few purposes. Secondary data are useful not only to find information to solve research problem, but also to better understand and explain the research problem. The first and foremost advantage of using secondary data obviously is the enormous saving in time and money. Secondary data are collected from books, journals, articles, and past researchers to fumes all wellsprings of distributed data which information as of now been abridged and investigated by different parties (Ghauri & Gronhaug, 2005). Most of the data collected by international organizations and governments are of high quality and reliable as they are collected and compiled by experts using rigorous methods. The present researchers should break down and read the secondary data deliberately to guarantee that it is significant, exact, present and fair-minded. In any case, secondary data most likely is obsolete or may be not precisely meeting the criteria of the study as it was collected for some different reasons. Secondary data is easily procured and not costly not at all like some primary data.

The data gathered in this research study are essentially from reference books, online sources, articles from online journals and the internet. Data gathered from reference books are useful particularly in hypothetical points. Also, researchers have gathered extensive variety of overhauled data in regards to the related research's topics through EBSCOhost, ProQuest, ScienceDirect and different databases that are accessible on the online library portal provided by Universiti Tunku Abdul Rahman (UTAR).

Online data gathering was utilized to perform the data collection procedures for this study is because of the preferences picked up. As per Couper & Nicholls

(1998), researchers can save time from data entry, diminish the measure of mistake, decrease time and cash spent, and avoid the record of missing values in correlation with printed questionnaires. The online survey setup as well, foreseen to amplify the criticism level for the study. According to Hancock and Flowers (2001), it is started that online response rates are good with printed questionnaires' response rates. An obstacle confronted amid the execution of the online survey research is that respondent's ideal network and level of solace using computers to finish the survey questionnaire. Besides, Harris (2006) guaranteed that the response rate for surveys asking for participation by medical imaging professionals increases when the respondents have the decision to take part through utilizing an online service or by finishing on paper.

3.3 Sampling Design

Most people intuitively understand the idea of sampling. The basic idea of sampling is that by selecting some of the elements in a populations, researcher may draw conclusions about the entire population. A population element is the subject on which the measurement is being taken. A population is the total collection of elements about which researcher wishes to make inferences. A census is a count of all elements in a population. The sampling process is important because as Wimmer and Dominick (2003) described, a sample is a subset of the population that is representative of the entire population. Therefore, if the sample is selected correctly and the process is conducted appropriately, the sample will be able to represent the entire population. According to Gliner and Morgan (2000), using samples in research is more costly and time efficient because researchers could avoid interviews or observations that are expensive and take lesser time to study the participants compared to using the whole population.

3.3.1 Target Population

The population refers to the entire group of people, events or things of interest that the researcher wishes to investigate. It is the group of people, events or things of interest for which the researcher wants to make inferences. A survey population

made out of a noteworthy worth or a characterized number which typically known as limited population. Bernard (2000) has made singularity between study population and target population. Target population is clarified in type of picked content, units or thing, which the truth is barely to develop as a result of various limitation. Survey population is consequently alluding the experimentally accessible population or genuine study population and for all reasons and goals otherwise called the sampled population.

Malhotra and Peterson (2006) proposed that target population is the collection of the measurements that has the data the researcher is keen on. The target population for this study originates from all full-time Malaysian employees. Because of the restricted assets, it is constantly hard to perform a substantial amount of specimen study which comprises the entire Malaysian population. Subsequently, researchers will choose a portion of the elements in the population to reach inference about the whole population through sample population.

The research study is looking at full-time Malaysian employees who work at Klang Valley as the main population for this research study. Any working adults who are full-time Malaysian employees in any organizations operated in Klang valley is eligible to take part in this online survey questionnaire.

3.3.2 Sampling Frame and Sampling Location

Sampling frame, also referred as population frame, is a listing of participants who meet the criterion and are accessible by researcher through various resources such as telephone or membership directory, university registration listing, and others (Cavana, Delahaye, & Sekaran U., 2001; Gliner & Morgan, 2000). However, sampling frame may not be applicable in this research because nonprobability sampling method will be applied for samples selection. Target population from Klang Valley will be conveniently chosen as samples for the research.

3.3.3 Sampling Elements

Sampling element is explained as a single member of the population (Cavana, Delahaye, & Sekaran U., 2001). In other words, each individual from the targeted population is considered as an element. However, in this research, the sampling element is relatively wide because the population that are relevant to the study comprised of working individuals who are currently working or previously worked, from all age group, gender, education background, and industry. The sampling element of this research could be from any demographic profile as long as they have experienced in working as an employee.

3.3.4 Sampling Techniques

There are two sorts of sampling techniques accessible in the choice casing, which are the probability sampling and the non-probability sampling. Non-probability sampling technique will be utilized as a part of this study. It is a sampling technique whereby the unit of the specimen has been picked alluding to the premise of individual judgment and comfort.

This research will based in view of convenience sampling. Convenience sampling alludes to the sampling processes used to achieve the respondents or constituent which is the most convenient (Zikmund, 2003). Convenience sampling is less demanding to direct as it helps the researchers to get a substantial number of respondents rapidly at a lower spent. Judgment sampling is utilized as a noteworthy sampling process since it is economical, convenient and efficient. As per Hair, Bush and Ortinau (2006) and Malhotra et al. (2006) as whom the respondents meet the criteria of the study is able to represent the interest of the population.

3.3.5 Sampling Size

According to Wimmer and Dominick (2003), the sample size for a research is mostly based on the type and purpose of the research, time and financial

constraints, and other possible factors. Therefore, there are no specific formulas or methods to determine a sample size for every research method or statistical procedures. Generally, qualitative research requires small numbers of participants because of the in-depth of information required while quantitative research requires as many participants as possible to gain more confidence in the research results (Wimmer & Dominick, 2003).

3.4 Research Instrument

To carry out survey as the method of data collection, questionnaire has been decided as the research instrument for this quantitative research. This particular instrument will be used as the tool to collect data and responses, which will be analyzed in the following chapter.

3.4.1 The Purpose of Using Questionnaire

Questionnaire is one of the most commonly used instruments in survey research. This is mainly because the ability of questionnaire in collecting large amount of data at a reasonable cost and without geographical constraint (Wimmer & Dominick, 2003). Moreover, questionnaire could provide a variety of statistics for data analysis because it allows researchers to collect and examine variables such as demographic information, attitudes and behavior of the respondents (Wimmer & Dominick, 2003). Looking at the research objectives set for this research while considering the financial and time constraint, questionnaire seems to be the most suitable tools to reach out to large number of respondents within Klang Valley, and collect necessary data to resolve the research questions. Furthermore, this research will use electronic questionnaire, which is more convenient and able to reach respondents from any parts of Klang Valley within a short time period. With the help of available internet tools, the electronic questionnaire can reach a large pool of samples very quickly. Distributing the questionnaire in electronic format will reduce the time and overall research cost compared to having researcher to hand the printed questionnaires to respondents personally or distribute through mails, which is more time consuming and may encounter geographical boundaries.

Although there may be a risk that the response rate may be low and respondents may have security concern or less computer literate, electronic survey is still practical because it is faster, easy to administrate, less expensive, and allows respondents to complete the questionnaire in their own time and at their convenience (Polonsky & Waller, 2005; Cavana, Delahaye, & Sekaran U., 2001). Therefore, electronic questionnaire will be used as the main instrument for data collection in this research. Moreover, looking at the current context of Internet usage, there should be less concern on the respondents' literacy to computer or Internet.

3.4.2 Pilot Test

Pilot test is important to find out whether the questionnaire is designed appropriately to the study and to discover the areas of misunderstanding for rectification (Wimmer & Dominick, 2003). To ensure the questionnaire is well-structured and will obtain useful results effectively, a pretest is done before the survey is actually launched. The pilot test will be conducted on 25 to 30 respondents by sending them the electronic survey link. This is also to ensure that the survey link can be accessed and results can be submitted upon completion without any interference. The pretest will be carried out a month before the actual launched date of the survey to allow sufficient time for necessary amendments.

3.5 Construct Measurement

3.5.1 Origin of Construct

Several previous established survey instruments from few literatures were adopted and used to collect data for this research study. A summary of the constructs is shown in table below:

Table 3.5.1.1: Construct and Source of Construct Measurement

Construct	Sources
Offline direct internal communication link	(Burt, 1992) (Dennis, Fuller, & Valacich, 2008) (Ibarra, 1992) (McPherson, Smith-lovin, & Cook, 2001) (Becker-Beck, Wintermantel, & Brog, 2005) (Dennis, Fuller, & Valacich, 2008)
Offline indirect internal communication link	(Ahuja, 2000) (Burt, 1992) (Hansen, 2002) (Reagans & McEvily, 2003) (Hansen, 1999) (Levin & Cross, 2004) (Granovetter, 1973) (Ibarra, 1992) (McPherson, Smith-lovin, & Cook, 2001)
Online direct internal communication link	(Dennis, Fuller, & Valacich, 2008)
Online indirect internal communication link	(Granovetter, 1973) (Hansen, 1999) (Hansen, Mors, & Lovas, 2005) (Haythornthwaite, 2002) (Levin & Cross, 2004) (Dennis, Fuller, & Valacich, 2008)
Organizational performance/success in managing projects	(Kraimer, Wayne, Liden, & Sparrowe, 2005) (Welbourne, Johnson, & Erez, 1998) (Cross & Cummings, 2004) (Sparrowe, Liden, & Kraimer, 2001)

3.5.2 Data Scale of Measurement

Table 3.5.2.1: Offline Direct Internal Communication Link Construct and Measurement Items

Construct	Measurement Items
Offline direct internal communication link	1. Most of the information I receive on a daily basis in managing projects comes from my superior. 4. I feel comfortable sharing ideas directly with members of top management. 5. I feel comfortable sharing ideas with my superior. 6. In this organisation, the lines of communication are "open" all the way to top management. 10. Most of the information I receive from my manager/superior is detailed and accurate. 11. Most of the information I receive from my colleagues/peers is detailed and accurate. Please indicate how effective the following methods are for communicating among project team members in managing projects. 15. Face-to-face meeting/discussion 18. Manager/Superior 20. Telephone calls Please indicate how frequently you use the following methods of internal communications on a daily basis in managing projects. 22. Face-to-face meeting/discussion 25. Telephone calls Please indicate how important the following methods of internal communication are in helping you effectively

	managing your projects. 26. Face-to-face meeting/discussion 29. Telephone calls

Table 3.5.2.2: Offline Indirect Internal Communication Link Construct and Measurement Items

Construct	Measurement Items
Offline indirect internal communication link	2. In this organization, my ideas are passed on through superior before reaching top management. 3. Most of the information I receive on a daily basis in managing projects come from my colleagues/peers. 7. I receive most of the information I need through informal channels. 8. The information that is shared by employees in other project teams is often biased and reflects their own personal interests. 9. Most of the group meetings I attend are informative and worthwhile. 12. Communication from other project teams is typically detailed and accurate. 13. Most of the information passed down from top-management is detailed and accurate. Please indicate how effective the following methods are for communicating among project team members in managing projects. 16. General meetings 17. Memos/faxes/letters 21. Colleagues/Peers Please indicate how frequently you use the following methods of internal communications on a daily basis in

	managing projects. 24. Written communication (Memo, Fax, Letter, etc.) Please indicate how important the following methods of internal communication are in helping you effectively managing your projects. 28. Written communication (Memo, Fax, Letter, etc.)

Table 3.5.2.3: Online Direct Internal Communication Link Construct and Measurement Items

Construct	Measurement Items
Online direct internal communication link	1. Most of the information I receive on a daily basis in managing projects comes from my superior. 4. I feel comfortable sharing ideas directly with members of top management. 5. I feel comfortable sharing ideas with my superior. 6. In this organisation, the lines of communication are "open" all the way to top management. 10. Most of the information I receive from my manager/superior is detailed and accurate. 11. Most of the information I receive from my colleagues/peers is detailed and accurate. Please indicate how effective the following methods are for communicating among project team members in managing projects. 14. E-mail 18. Manager/Superior 19. Other electronic communication (SMS/WhatsApp, etc.) Please indicate how frequently you use the following

	methods of internal communications on a daily basis in managing projects. 23. Electronic communications (E-mail, SMS, WhatsApp, etc.) Please indicate how important the following methods of internal communication are in helping you effectively managing your projects. 27. Electronic communications (E-mail, SMS, WhatsApp, etc.)

Table 3.5.2.4: Online Indirect Internal Communication Link Construct and Measurement Items

Construct	Measurement Items
Online indirect internal communication link	2. In this organization, my ideas are passed on through superior before reaching top management. 3. Most of the information I receive on a daily basis in managing projects come from my colleagues/peers. 7. I receive most of the information I need through informal channels. 8. The information that is shared by employees in other project teams is often biased and reflects their own personal interests. 9. Most of the group meetings I attend are informative and worthwhile. 12. Communication from other project teams is typically detailed and accurate. 13. Most of the information passed down from top-management is detailed and accurate. Please indicate how effective the following methods are for communicating among project team members in

	managing projects. 14. E-mail 21. Colleagues/Peers Please indicate how frequently you use the following methods of internal communications on a daily basis in managing projects. 23. Electronic communications (E-mail, SMS, WhatsApp, etc.) Please indicate how important the following methods of internal communication are in helping you effectively managing your projects. 27. Electronic communications (E-mail, SMS, WhatsApp, etc.)

Table 3.5.2.5: Organizational Performance/Success in Managing Projects Construct and Measurement Items

Construct	Measurement Items
Organizational performance/success in managing projects	8. The information that is shared by employees in other project teams is often biased and reflects their own personal interests. 9. Most of the group meetings I attend are informative and worthwhile. 10. Most of the information I receive from my manager/superior is detailed and accurate. 11. Most of the information I receive from my colleagues/peers is detailed and accurate. 12. Communication from other project teams is typically detailed and accurate. 13. Most of the information passed down from top-management is detailed and accurate.

3.6 Data Processing

Data processing is fundamental before the collected data are being analyzed. This is to check through and channel any invalid or deficient data that will influence the result of the data analysis. Once the data begin to flow, researcher attention turns to data analysis. First phase will be data processing. Data processing includes data editing, data coding and data transcribing and is the activity that ensures the accuracy of the data and their conversion from raw form to reduced and classified forms that are more appropriate for analysis (Adams, Khan, Raeside, & White, 2007). Preparing a descriptive statistical summary is another preliminary step leading to an understanding of the collected data. It is during this step data entry errors may be revealed and corrected.

3.6.1 Questionnaire Checking

Prior to the survey questionnaire is launched and disseminated to the focused samples, it must be checked to guarantee the inquiries are proper, all around organized, and doable to the respondents. As per Adams et al. (2007), the response rate and quality and unwavering quality of responses could be influenced by the organization of survey. Consequently, checking of survey questionnaire is one of the essential steps in this research. As this is an electronic survey that has no up close and personal interaction between the respondents and researcher, all inquiries were created in straightforward language and simple arrangement so that the respondents could see and read effectively. This is additionally to expand the response rate as to stay away from respondents to desert the survey because of trouble in comprehending the inquiries. Moreover, the pilot test also helped in questionnaire checking, where errors were discovered and amended.

3.6.2 Data Editing

The customary first step in analysis is to edit the raw data. Data editing detects errors and omissions, corrects them when possible and certifies that maximum

data quality standards are achieved. This process's purpose is to guarantee that data are accurate, consistent with the intent of the question and other information in the survey questionnaire, uniformly entered, complete and arranged to simplify coding and tabulation.

After data is gathered through the survey, the information will be handled and altered, if necessary. As every one of the inquiries organized for this survey are close-ended inquiries, data editing will not have to be done a lot in this research study (Adams, Khan, Raeside, & White, 2007). This is on the grounds that respondents will not give some other data or answers in their own particular words, which requires data editing for sorting them and applying codes for further handling. Moreover, to avoid respondents from intentionally or accidentally missed out any questions; one precaution has been set on the electronic questionnaire. All questions were formatted as mandatory in the online survey software to ensure respondents answer each of the listed questions before they can proceed to submit the questionnaire. In addition, the online survey software will also categorize the responses into complete or partially complete. Responses that are incomplete, which is also refer as partially complete will be rejected and removed from the overall data that will be analyzed later.

3.6.3 Data Coding

Data coding involves assigning numbers or other symbols to answers so that the responses can be grouped into a limited number of categories. In coding, categories are the partitions of a data set given variable (e.g. if the variable is gender, the partitions are male and female). Categorization is the process of using rules to partitions a body of data. Both closed and open response questions must be coded (Adams, Khan, Raeside, & White, 2007).

The categorization of data sacrifices some data detail but it is necessary for efficient analysis. Most statistical and table software programs work more efficiently in the numeric mode. Instead of entering the word "male" or "female" in response to a question that asks for the identification of one's gender,

researcher would use numeric codes (e.g. 1 for male and 2 for female). Numeric codes simplifies the researcher's task in converting a nominal variable, like gender, to a "dummy variable".

The survey questionnaire will adopt the five point Likert scale as measurement. Subsequently, data coding will only be done on the demographic inquiries, which are organized in the early segment of the survey questionnaire. Numerical coding from one to five will be inserted into the IBM SPSS (Statistical Package for Social Science) version 23.0 software that is utilized for data analysis. Data will be categorized such as 1 for male and 2 for female in the gender question and 1 to 5 for each of the age group respectively. For example, 1 for 20 to 29 years old age group; 2 for 30 to 35 years old age group; 3 for 36 to 39 years old age group; 4 for 40 to 49 years old age group and lastly 5 for 50 to 59 years old age group. This same goes to the job category, 1 represent junior executive; 2 represent senior executive; 3 represent junior managerial; 4 represent managerial and 5 represent senior managerial.

3.6.4 Data Transcribing

Data transcribing converts information gathered by primary or secondary methods to a medium for viewing and manipulation. Keyboarding remains a mainstay for researcher who needs to create a data file immediately and store it in minimal space on a variety of media. However, researcher has profited from more efficient ways of speeding up the research process, especially from bar coding and optical character and mark recognition (Adams, Khan, Raeside, & White, 2007).

Data transcribing for this research is rather simple and fast. The online survey software that utilized to carry out the electronic survey will be able to compile and tabulate the collected data systematically. These tabulated data can then be exported to SPSS software for further analysis.

3.7 Data Analysis

The statistical software program to be utilized to carry out the data analysis for this research study will be the Statistical Package for Social Sciences (SPSS) version 23.0 for Windows. All information will be analyzed using SPSS to examine the mean score, standard deviation, cumulative percentage distribution, and additional information about dimensions of the independent variables and dependent variables.

3.7.1 Descriptive Analysis

Descriptive analysis permits researchers to acquire more comprehension of the information and is frequently the premise for intricate investigations (Polonsky & Waller, 2005). This essential investigation will be done on the information collected from early segment of the survey questionnaire, which will concentrate on the respondents' demographic profile. These information are greater amount of clear as crystal information; in this manner, the analysis result is to give a synopsis of the respondents' profile. The analysis will be done on frequency and percentage distribution.

3.7.2 Scale Measurement

In this research study, reliability and validity of the measurement will be tested in scale measurement.

3.7.2.1 Reliability Test

Reliability is an absolute essential key of validity. Be that as it may, all alone, it is not a sufficient measure of validity. Reliability alludes to the degree to which a scale produces stable results gave the rehashed estimations are made on the attributes (Malhotra & Peterson, 2006). Validity is characterized as the quality of conclusive results and whether they are viewed as precisely depicting the genuine

physical phenomena (Malhotra & Peterson, 2006). A test can be reliable but may not be valid, whereas a test cannot be valid yet unreliable. Hence, reliability simply describes the consistency of a given set.

Spearman (Spearman, 1904; Spearman, 1904; Spearman, 1907) suggested that the observed results of their measurement operations contain a mixture of both the true value of the construct and measurement error. Thus began an approach to the nature and quality of measurement known as the Classical Test Theory. In the prototypical testing situation, the research study has developed a set of items to measure some construct and has collected responses to these items from a sample of respondents. The issue faced is to determine if these items can be combined to form a scale that measures the construct with an acceptable degree of quality.

One result of the quest to develop procedures that assess measurement quality (Nunnally & Bernstein, 1994; Traub, 1997) has been the development of the reliability coefficient. A reliability coefficient theoretically represents the proportion of true score variance present in the total variance (true score plus error variance) of test scores (Lord & Norick, 1968; Nunnally & Bernstein, 1994). Reliability ranges between .00 and 1.00, with .00 indicating that none of the observed variance is due to true score variance and 1.00 indicating that observed scores are composed only of rue score variance. All measurement operations ultimately serve the goal of achieving validity (allowing to draw appropriate inferences from the measures), and a critical requirement to achieve validity is to measure the construct in a manner that is relatively free of measurement error, that is, to have a relatively reliable measurement procedure (Pedhazur & Schmelkin, 1991).

Because the research study cannot directly measure the true score, it needs to gauge reliability indirectly. One approach to this indirect approach has involved assessing the consistency of performance on at least two measurement occasions, an approach subsuming both test-retest reliability and parallel forms reliability. Test-retest involves completing two or more scales. Both evaluates consistency in part by examining the correlations of test scores between the testing occasions.

3.7.3 Inferential Analysis

As indicated by Cavana et al. (2001), inferential analysis is regularly used to discover (1) the relationship between two variables; (2) differences in a variable among various sub-groups; and (3) how a few independent variables may clarify the change in a dependent variable. In this research, inferential analysis will be completed to find the relationship between independent and dependent variables; and to conduct the hypotheses testing (Cavana, Delahaye, & Sekaran U., 2001).

3.7.3.1 Pearson's Correlation Analysis

In its most general sense, a correlation indexes the extent to which the variables in the analysis are related. There are several correlation coefficients applicable to the research study conducted in the behavioral, social and medical sciences, but the most widely used is the Pearson Product Moment Correlation, usually referred to as the Pearson correlation or just the Pearson *r*. It assumes that the variables represent approximately interval measurement and that they are approximately normally distributed; outliers can seriously distort the value of the correlation, and so should be appropriately handled before data analysis (Pearson, 1896).

The Pearson *r* was developed by Karl Pearson (Pearson, 1896) based on the initial development of the idea by Sir Francis Galton (Galton, Heredity stature, 1886) (Galton, 1888). It assesses the degree to which two variables are linearly related. To the extent that the relationship between the two variables is not linear (e.g. a U-shaped function), the Pearson *r* will substantially underestimate how strongly the two variables are associated (in case of a symmetric U-shaped function, the Pearson *r* will be zero).

To say that two variables are related means that they co-vary. One way to think of covariation is that variation in one variable is synchronous with that of the other variable. For example, cases with higher values on one variable might tend to have lower values on the other variable. A related way to think of covariation is

that values of one variable are predictable by some margin better than chance from the knowledge of the corresponding value on the other. The Pearson r^2 indexes the strength of the relationship, that is, the amount of variance shared between the two variables.

Pearson's correlation analysis will be executed as the underlying procedure in inferential analysis. This is to give a general comprehension on the relationship between the independent variables and both dependent variables respectively. Data will be analyzed based on two parameters, which are Pearson *r* value and the significance level. As stated by Lind, Marchal, and Wathen (2008), any correlation coefficient that is within -1.00 or +1.00 indicates a perfect correlation between the variables. Therefore, variables that are found with Pearson *r* value that is closer to -1.00 or +1.00 will be recognized as significantly related. Nevertheless, the significance of relationship between variables is additionally controlled by the significance level, which is less than 0.05, an indication that most researches used.

3.7.3.2 Multiple Regression Analysis

Multiple regression analysis is a statistical technique that utilized to examine the relationship between one dependent variable and a few independent variables, and in the meantime, predicts the dependent variable by utilizing the independent variables whose values are known (Hair, Bush, & Ortinau, 2006). In this research, multiple regression analysis will be utilized to look at the relationship between independent variables and both dependent variables. Besides, multiple regression analysis will likewise prompt to the hypotheses test that intended to determine the research questions.

Multiple linear regression is an extension of simple linear regression on that there are two or more predictors that are included in the model. The raw score model thus contains multiple bX terms, one for each predictor, and the standardized model contains multiple beta Xz terms. The linear function is fit by using the

least-square algorithm, and the weights associated with the predictors are those that maximize the prediction of Y.

The most common way of performing a multiple regression analysis is using the standard (simultaneous) method in which all variables are entered into the model in a single step. Each predictor is evaluated with all other variables presumed to be in the model; thus, the other predictors act as co-variables with respect to the predictor that is being evaluated. He weights are known as partial regression coefficients because they are computed with respect to the other predictors in the model, and so even adding or subtracting a single variable from the set of predictors can potentially change the value of the partial regression coefficients by a substantial margin (Hair, Bush, & Ortinau, 2006).

In some contexts, researchers may have reason to simplify a multiple regression model by selecting only the "best" predictors, that is, only those predictors that are significantly predictive of the criterion variable when controlling for all the other predictors. For example, certain predictors may be very resource intensive make less than optimal theoretical sense. The idea of using a reduced predictor set is to perform virtually the same amount of predictive work explaining the variance of the dependent variable as the full set of predictor variables, but the outcome must have pragmatic or theoretical utility for researchers to justify using the resulting model (Hair, Bush, & Ortinau, 2006).

3.8 Conclusion

In conclusion, Chapter 3 reported the methodology and procedures for carrying out this research study. After a brief presentation, a portrayal of the research methods and research design, selection of the population, survey instruments, data collection procedure, pilot resting results, and consequential data processing methods were defined. Chapter 4 will investigate on the outcomes got from the research study and additionally discussion and interpretation of hypotheses.

CHAPTER 4

DATA ANALYSIS

4.0 Introduction

This chapter will particularly concentrate on data analysis using the software IBM SPSS (Statistical Package of Social Science) version 23.0 to analyze gathered data throughout the data collection process. First section explained the survey distribution and return rates of the respondents. From there, second section will look into descriptive analysis in describing respondents' demographic profiles. Third section focused on scale measurement by exploring pilot study's internal reliability test and internal reliability test of the collected data. Then, forth section will bring the research study to the level of inferential analysis. The section mainly describes the findings through Pearson's correlation analysis and multiple regression analysis follow by the hypothesis summary. The chapter then will end with conclusion of the findings extracted from the data analysis.

4.1 Survey Distribution and Return Rates

A 29 questions with 5-points Likert scale (from strongly disagree to strongly agree) survey questionnaire has been generated. This survey questionnaire had been sent through email link to 25 respondents for pilot testing. The target respondents are permanent employees who work in small to big organizations around Klang valley, preferably involving in managing projects. Since the research study aims to determine the impact of internal communication utilizing technology in managing

project successfully, internship and top management are not part of the respondents involved in this survey. The pilot test is to control the answering time of the 29-5 points Likert scale questions within 10 minutes time. Simple language and direct questions are being used to generate this survey questionnaire, in order the respondents to be clear on the question without the need to consult the researcher. If any issues being noticed during the pilot test, it needs to be addressed before larger scale of data collection. After about 2 weeks, 20 respondents replied out of 25 survey questionnaires sent for pilot test, a 80% of return rate; a quite satisfying result. No critical issues or complaints received during the pilot test. All respondents managed to response around 10 minutes time.

Once necessary checking and internal reliability test have been taken for the data collected from the pilot test. A more refined survey questionnaire have been distributed through email link to 123 respondents across the Klang valley. This time, a month time have been allowed for the respondents to response. After about a month, 80 respondents replied out of 123 survey questionnaires sent for actual data collection, a 65% of return rate; also a quite satisfying response rate.

4.2 Descriptive Analysis

Once the data are verified as correctly entered, one of the first steps researchers perform as part of the data analysis is generating descriptive statistics on the variables in the study. The Frequencies procedure in SPSS is one of the procedures available for this purpose. In generating such statistics, it is important to distinguish between variables assessed on a nominal or categorical scale of measurement from those assessed on a quantitative (summative response, interval, or ratio) scale of measurement (Meyers 2009). For categorical variables, the only option is to determine the frequencies of cases classified into each category (e.g. the number of cases in each age group category). Other descriptive statistics, such as the mean and standard deviation of such a variable with more than two categories, are not interpretable values and so should not be requested.

For quantitative variables, researchers often do have an interest in the number of cases represented by each value of the variable, but the interest usually diminishes with greater number of possible values. For example, researchers would be more interested in the number of case choosing 1, 2, 3, 4 and 5 on a 5-point response scale (e.g. to determine that all scale points are being selected with reasonable frequency) than in the number of cases whose score on a measure of extraversion was 31, 32, 33 and so on all the way to 70. But researchers would always want to obtain other descriptive statistics providing us with information about the central tendency, variability and shape of the distribution.

4.2.1 Demographic Profile

Figure 4.2.1.1: Respondents' gender

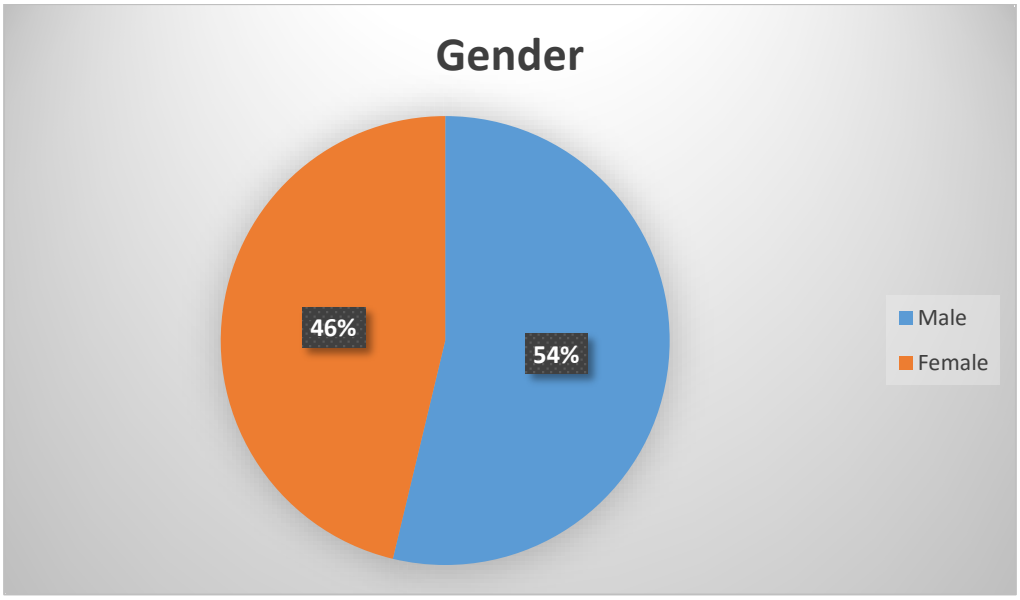


Table 4.2.1.1: Respondents' gender

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	43	53.8	53.8	53.8
	Female	37	46.3	46.3	100.0
	Total	80	100.0	100.0	

Out of the 80 respondents responded, there are 43 male (around 54%) and 37 female (around 46%).

Figure 4.2.1.2: Respondents' age group

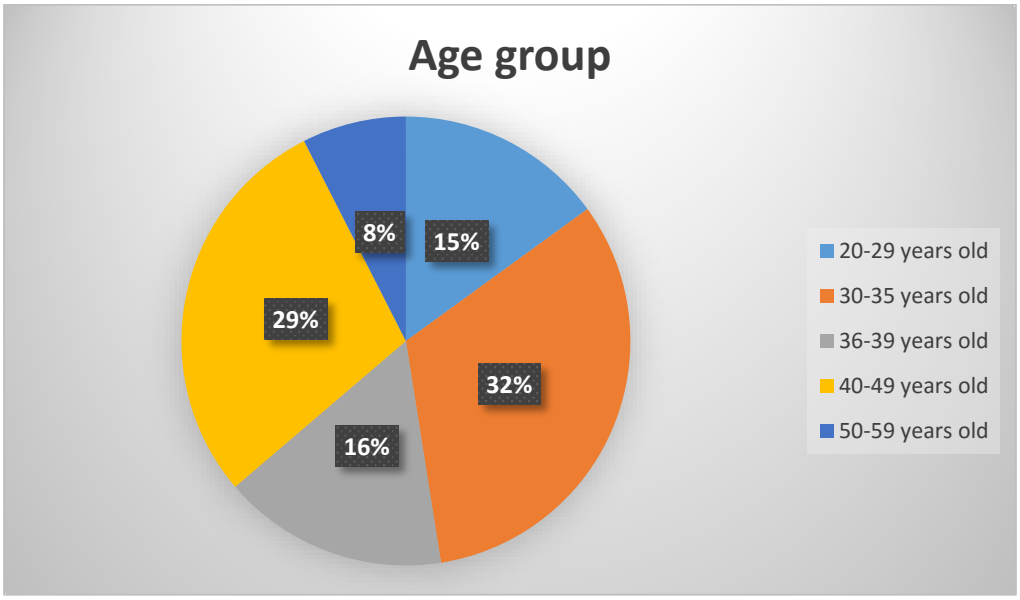


Table 4.2.1.2: Respondents' age group

AgeGrp

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-29 years old	12	15.0	15.0	15.0
	30-35 years old	26	32.5	32.5	47.5
	36-39 years old	13	16.3	16.3	63.7
	40-49 years old	23	28.7	28.7	92.5
	50-59 years old	6	7.5	7.5	100.0
	Total	80	100.0	100.0	

Out of the 80 respondents responded, there are 12 employees from 20-29 years old age group (about 15%), 26 employees from 30-35 years old age group (about 32.5%), 13 employees from 36-39 years old age group (about 16%), 23 employees from 40-49 years old age group (about 29%), and 6 employees from 50-59 years old age group (about 7.5%).

Figure 4.2.1.3: Respondents' job category

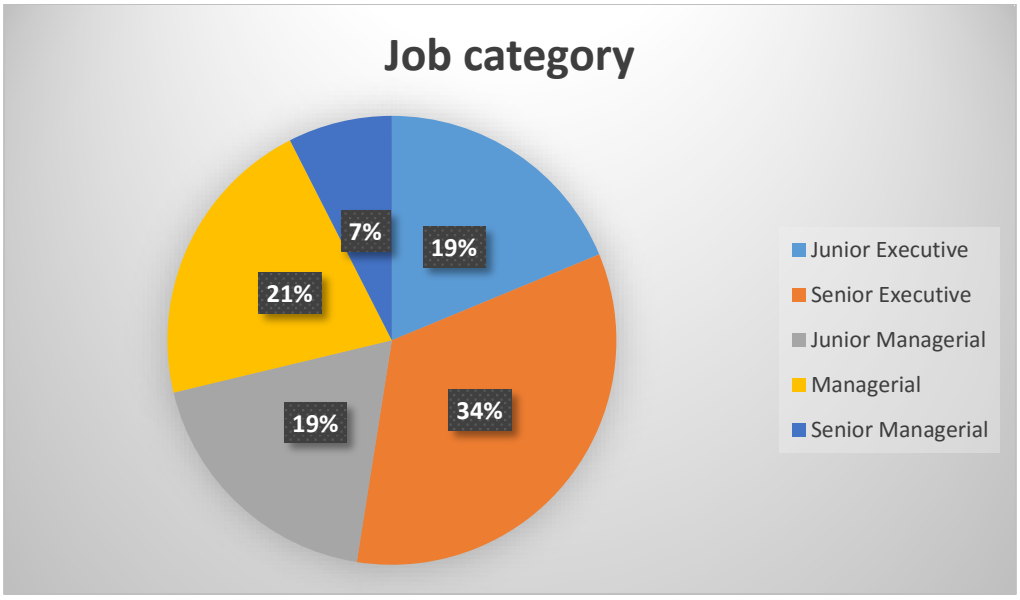


Table 4.2.1.3: Respondents' job category

JobCat

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Junior Executive	15	18.8	18.8	18.8
	Senior Executive	27	33.8	33.8	52.5
	Junior Managerial	15	18.8	18.8	71.3
	Managerial	17	21.3	21.3	92.5
	Senior Managerial	6	7.5	7.5	100.0
	Total	80	100.0	100.0	

Out of the 80 respondents responded, there are 15 employees categorize as junior executive (about 19%), 27 employees categorize as senior executive (about 34%), 15 employees categorize as junior managerial (about 19%), 17 employees categorize as managerial (about 21%), and 6 employees categorize as senior managerial (about 7.5%).

4.3 Scale Measurement

In empirical research distinctions are often made between different scales of measurement. The lowest level of measurement is the nominal level. In business and social science research, nominal data are probably quite often collected. With nominal data, researcher are collecting information on a variable that naturally or by design can be grouped into two or more categories that are mutually exclusive and collectively exhaustive. Many variables studied in business research are not only classifiable, but also exhibit some kind of relation, allowing for rank order. Ordinal data includes the characteristics of the nominal scale plus an indicator of order. Ordinal data are possible if the transitivity postulate is fulfilled. When researcher knows the exact distance between each of the observations and this distance is constant, then an interval scale of measurement has been achieved. Interval data has the power of nominal and ordinal data plus one additional strength, they incorporate the concept of equality of interval. The ratio scale

differs from an interval scale in that it possesses a natural or absolute zero, one for which there is universal agreement as to its location. Ratio data incorporate all the powers of the previous data types plus the provision for absolute zero or origin. It represent the actual amounts of a variable.

4.3.1 Pilot Study's Internal Reliability Test

Cronbach's alpha is a common measure of internal consistency (a measure of reliability). It is used to determine how much the items on a scale are measuring the same underlying dimension. It is most commonly used when the research study have multiple Likert questions in a survey questionnaire that form a scale or subscale, and researcher wish to determine if the scale is reliable.

20 respondents replied out of 25 survey questionnaires sent. There were 20 cases included in the analysis and no cases that were excluded due to missing values.

Table 4.3.1.1: Pilot Test's Reliability Statistics (Q1 to Q29)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.715	.751	29

Survey questionnaire was employed to measure different, underlying constructs in the pilot test. The construct consisted of twenty nine questions. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.715.

Table 4.3.1.2: Pilot Test's Item-Total Statistics (Q1 to Q29)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q1	96.50	72.895	.096	.	.722
Q2	96.00	68.421	.484	.	.691
Q3	96.30	76.221	-.026	.	.722
Q4	96.70	74.747	.003	.	.730
Q5	95.90	71.674	.276	.	.705
Q6	96.80	70.905	.110	.	.728
Q7	96.80	78.274	-.169	.	.735
Q8	97.20	73.642	.115	.	.716
Q9	96.30	69.695	.434	.	.695
Q10	96.70	67.589	.575	.	.685
Q11	96.40	74.568	.179	.	.711
Q12	96.50	77.526	-.165	.	.723
Q13	96.20	72.589	.181	.	.712
Q14	96.50	65.316	.537	.	.682
Q15	95.80	63.326	.599	.	.674
Q16	96.10	73.989	.173	.	.711
Q17	97.10	79.674	-.237	.	.743
Q18	96.10	67.253	.546	.	.685
Q19	96.50	67.000	.493	.	.687
Q20	96.00	69.263	.511	.	.692
Q21	96.40	73.937	.169	.	.712
Q22	95.70	69.063	.570	.	.689
Q23	96.20	77.011	-.092	.	.725
Q24	97.10	69.989	.309	.	.702
Q25	96.30	72.011	.333	.	.703
Q26	95.70	70.747	.573	.	.695

Q27	96.00	71.368	.445	.	.699
Q28	96.60	74.568	.046	.	.722
Q29	96.00	72.632	.512	.	.702

No questions have been further dropped from the survey questionnaire to improve the current Cronbach's alpha of 0.715. Although dropping certain questions might improve the Cronbach's alpha, such as dropping Q4 or Q17 will improve Cronbach's alpha to .730 or .743 respectively. These is because the increment of merely 2 to 4% is fairly negligible.

Table 4.3.1.3: Pilot Test's Reliability Statistics (IV1 to IV4 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.873	.877	5

Survey questionnaire was employed to measure different, underlying constructs in the pilot test. The construct, offline direct internal communication link, offline indirect internal communication link, online direct internal communication link, online indirect internal communication link and organizational success in managing projects, consisted of thirteen, twelve, eleven, eleven and six questions respectively. The scale had a relatively high level of internal consistency, as determined by a Cronbach's alpha of 0.873.

Table 4.3.1.4: Pilot Test's Inter-Item Correlation Matrix (IV1 to IV4 and DV)

Inter-Item Correlation Matrix

	IV1	IV2	IV3	IV4	DV
IV1	1.000	.279	.929	.609	.780
IV2	.279	1.000	.256	.710	.518
IV3	.929	.256	1.000	.489	.797
IV4	.609	.710	.489	1.000	.517
DV	.780	.518	.797	.517	1.000

Table 4.3.1.5: Pilot Test's Item-Total Statistics (IV1 to IV4 and DV)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
IV1	13.3091	1.097	.849	.916	.809
IV2	13.6591	1.712	.454	.721	.896
IV3	13.5000	1.137	.807	.888	.822
IV4	13.5091	1.541	.665	.761	.858
DV	13.6591	1.388	.826	.778	.821

No questions have been further dropped from the survey questionnaire to improve the current Cronbach's alpha of 0.873. Although dropping IV2 might improve the Cronbach's alpha to .896. These is because the increment of merely 2.6% is fairly negligible.

4.3.2 Internal Reliability Test

80 respondents replied out of 123 survey questionnaires sent. There were 80 cases included in the analysis and no cases that were excluded due to missing values.

Table 4.3.2.1: Reliability Statistics (Q1 to Q29)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.732	.740	29

Survey questionnaire was employed to measure different, underlying constructs. The construct consisted of twenty nine questions. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.732.

Table 4.3.2.2: Item-Total Statistics (Q1 to Q29)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q1	95.70	83.453	.175	.	.730
Q2	95.30	78.896	.419	.	.713
Q3	95.50	90.684	-.279	.	.748
Q4	95.65	79.927	.255	.	.726
Q5	95.35	78.914	.416	.	.713
Q6	95.70	80.213	.234	.	.728
Q7	95.80	96.162	-.470	.	.772
Q8	96.10	89.104	-.132	.	.751
Q9	95.60	78.420	.520	.	.708
Q10	95.65	77.901	.610	.	.704
Q11	95.40	85.610	.185	.	.729
Q12	95.55	85.618	.126	.	.731
Q13	95.30	84.668	.136	.	.731
Q14	95.55	79.542	.411	.	.714
Q15	94.80	78.542	.453	.	.711
Q16	95.25	81.304	.358	.	.718

Q17	96.00	86.684	-.010	.	.743
Q18	95.35	81.243	.305	.	.721
Q19	95.65	79.319	.362	.	.717
Q20	95.40	76.496	.590	.	.702
Q21	95.50	79.443	.479	.	.711
Q22	94.85	82.661	.323	.	.721
Q23	95.10	87.281	-.024	.	.739
Q24	96.25	79.481	.445	.	.712
Q25	95.55	77.719	.522	.	.706
Q26	94.80	85.327	.116	.	.732
Q27	95.25	84.139	.192	.	.728
Q28	95.90	82.319	.233	.	.726
Q29	95.40	79.433	.571	.	.709

No questions have been further dropped from the survey questionnaire to improve the current Cronbach's alpha of 0.732. Although dropping certain questions might improve the Cronbach's alpha, such as dropping Q7 or Q8 will improve Cronbach's alpha to .772 or .751 respectively. These is because the increment of merely 2.6 to 5.5% is fairly negligible.

Table 4.3.2.3: Reliability Statistics (IV1 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.630	.639	2

Survey questionnaire was employed to measure different, underlying constructs. The construct, offline direct internal communication link and organizational success in managing projects, consisted of thirteen and six questions respectively. The scale had a somewhat high level of internal consistency, as determined by a Cronbach's alpha of 0.630.

Table 4.3.2.4: Reliability Statistics (IV2 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.754	.768	2

Survey questionnaire was employed to measure different, underlying constructs. The construct, offline indirect internal communication link and organizational success in managing projects, consisted of twelve and six questions respectively. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.754.

Table 4.3.2.5: Reliability Statistics (IV1, IV2 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.703	.729	3

Survey questionnaire was employed to measure different, underlying constructs. The construct, offline direct internal communication link, offline indirect internal communication link and organizational success in managing projects, consisted of thirteen, twelve and six questions respectively. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.703.

Table 4.3.2.6: Reliability Statistics (IV3 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.722	.725	2

Survey questionnaire was employed to measure different, underlying constructs. The construct, online direct internal communication link and organizational

success in managing projects, consisted of eleven and six questions respectively. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.722.

Table 4.3.2.7: Reliability Statistics (IV4 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.737	.763	2

Survey questionnaire was employed to measure different, underlying constructs. The construct, online indirect internal communication link and organizational success in managing projects, consisted of eleven and six questions respectively. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.737.

Table 4.3.2.8: Reliability Statistics (IV3, IV4 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.761	.777	3

Survey questionnaire was employed to measure different, underlying constructs. The construct, online direct internal communication link, online indirect internal communication link and organizational success in managing projects, consisted of eleven, eleven and six questions respectively. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.761.

Table 4.3.2.9: Reliability Statistics (IV1, IV3 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.849	.847	3

Survey questionnaire was employed to measure different, underlying constructs. The construct, offline direct internal communication link, online direct internal communication link and organizational success in managing projects, consisted of thirteen, eleven and six questions respectively. The scale had a relatively high level of internal consistency, as determined by a Cronbach's alpha of 0.849.

Table 4.3.2.10: Reliability Statistics (IV2, IV4 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.833	.849	3

Survey questionnaire was employed to measure different, underlying constructs. The construct, offline indirect internal communication link, online indirect internal communication link and organizational success in managing projects, consisted of twelve, eleven and six questions respectively. The scale had a relatively high level of internal consistency, as determined by a Cronbach's alpha of 0.833.

Table 4.3.2.11: Reliability Statistics (IV1, IV4 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.697	.730	3

Survey questionnaire was employed to measure different, underlying constructs. The construct, offline direct internal communication link, online indirect internal communication link and organizational success in managing projects, consisted of thirteen, eleven and six questions respectively. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.697.

Table 4.3.2.12: Reliability Statistics (IV2, IV3 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.738	.747	3

Survey questionnaire was employed to measure different, underlying constructs. The construct, offline indirect internal communication link, online direct internal communication link and organizational success in managing projects, consisted of twelve, eleven and six questions respectively. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.738.

Table 4.3.2.13: Reliability Statistics (IV1 to IV4 and DV)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.839	.848	5

Survey questionnaire was employed to measure different, underlying constructs. The construct, offline direct internal communication link, offline indirect internal communication link, online direct internal communication link, online indirect internal communication link and organizational success in managing projects, consisted of thirteen, twelve, eleven, eleven and six questions respectively. The scale had a relatively high level of internal consistency, as determined by a Cronbach's alpha of 0.839.

Table 4.3.2.14: Inter-Item Correlation Matrix (IV1 to IV4 and DV)

Inter-Item Correlation Matrix

	IV1	IV2	IV3	IV4	DV
IV1	1.000	.326	.907	.335	.470
IV2	.326	1.000	.295	.713	.624
IV3	.907	.295	1.000	.426	.568
IV4	.335	.713	.426	1.000	.617
DV	.470	.624	.568	.617	1.000

Table 4.3.2.15: Item-Total Statistics (IV1 to IV4 and DV)

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
IV1	13.3383	1.309	.676	.852	.805
IV2	13.6552	1.754	.554	.639	.831
IV3	13.4708	1.350	.755	.877	.773
IV4	13.4890	1.765	.611	.609	.822
DV	13.5844	1.479	.692	.587	.793

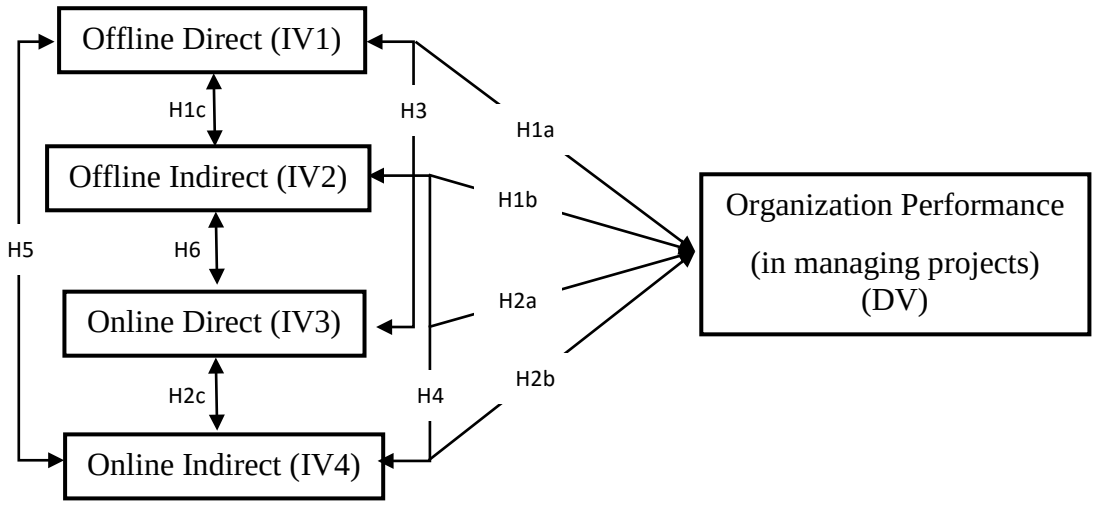
No questions have been further dropped from the survey questionnaire to improve the current Cronbach's alpha of 0.839, since dropping other questions might decrease the Cronbach's alpha, such as dropping IV1 or IV3 will decrease Cronbach's alpha to .805 or .773 respectively.

4.4 Inferential Analysis

Researcher starts to determine the strength and direction of the linear relationship between two continuous variables using Pearson’s Correlation Analysis, following by Multiple Regression Analysis to predict the continuous dependent variable

based on multiple independent variables. The inferential data analysis will begin with stating and explaining the respective assumptions following by the testing of the assumptions. For better understanding and ease of referring, the proposed conceptual framework is republish below:

Figure 4.4.1: Proposed Conceptual Framework



4.4.1 Pearson's Correlation Analysis

The Pearson product-moment correlation is used to determine the strength and direction of a linear relationship between two continuous variables. More specifically, the test generates a coefficient called the Pearson correlation coefficient, denoted as *r*, and it is this coefficient that measures the strength and direction of a linear relationship between two continuous variables. Its value can range from -1 for a perfect negative linear relationship to +1 for a perfect positive linear relationship. A value of 0 (zero) indicates no relationship between two variables. This test is also known by its shorter titles, the Pearson correlation or Pearson's correlation, which are often used interchangeably.

In order to run a Pearson's correlation, there are five assumptions that need to be considered. The first two relate to the choice of study design and the measurements chosen to make, whilst the other three relate to how the data fits the Pearson correlation model. These assumptions are:

Assumption 1: The two variables should be measured on a continuous scale (e.g. they are measured at the interval or ratio level). Examples of continuous variables include revision time (measured in hours), intelligence (measured using IQ score), exam performance (measured from 0 to 100), weight (measured in kg), and so forth.

Assumption 2: The two continuous variables should be paired (e.g. each case has two values, one for each variable).

Assumption 3: There needs to be a linear relationship between the two variables.

Assumption 4: There should be no significant outliers. Outliers are data points within the sample that do not follow a similar pattern to the other data points. Pearson's correlation coefficient, *r*, is sensitive to outliers, meaning that outliers can have an exaggerated influence on the value of *r*. This can lead to Pearson's correlation efficient not having a value that best represents the data as a whole. Therefore, it is best if there are no outliers or that they are kept to a minimum.

Assumption 5: If the researcher wished to run inferential statistics (null hypothesis significance testing), the research study also need to satisfy the assumption of bivariate normality. Researcher will find that this is particularly difficult to test for and so a simpler method is more commonly used.

Table 4.4.1.1: Pearson's Correlations (IV1 and DV)

Correlations

		IV1	DV
IV1	Pearson Correlation	1	.470**
	Sig. (2-tailed)		.000
	N	80	80
DV	Pearson Correlation	.470**	1
	Sig. (2-tailed)	.000	
	N	80	80

**. Correlation is significant at the 0.01 level (2-tailed).

The null hypothesis for the test is as follows:

$H1a_0$: There is no significant positive relationship between offline direct communications and successfully managing projects.

And the alternative hypothesis is:

$H1a_A$: There is a significant positive relationship between offline direct communications and successfully managing projects.

A Pearson's product-moment correlation was run to assess the relationship between offline direct internal communication link and organizational performance/success in managing projects of employees work at Klang valley. Preliminary analyses showed the relationship to be linear with both variables normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and there were no outliers.

There was a moderate positive correlation between offline direct internal communication link and organizational performance/success in managing projects of employees work at Klang valley, $r\,(78) = .47$, $p < .005$. The effectiveness of offline direct internal communication link statistically explained 22% of the effect

on organizational success in managing projects. There was a statistically significant relationship between offline direct internal communication link and organizational performance/success in managing projects, so report can reject the null hypothesis and accept the alternative hypothesis.

Table 4.4.1.2: Pearson's Correlations (IV2 and DV)

Correlations

		IV2	DV
IV2	Pearson Correlation	1	.624**
	Sig. (2-tailed)		.000
	N	80	80
DV	Pearson Correlation	.624**	1
	Sig. (2-tailed)	.000	
	N	80	80

**. Correlation is significant at the 0.01 level (2-tailed).

The null hypothesis for the test is as follows:
$H1b_0$: There is no significant positive relationship between offline indirect internal communications and successfully managing projects.

And the alternative hypothesis is:
$H1b_A$: There is a significant positive relationship between offline indirect internal communications and successfully managing projects.

A Pearson's product-moment correlation was run to assess the relationship between offline indirect internal communication link and organizational performance/success in managing projects of employees work at Klang valley. Preliminary analyses showed the relationship to be linear with both variables normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and there were no outliers.

There was a moderate positive correlation between offline indirect internal communication link and organizational performance/success in managing projects of employees work at Klang valley, r (78) = .624, p < .005. The effectiveness of offline indirect internal communication link statistically explained 39% of the effect on organizational success in managing projects. There was a statistically significant relationship between offline indirect internal communication link and organizational performance/success in managing projects, so report can reject the null hypothesis and accept the alternative hypothesis.

Table 4.4.1.3: Pearson's Correlations (IV3 and DV)

Correlations

		IV3	DV
IV3	Pearson Correlation	1	.568**
	Sig. (2-tailed)		.000
	N	80	80
DV	Pearson Correlation	.568**	1
	Sig. (2-tailed)	.000	
	N	80	80

**. Correlation is significant at the 0.01 level (2-tailed).

The null hypothesis for the test is as follows:

$H2a_0$: There is no significant positive relationship between online direct internal communications and successfully managing projects.

And the alternative hypothesis is:

$H2a_A$: There is a significant positive relationship between online direct internal communications and successfully managing projects.

A Pearson's product-moment correlation was run to assess the relationship between online direct internal communication link and organizational performance/success in managing projects of employees work at Klang valley. Preliminary analyses showed the relationship to be linear with both variables normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and there were no outliers.

There was a moderate positive correlation between online direct internal communication link and organizational performance/success in managing projects of employees work at Klang valley, $r\ (78) = .568$, $p < .005$. The effectiveness of online direct internal communication link statistically explained 32% of the effect on organizational success in managing projects. There was a statistically significant relationship between online direct internal communication link and organizational performance/success in managing projects, so report can reject the null hypothesis and accept the alternative hypothesis.

Table 4.4.1.4: Pearson's Correlations (IV4 and DV)

Correlations

		IV4	DV
IV4	Pearson Correlation	1	.617**
	Sig. (2-tailed)		.000
	N	80	80
DV	Pearson Correlation	.617**	1
	Sig. (2-tailed)	.000	
	N	80	80

**. Correlation is significant at the 0.01 level (2-tailed).

The null hypothesis for the test is as follows:
$H2b_0$: There is no significant positive relationship between online indirect internal communications and successfully managing projects.

And the alternative hypothesis is:
$H2b_A$: There is a significant positive relationship between online indirect internal communications and successfully managing projects.

A Pearson's product-moment correlation was run to assess the relationship between online indirect internal communication link and organizational performance/success in managing projects of employees work at Klang valley. Preliminary analyses showed the relationship to be linear with both variables normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and there were no outliers.

There was a moderate positive correlation between online indirect internal communication link and organizational performance/success in managing projects of employees work at Klang valley, $r\ (78) = .617$, $p < .005$. The effectiveness of online indirect internal communication link statistically explained 38% of the effect on organizational success in managing projects. There was a statistically significant relationship between online indirect internal communication link and organizational performance/success in managing projects, so report can reject the null hypothesis and accept the alternative hypothesis.

Table 4.4.1.5: Pearson's Correlations (IV1 to IV4 and DV)

Correlations

		IV1	IV2	IV3	IV4	DV
IV1	Pearson Correlation	1	.326**	.907**	.335**	.470**
	Sig. (2-tailed)		.003	.000	.002	.000
	N	80	80	80	80	80
IV2	Pearson Correlation	.326**	1	.295**	.713**	.624**
	Sig. (2-tailed)	.003		.008	.000	.000
	N	80	80	80	80	80
IV3	Pearson Correlation	.907**	.295**	1	.426**	.568**
	Sig. (2-tailed)	.000	.008		.000	.000
	N	80	80	80	80	80
IV4	Pearson Correlation	.335**	.713**	.426**	1	.617**
	Sig. (2-tailed)	.002	.000	.000		.000
	N	80	80	80	80	80
DV	Pearson Correlation	.470**	.624**	.568**	.617**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	80	80	80	80	80

**. Correlation is significant at the 0.01 level (2-tailed).

Researcher bring the Pearson's correlation analysis to another level in assessing the relationship between each of the four independent variables (IV1 to IV4).

There was a small but definite positive correlation between offline direct internal communication link and offline indirect internal communication link, r (78) = .326, p < .005. The offline direct internal communication link statistically explained only 11% of the offline indirect internal communication link and vice versa.

There was a moderate positive correlation between online direct internal communication link and online indirect internal communication link, r (78) = .426,

$p < .005$. The online direct internal communication link statistically explained only 18% of the online indirect internal communication link and vice versa.

There was a very strong positive correlation between offline direct internal communication link and online direct internal communication link, $r\ (78) = .907$, $p < .005$. The offline direct internal communication link statistically explained 82% of the online direct internal communication link and vice versa.

There was a high positive correlation between offline indirect internal communication link and online indirect internal communication link, $r\ (78) = .713$, $p < .005$. The offline indirect internal communication link statistically explained 51% of the online indirect internal communication link and vice versa.

There was a small but definite positive correlation between offline direct internal communication link and online indirect internal communication link, $r\ (78) = .335$, $p < .005$. The offline direct internal communication link statistically explained only 11% of the online indirect internal communication link and vice versa.

There was a small and almost negligible positive correlation between offline indirect internal communication link and online direct internal communication link, $r\ (78) = .295$, $p < .005$. The offline indirect internal communication link statistically explained only 9% of the online direct internal communication link and vice versa.

4.4.2 Multiple Regression Analysis

A multiple regression is used to predict a continuous dependent variable based on multiple independent variables. As such, it extends simple linear regression, which is used when you have only one continuous independent variable. Multiple regression also allows researcher to determine the overall fit (variance explained) of the model and the relative contribution of each of the predictors to the total variance explained.

In order to run a multiple regression analysis, there are eight assumptions that need to be considered. The first two assumptions relate to the choice of study design and the measurements chosen to make, whilst the other six assumptions relate to how the data fits the multiple regression model. These assumptions are:

Assumption 1: The research study have one dependent variable that is measured at the continuous level (e.g. the interval or ratio level). Examples of continuous variables include height (measured in centimeters), temperature (measured in °C), revision time (measured in hours), intelligence (measured using IQ score), organization size (measured in terms of the number of employees), age (measured in years), reaction time (measured in milliseconds), grip strength (measured in kg), weight (measured in kg), power output (measured in watts), test performance (measured from 0 to 100), sales (measured in number of transactions per month), academic achievement (measured in terms of CGPA score), and so forth.

Assumption 2: The research study have two or more independent variables that are measured either at the continuous or nominal level.

Assumption 3: The research study should have independence of observations (e.g. independence of residuals). The assumption of independence of observations in a multiple regression is designed to test for 1st-order autocorrelation, which means that adjacent observations (specifically, their errors) are correlated (e.g. not independent). This is largely a study design issue because the observations in a multiple regression must not be related or researcher would need to run a different statistical test such as time series methods. In IBM SPSS, independence of observations can be checked using the Durbin-Watson statistic.

Assumption 4: There needs to be a linear relationship between (a) the dependent variable and each of the independent variables, and (b) the dependent variable and the independent variables collectively. The assumption of linearity in a multiple regression needs to be tested in two parts (but in no particular order). Researcher need to establish if a linear relationship exists between the dependent and independent variables collectively, which can be achieved by plotting

a scatterplot of the studentized residuals (SRE_1) against the (unstandardized) predicted values (PRE_1). Researcher also need to establish if a linear relationship exists between the dependent variable and each of the independent variables, which can be achieved using partial regression plots between each independent variable and the dependent variable (although researcher can ignore any categorical independent variables; e.g. gender).

Assumption 5: The data needs to show homoscedasticity of residuals (equal error variances). The assumption of homoscedasticity is that the residuals are equal for all values of the predicted dependent variable (e.g. the variances along the line of best fit remain similar as researcher move along the line). To check for heteroscedasticity, researcher can use the plot created to check linearity in the previous section, namely plotting the studentized residuals (SRE_1) against the unstandardized predicted values (PRE_1).

Assumption 6: The data must not show multicollinearity. Multicollinearity occurs when researcher have two or more independent variables that are highly correlated with each other. This leads to problems with understanding which independent variable contributes to the variance explained in the dependent variable, as well as technical issues in calculating a multiple regression model.

Assumption 7: There should be no significant outliers, high leverage points or highly influential points. Outliers, leverage and influential points are different terms used to represent observations in the data set that are in some way unusual when researcher wish to perform a multiple regression analysis. These different classifications of unusual points reflect the different impact they have on the regression line. An observation can be classified as more than one type of unusual point. However, all these points can have a very negative effect on the regression equation that is used to predict the value of the dependent variable based on the independent variables. This can change the output that IBM SPSS produces and reduce the predictive accuracy of the results as well as the statistical significance. Fortunately, when using IBM SPSS to run multiple regression on the data,

researcher can detect possible outliers, high leverage points and highly influential points.

Assumption 8: Researcher needs to check that the residuals (errors) are approximately normally distributed. In order to be able to run inferential statistics (e.g. determine statistical significance), the errors in prediction, the residuals need to be normally distributed. Two common methods researcher can use to check for the assumption of normality of the residuals are: (a) a histogram with superimposed normal curve and a P-P Plot; or (b) a Normal Q-Q Plot of the studentized residuals (SRE_1).

Multiple regression allows for a relationship to be modelled between multiple independent variables and a single dependent variable where the independents variable are being used to predict the dependent variable. Considering, for example, four independent variables to be "X1" through "X4" and the dependent variable to be "Y", a multiple regression models the following:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where β_0 is the intercept (also known as the constant), β_1 is the slope parameter (also known as the slope coefficient) for X_1, and so forth, and ε represents the errors. This represents the population model, but it can be estimated as follows:

$$Y = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + e$$

Where b_0 is the sample intercept (aka constant) and estimates β_0, b_1 is the sample slope parameter for X_1 and estimates β_1, and so forth, and e represents the sample errors/residuals and estimates ε.

This type of statistical test relies on the initial assumption that there is, in fact, a linear relationship between each independent variable and the dependent variable and a linear relationship between the "composite" of the independent variables and the dependent variable. This assumption can be examined, as researcher will do.

Confidence intervals can be calculated for the sample intercept and slope parameters to estimate the likely range of values that these parameters might take in the population. Furthermore, predictions can be made based on the regression equation calculated.

4.4.2.1 Test for Independence of Observations

A large part of the rationale for testing independence of observations is the study design. Indeed, researcher may have a study design where it is highly unlikely that observations will be related, and for this reason, researcher will not need to test for independence of observations statistically using the Durbin-Watson test. To provide some background, the Durbin-Watson test is a test for a particular type of (lack of) independence; namely, 1st-order autocorrelation, which means that adjacent observations (specifically, their errors) are correlated (e.g. not independent).

Table 4.4.2.1.1: Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.766[a]	.587	.565	.26070	1.542

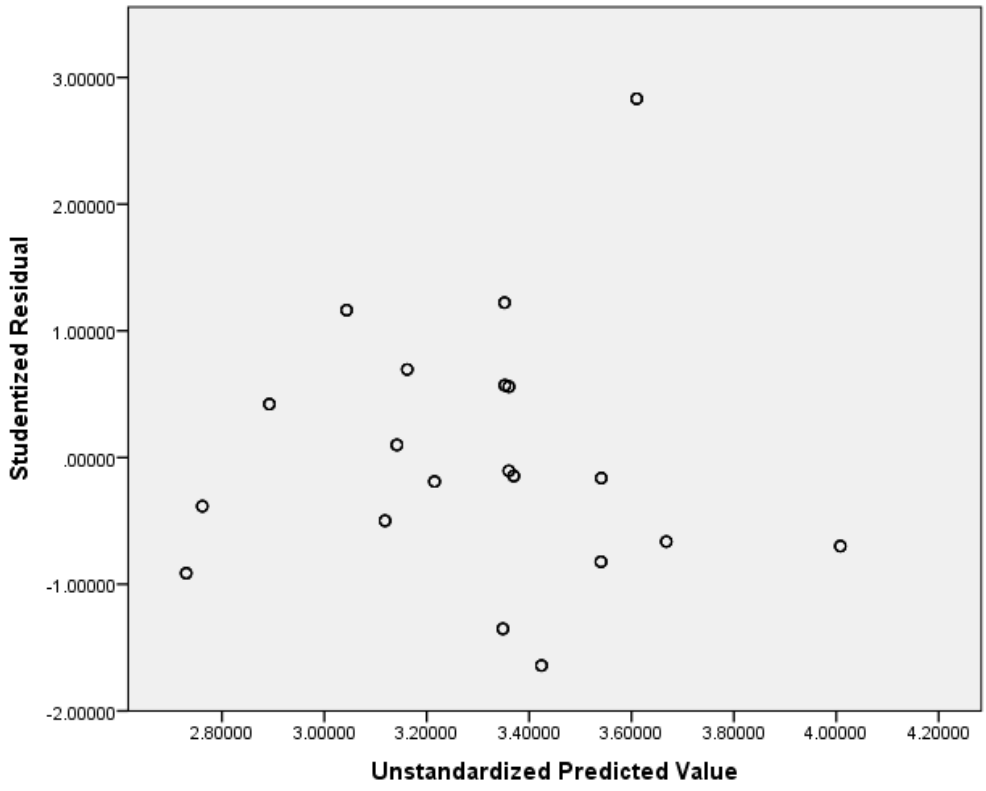
a. Predictors: (Constant), IV4, IV1, IV2, IV3

b. Dependent Variable: DV

There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.542.

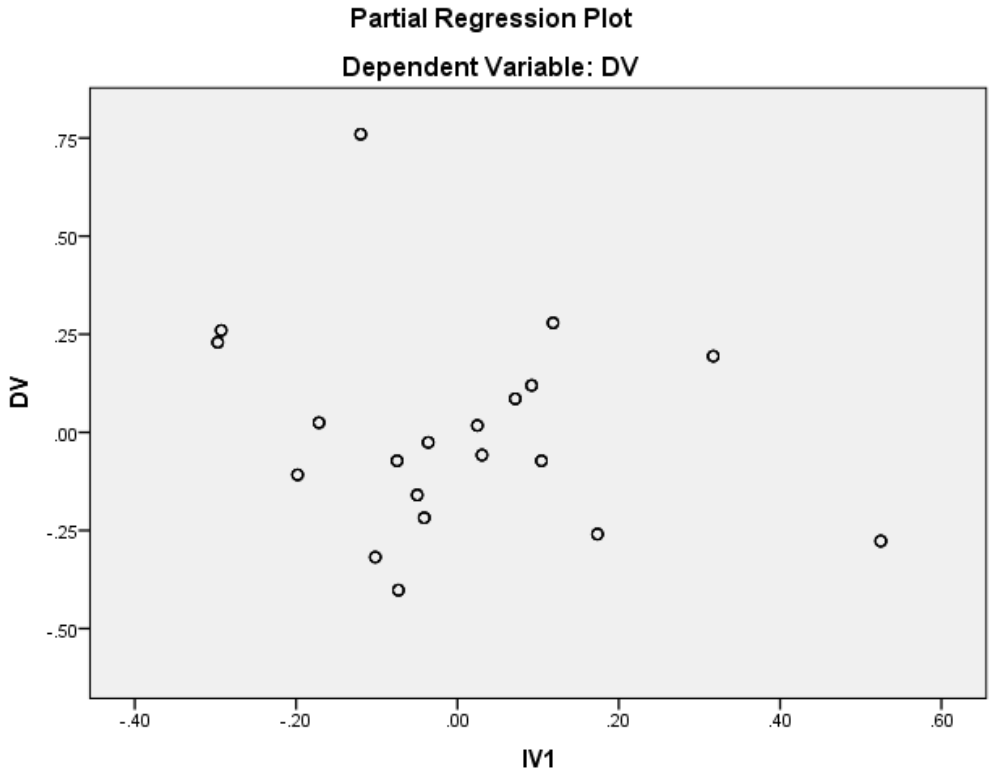
4.4.2.2 Test for Linearity

Figure 4.4.2.2.1: Scatterplot of the studentized residuals (SRE_1) against the (unstandardized) predicted values (PRE_1)



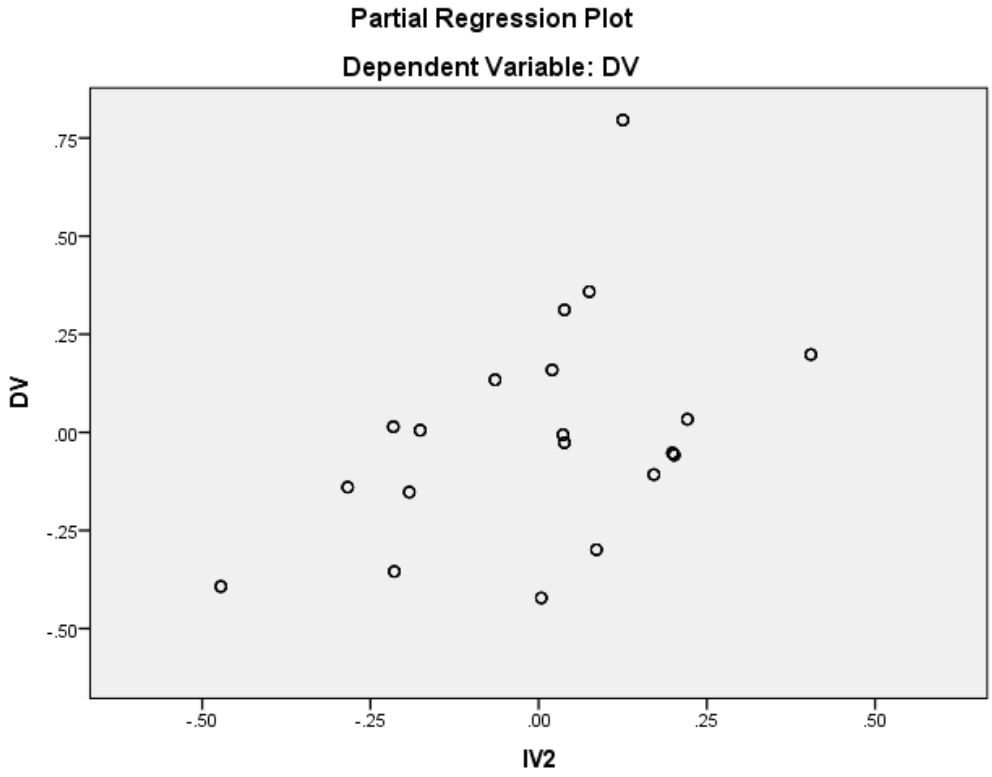
From the scatterplot shown above, the relationship between the dependent variable and independent variables is likely to be linear.

Figure 4.4.2.2.2: Partial Regression Plot of the dependent variable (DV) against the independent variable (IV1)



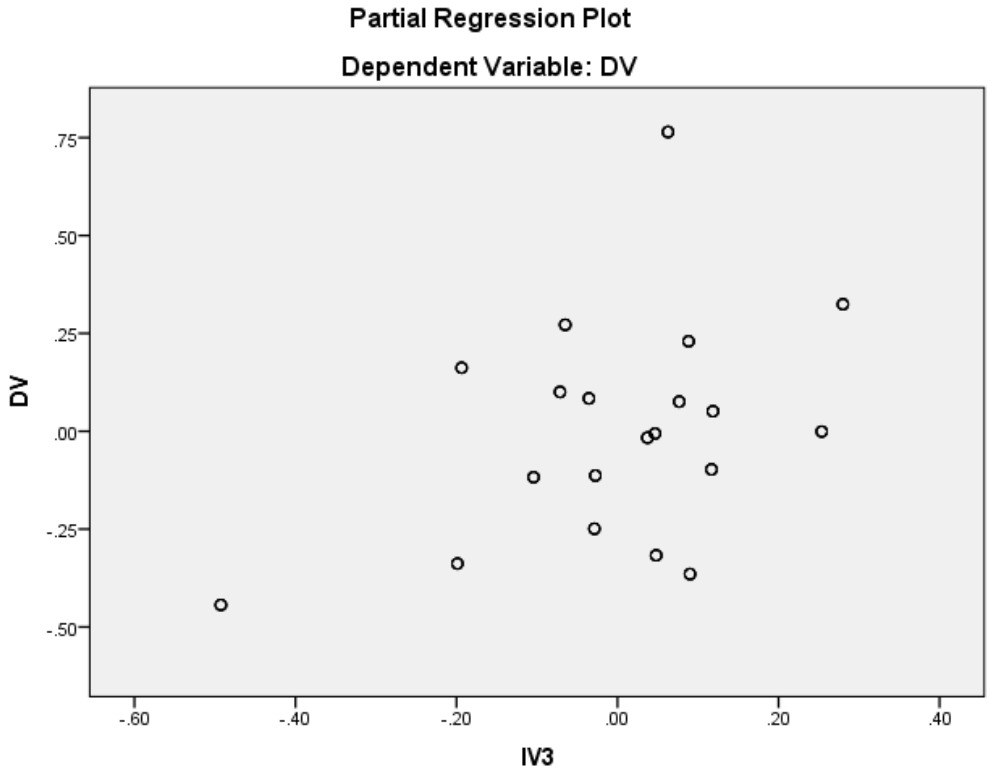
The partial regression plot above shows an approximately linear relationship between independent variable (IV1) and dependent variable (DV).

Figure 4.4.2.2.3: Partial Regression Plot of the dependent variable (DV) against the independent variable (IV2)



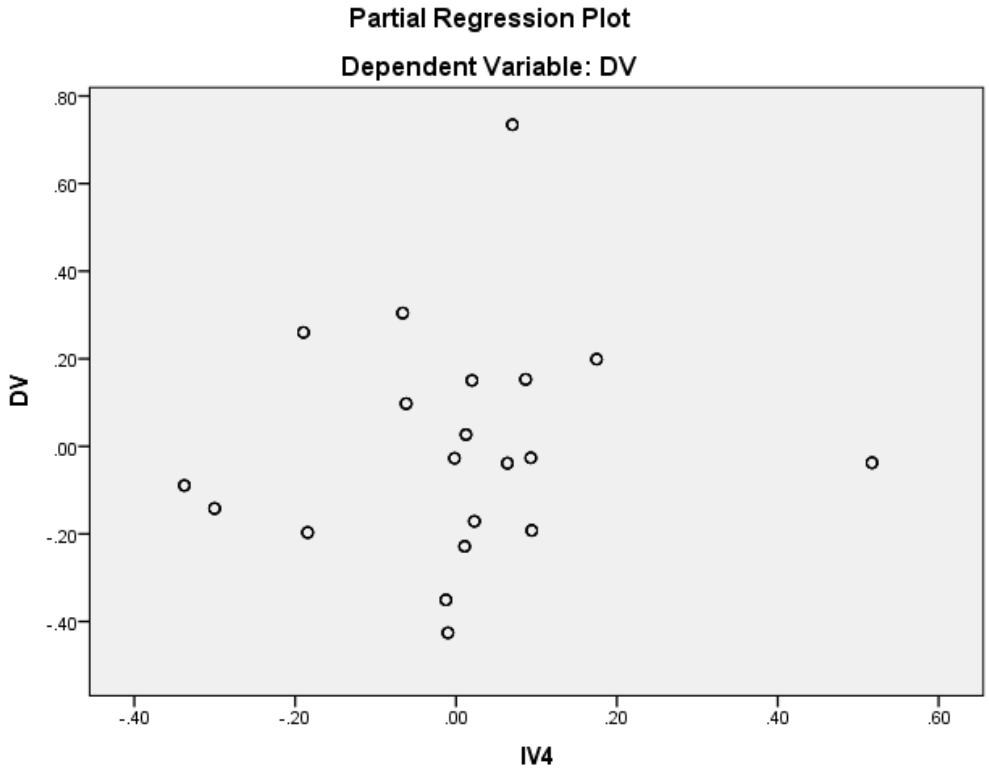
The partial regression plot above shows a somewhat linear relationship between independent variable (IV2) and dependent variable (DV).

Figure 4.4.2.2.4: Partial Regression Plot of the dependent variable (DV) against the independent variable (IV3)



The partial regression plot above shows a somewhat linear relationship between independent variable (IV3) and dependent variable (DV).

Figure 4.4.2.2.5: Partial Regression Plot of the dependent variable (DV) against the independent variable (IV4)

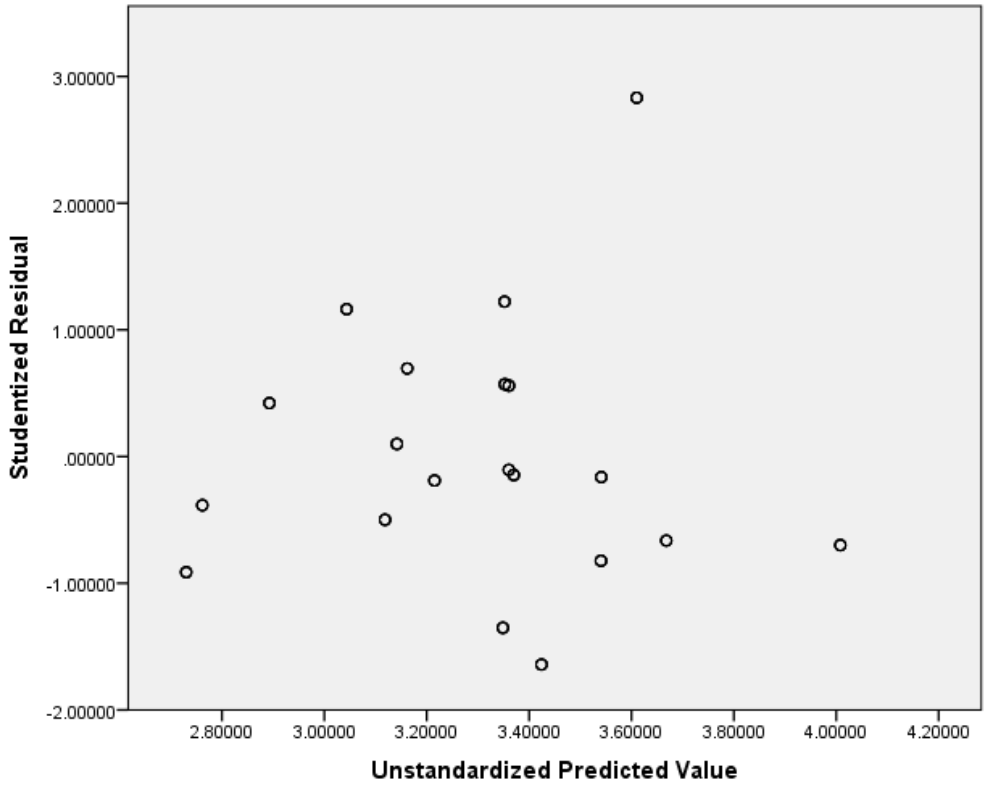


The partial regression plot above shows a somewhat linear relationship between independent variable (IV4) and dependent variable (DV).

4.4.2.3 Test for Homoscedasticity

The assumption of homoscedasticity is that the residuals are equal for all values of the predicted dependent variable.

Figure 4.4.2.3.1: Scatterplot of the studentized residuals (SRE_1) against the (unstandardized) predicted values (PRE_1)



There was homoscedasticity, as assessed by visual inspection of the scatterplot of studentized residuals against unstandardized predicted values.

4.4.2.4 Test for Multicollinearity

Multicollinearity occurs when the research study has two or more independent variables that are highly correlated with each other. This leads to problems with understanding which variable contributes to the variance explained and technical issues in calculating a multiple regression model. There are two stages to identifying multicollinearity: inspection of correlation coefficients and Tolerance/VIF values.

Table 4.4.2.4.1: Correlations (IV1 to IV4 and DV)

Correlations

		DV	IV1	IV2	IV3	IV4
Pearson Correlation	DV	1.000	.470	.624	.568	.617
	IV1	.470	1.000	.326	.907	.335
	IV2	.624	.326	1.000	.295	.713
	IV3	.568	.907	.295	1.000	.426
	IV4	.617	.335	.713	.426	1.000
Sig. (1-tailed)	DV	.	.000	.000	.000	.000
	IV1	.000	.	.002	.000	.001
	IV2	.000	.002	.	.004	.000
	IV3	.000	.000	.004	.	.000
	IV4	.000	.001	.000	.000	.
N	DV	80	80	80	80	80
	IV1	80	80	80	80	80
	IV2	80	80	80	80	80
	IV3	80	80	80	80	80
	IV4	80	80	80	80	80

From the table above, clearly shown that there are no correlations larger than 0.7 in the result, except between IV1 and IV3 and between IV2 and IV4.

Table 4.4.2.4.2: Coefficients (IV1 to IV4 and DV)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-.287	.376		-.764	.447	-1.036	.462					
	IV1	-.302	.153	-.372	-1.980	.051	-.606	.002	.470	-.223	-.147	.156	6.417
	IV2	.580	.144	.452	4.041	.000	.294	.867	.624	.423	.300	.440	2.275
	IV3	.660	.177	.725	3.737	.000	.308	1.012	.568	.396	.277	.146	6.841
	IV4	.156	.166	.111	.942	.349	-.174	.487	.617	.108	.070	.395	2.530

a. Dependent Variable: DV

All the Tolerance values are greater than 0.1 (the lowest is 0.146), and VIF values are lesser than 10 (the highest is 6.841), so the result can be fairly confident that researcher do not have a problem with collinearity in this particular data set.

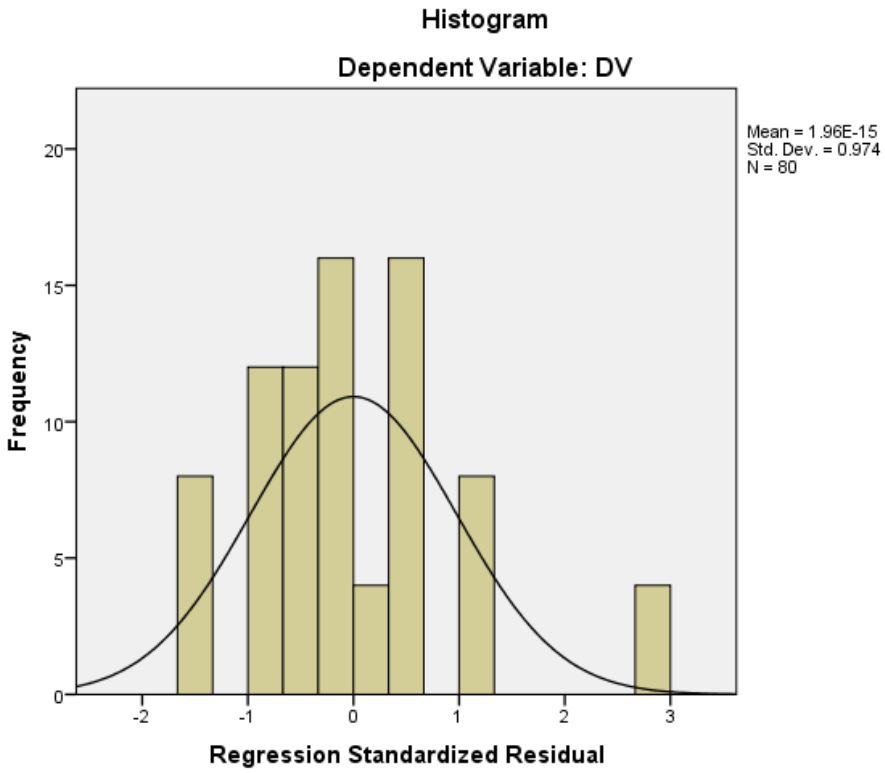
4.4.2.5 Test for Outliers

A value of greater than ±3 is a common cut-off criteria used to define whether a particular residual might be representative of an outlier or not. There is no Casewise Diagnostics table been produced. Therefore the report can safely assume all the cases have standardized residuals less than ±3, since Casewise Diagnostics table will not be produced as part of the IBM SPSS output.

4.4.2.6 Test for Normality

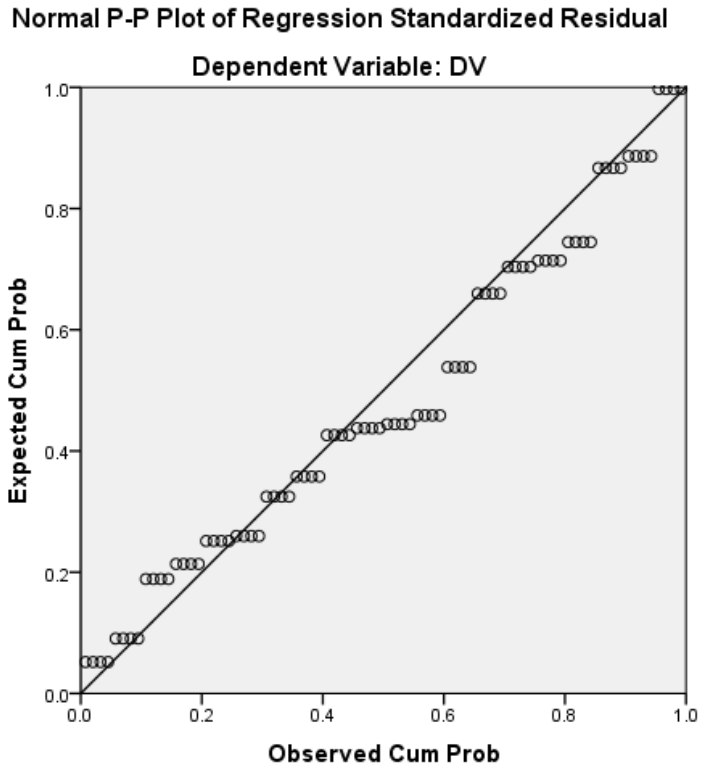
In order to be able to run inferential statistics (e.g. determine statistical significance), the errors in prediction, the residuals need to be normally distributed. Two common methods researcher can use to check for the assumption of normality of the residuals are: (a) a histogram with superimposed normal curve and a P-P Plot, or (b) a Normal Q-Q Plot of the studentized residuals.

Figure 4.4.2.6.1: Histogram of the Frequency against the Regression Standardized Residual



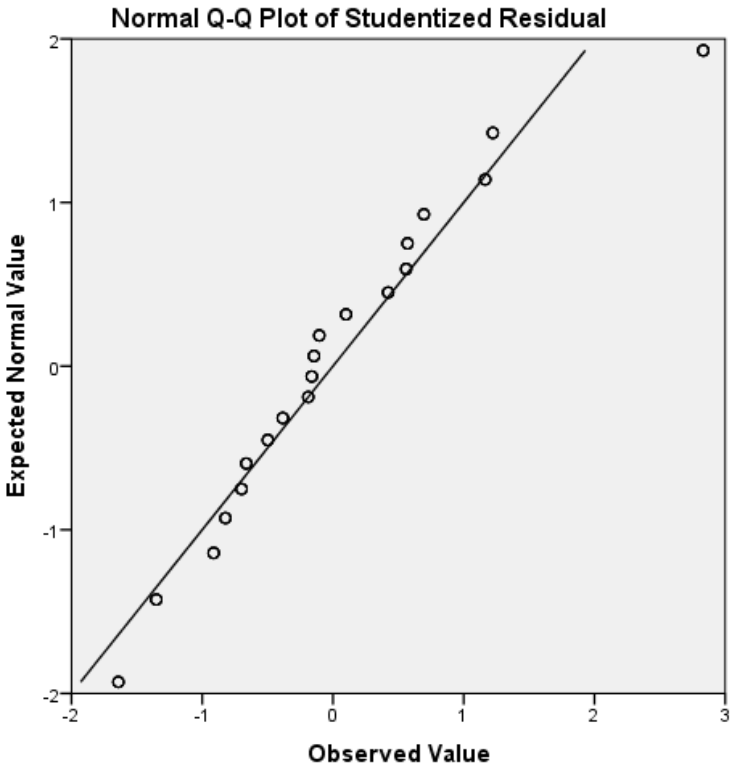
The result shown indicated from the histogram above that the standardized residuals appear to be approximately normally distributed.

Figure 4.4.2.6.2: P-P Plot of Regression Standardized Residual



The result indicated from the P-P Plot above that although the points are not aligned perfectly along the diagonal line (the distribution is somewhat peaked), they are close enough to indicate that the residuals are close enough to normal for the analysis to proceed. As multiple regression analysis is fairly robust against deviations from normality, researcher can accept this result as meaning that no transformations or otherwise need to take place; researcher have not violated the assumption of normality.

Figure 4.4.2.6.3: P-P Plot of Regression Standardized Residual



The result indicated from the Q-Q Plot above that although the points are not aligned perfectly along the diagonal line (the distribution is somewhat peaked), they are close enough to indicate that the residuals are close enough to normal for the analysis to proceed. As multiple regression analysis is fairly robust against deviations from normality, researcher can accept this result as meaning that no transformations or otherwise need to take place; the data have not violated the assumption of normality.

4.4.2.7 Multiple Linear Regression

There are three main objectives that researcher can achieve with the output from a multiple regression: (1) determine the proportion of the variation in the dependent variable explained by the independent variables; (2) predict dependent variable values based on new values of the independent variables; and (3) determine how

much the dependent variable changes for a one unit change in the independent variables.

Table 4.4.2.7.1: Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.766[a]	.587	.565	.26070	1.542

a. Predictors: (Constant), IV4, IV1, IV2, IV3

b. Dependent Variable: DV

The multiple correlation coefficient, which can be abbreviated to just *R*, is simply the Pearson correlation coefficient between the scores predicted by the regression model and the actual values of the dependent variable. As such, *R* is a measure of the strength of the linear association between these two variables and can give an indication as to the goodness of the model fit with a value that can range from 0 to 1, with higher values indicating a stronger linear association. A multiple correlation coefficient of 0 (zero) indicates no linear association between the dependent variable and the independent variables and a value of 1 a perfect linear association. A value of **0.766** indicates a moderate to strong level of association.

The coefficient of determination, more commonly known as R^2 – is a measure of the proportion of variance in the dependent variable that is explained by the independent variable. More specifically (and accurately), it is the proportion of variance in the dependent variable that is explained by the independent variables over and above the mean model. Researcher might also hear this expressed as the proportion of variation accounted for by the regression model over and above the mean model.

Given a desire to predict a dependent variable with multiple independent variables the simplest model could choose is one without any independent variables at all. This is called the mean model and it is simply the mean of the dependent variable. In this situation, the best prediction of the dependent variable is its mean value.

This is also the worst possible prediction. In this situation, researcher can assess the amount of variability in the model (e.g. as a measure of the error of prediction). Then, researcher run the multiple regression with all the independent variables added (which stands to reason will give researcher the best prediction as using all the available information) and measure the variability of this model (e.g. as a measure of the error of prediction). This model's variability will be lower than the mean model's variability because there has been a reduction in variability, which has been "caused" or "explained" by the addition of the independent variables. This is often expressed as a proportion or percentage and is what is referred to as R^2. It assesses overall model fit.

The result indicated that R^2 is equal to **0.587** in this result. This means that the addition of all the independent variables into a regression model explained **58.7%** of the variability of the dependent variable. However, R^2 is based on the sample and is considered a positively-biased estimate of the proportion of the variance of the dependent variable accounted for by the regression model (e.g. it is larger than it should be when generalizing to a larger population). Despite this criticism, it is still considered by some to be a good starting measure to understanding the results. That said, there is another measure called adjusted R^2 which corrects for this positive bias in order to provide a value that would be expected in the population.

The result indicated that adjusted R^2 is **0.565** in this data. Adjusted R^2 will always be smaller than R^2, but it is preferable that researcher use this value to report the proportion of variance explained (e.g. report 56.5% rather than 58.7%), although ideally researcher might be able to report both. Adjusted R^2 is also an estimate of effect size, which at 0.565 (56.5%), is indicative of a large effect size.

Table 4.4.2.7.2: ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.258	4	1.815	26.699	.000[b]
	Residual	5.097	75	.068		
	Total	12.356	79			

a. Dependent Variable: DV

b. Predictors: (Constant), IV4, IV1, IV2, IV3

The result indicated that the "Sig." value is .000, which actually means that $p < .0005$. If $p < .05$, researcher have a statistically significant result. On the other hand, if $p > .05$, researcher do not have a statistically significant result. As $p < .0005$ satisfies $p < .05$, the report have a statistically significant result. This means that the addition of all our independent variables (e.g. the overall model) leads to a model that: (a) is statistically significantly better at predicting the dependent variable than the mean model; and (b) is a statistically significantly better fit to the data than the mean model. The null hypothesis of this test is that the multiple correlation coefficient, *R*, is equal to 0 (zero). Researcher can also deduce from this result that at least one regression (slope) coefficient (e.g. except the intercept) is statistically significantly different to zero.

Table 4.4.2.7.3: Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-.287	.376		-.764	.447	-1.036	.462					
	IV1	-.302	.153	-.372	-1.980	.051	-.606	.002	.470	-.223	-.147	.156	6.417
	IV2	.580	.144	.452	4.041	.000	.294	.867	.624	.423	.300	.440	2.275
	IV3	.660	.177	.725	3.737	.000	.308	1.012	.568	.396	.277	.146	6.841
	IV4	.156	.166	.111	.942	.349	-.174	.487	.617	.108	.070	.395	2.530

a. Dependent Variable: DV

The regression equation for the report can be expressed in the following form:

$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$ or after inserting the variables

$DV = b_0 + b_1IV1 + b_2IV2 + b_3IV3 + b_4IV4 + e$

where b_0 is the intercept (also known as constant) and b_1 through b_4 are the slope coefficients (one for each variable). By substituting the values for b_0 through b_4 researcher will be able to predict DV given any values researcher enter for IV1, IV2, IV3 or IV4.

From the table above, researcher can now substitute the values of the coefficients into the regression equation, as shown below:

predicted DV = –0.287 – (0.302 IV1) + (0.58 IV2) + (0.66 IV3) + (0.156 IV4)

4.4.3 Hypothesis Summary

From the inferential data analysis, researcher manage to test the hypotheses. Following is the summary:

H1a: There is a significant positive relationship between offline direct internal communications and successfully managing projects.
H1b: There is a significant positive relationship between offline indirect internal communications and successfully managing projects.

H1c: There is a significant positive association between offline indirect internal communications to offline direct internal communications and successfully managing projects.

H2a: There is a significant positive relationship between online direct internal communications and successfully managing projects.
H2b: There is a significant positive relationship between online indirect internal communications and successfully managing projects.
H2c: There is a significant positive association between online indirect internal communications to online direct internal communications and successfully managing projects.

H3: There is a significant association between negative offline direct internal communications to positive online direct internal communications and successfully managing projects.
H4: There is a significant positive association between offline indirect internal communications to online indirect internal communications and successfully managing projects.

H5: There is a significant positive association between offline direct internal communications to online indirect internal communications and successfully managing projects.

H6: There is a significant positive association between offline indirect internal communications to online direct internal communications and successfully managing projects.

A multiple regression was run to predict organizational performance/success in managing projects (DV) from offline direct internal communication link (IV1), offline indirect internal communication link (IV2), online direct internal communication link (IV3) and online indirect internal communication link (IV4). There was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was independence of

residuals, as assessed by a Durbin-Watson statistic of 1.542. There was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was no evidence of multicollinearity, as assessed by tolerance values greater than 0.1. There were no studentized deleted residuals greater than ±3 standard deviations, no leverage values less than 0.2, and values for Cook's distance above 1. There assumption of normality was met, as assessed by Q-Q Plot. The multiple regression model statistically significantly predicted DV, $F(4, 75) = 26.699$, $p < .0005$, adj. $R^2 = .565$. All four variables (except IV4) added statistically significantly to the prediction, $p < .05$. Regression coefficients and standard errors can be found in table below.

predicted DV = –0.287 – (0.302 IV1) + (0.58 IV2) + (0.66 IV3) + (0.156 IV4)

Table 4.4.3.1: Coefficients

Variable	Unstandardized Coefficients		Standardized Coefficients
	B	Std. Error	Beta
Intercept	-0.287	0.376	
Offline direct internal communication link	-0.302	0.153	-0.372
Offline indirect internal communication link	0.580	0.144	0.452
Online direct internal communication link	0.660	0.177	0.725
Online indirect internal communication link	0.156	0.166	0.111

4.5 Conclusion

In this chapter, researcher able to meet the research objectives through data analysis using Pearson's Correlation analysis and Multiple Regression Analysis. From the results, all the research questions are able to be answered. Moreover, all the hypothesis are being tested and will be further discuss in next chapter.

CHAPTER 5

DISCUSSION, IMPLICATIONS AND CONCLUSION

5.0 Introduction

Internal communication typically involves a combination of both print and electronic/digital media. Email is the most common form of electronic communication on the job; email can be used on its own or as a way to send an attachment. Text messaging is also popular at work, especially for short messages that need to be seen quickly.

Research study showed that email is the primary way people communicate in today's workplace and professional settings, largely replacing the paper memo and letter. Unlike paper, email offers both rapid speed and wide reach: with one keystroke, an email can quickly reach the inboxes of thousands of people. These receivers can easily forward the emails to others. Email is useful when people are in different time zone or have different working schedules. Email also provides written documentation, an electronic trail, so to speak; that helps track a project or conversation or that may become important for legal reasons down the road.

According to the respondents, email is often the primary means of communication, but it might also be used as a vehicle for sending attachments (long reports, formal memos, letters on letterhead, or working documents such as word processing files). Either way, email messages tend to be conversational in tone and are therefore best suited for simple, straightforward messages that are not too long and that do

not leave a lot of room for misunderstanding. Even writers who are extremely careful with traditional paper correspondence sometimes ignore spelling and grammar as they dash off various emails are setting to look more polished. Writers are paying greater attention to style and correctness and making their emails look more professional.

Unlike paper documents, with email employees have little control over the final audience. They might send the message to only a small group, but because of easy forwarding, their audience could turn out to be much larger. People also tend to be more casual and off-the-cuff on email, sometimes more than in person; therefore, audience considerations become crucial.

Email accomplishes various purposes: to schedule meetings, update team members on a project, send simple memos in electronic form, and send attached documents to colleagues both within and outside of an organization. Think carefully about whether email is the best medium for the given message. If we want our message to be private or confidential or if our message is too complex for email, set up a personal face-to-face meeting or phone call. Employees can always follow up with a brief email that summarizes the main points.

A faster medium than email, text messages allow us to communicate quickly using a cell phone or smart phone. When employees send a text, it is received almost immediately. Texts can be sent to one person or to several. Long popular for personal communication, texting has recently become common in the workplace for short, quick exchanges. Although few rules govern the use of texting on the job, many companies recognize the value of short, instantaneous messages and are increasingly accepting the text message as legitimate communication.

Employees need to consider our audience carefully before deciding to use text messaging for workplace communication. Texting can be useful in place of a phone call for short questions or notifications. But keep in mind that most people receive text messages on their personal cell phone number and may be charged a

fee per message, so only send text messages if the recipient has agreed to communicate this way.

In most cases, defer to using email, which requires timely, but not instant and rapid-fire, responses. Texting is not a good medium for the kind of written communication that requires careful planning, composing, and editing. For such messages, consider using email or print instead of texting. Importantly, text messages are typically not archived, so if employees should need to review a message weeks or months later, they may not be able to find the information.

Email and text messaging are common forms of communication, both personally and on the job. Yet when deciding which one to use for a workplace situation, employees may want to take a moment to consider a more detailed comparison about audience, purpose, and style. Technical communication is virtual and can therefore disappear temporarily or permanently when technology fails. Before the advent of the internet, paper copies and written notes allowed for a permanent record. Barring some disaster, once something was recorded, a physical document would be retrievable from the file cabinet.

Today employees can rely on technology to preserve everything for them. However, computer crashes, server failures, faulty flash drives, and viruses compromise the permanence of virtual communications. So, have a backup plan. Use email rather than texts to record important ongoing conversations, and print out or back up digital work to an external hard drive or server routinely. Do not rely on continuous online access, along with regular electronic backups, make regular print copies.

5.1 Summary of Statistical Analysis

5.1.1 Descriptive Analysis

Out of the 80 respondents responded, there are 43 male (around 54%) and 37 female (around 46%). Out of the 80 respondents responded, there are 12

employees from 20-29 years old age group (about 15%), 26 employees from 30-35 years old age group (about 32.5%), 13 employees from 36-39 years old age group (about 16%), 23 employees from 40-49 years old age group (about 29%), and 6 employees from 50-59 years old age group (about 7.5%). Out of the 80 respondents responded, there are 15 employees categorize as junior executive (about 19%), 27 employees categorize as senior executive (about 34%), 15 employees categorize as junior managerial (about 19%), 17 employees categorize as managerial (about 21%), and 6 employees categorize as senior managerial (about 7.5%).

5.1.2 Inferential Analysis

Table 5.1.2.1: Result Summary of Research Objectives

	Research Questions	Results
RO1a	To examine the offline direct internal communications in relation with successfully managing projects	Achieved
RO1b	To examine the offline indirect internal communications in relation with successfully managing projects	Achieved
RO1c	To examine the offline indirect internal communications in relation with offline direct internal communications and successfully managing projects	Achieved
RO2a	To examine the online direct internal communications in relation with successfully managing projects	Achieved
RO2b	To examine the online indirect internal communications in relation with successfully managing projects	Achieved
RO2c	To examine the online indirect internal communications in relation with online direct internal communications and successfully managing projects	Achieved
RO3	To examine the offline direct internal communications in relation with online direct internal communications and successfully managing projects	Achieved

RO4	To examine the offline indirect internal communications in relation with online indirect internal communications and successfully managing projects	Achieved
RO5	To examine the offline direct internal communications in relation with online indirect internal communications and successfully managing projects	Achieved
RO6	To examine the offline indirect internal communications in relation with online direct internal communications and successfully managing projects	Achieved

Table 5.1.2.2: Result Summary of Research Questions

	RQ1a
Research Question	How does offline direct internal communications in relation with successfully managing projects?
Research Answer	Effective offline direct internal communication system link will influence moderately in successfully managing projects.

	RQ1b
Research Question	How does offline indirect internal communications in relation with successfully managing projects?
Research Answer	Effective offline indirect internal communication system link will influence moderately in successfully managing projects.

	RQ1c
Research Question	What is the relationship of offline indirect internal communications in relation with offline direct internal communications and successfully managing projects?
Research Answer	Effective offline indirect internal communication system link and offline direct internal communication system link will influence little but definite in successfully managing projects.

	RQ2a
Research Question	How does online direct internal communications in relation with successfully managing projects?
Research Answer	Effective online direct internal communication system link will influence moderately in successfully managing projects.

	RQ2b
Research Question	How does online indirect internal communications in relation with successfully managing projects?
Research Answer	Effective online indirect internal communication system link will influence moderately in successfully managing projects.

	RQ2c
Research Question	What is the relationship of online indirect internal communications in relation with online direct internal communications and successfully managing projects?
Research Answer	Effective online indirect internal communication system link and online direct internal communication system link will influence moderately in successfully managing projects.

	RQ3
Research Question	What is the relationship of offline direct internal communications in relation with online direct internal communications and successfully managing projects?
Research Answer	Effective offline direct internal communication system link and online direct internal communication system link will influence very strongly in successfully managing projects.

	RQ4
Research Question	What is the relationship of offline indirect internal communications in relation with online indirect internal communications and successfully managing projects?
Research Answer	Effective offline indirect internal communication system link and online indirect internal communication system link will influence strongly in successfully managing projects.

	RQ5
Research Question	What is the relationship of offline direct internal communications in relation with online indirect internal communications and successfully managing projects?
Research Answer	Effective offline direct internal communication system link and online indirect internal communication system link will influence little but definite in successfully managing projects.

	RQ6
Research Question	What is the relationship of offline indirect internal communications in relation with online direct internal communications and successfully managing projects?
Research Answer	Effective offline indirect internal communication system link and online direct internal communication system link will influence little and almost negligible in successfully managing projects.

Table 5.1.2.3: Result Summary of Hypotheses Testing

	Hypotheses	Results
H1a	There is a significant positive relationship between offline direct internal communications and successfully managing projects	Supported
H1b	There is a significant positive relationship between offline indirect internal communications and successfully managing projects	Supported
H1c	There is a significant positive association between offline indirect internal communications to offline direct internal communications and successfully managing projects	Supported
H2a	There is a significant positive relationship between online direct internal communications and successfully managing projects	Supported
H2b	There is a significant positive relationship between online indirect internal communications and successfully managing projects	Supported
H2c	There is a significant positive association between online indirect internal communications to online direct internal communications and successfully managing projects	Supported
H3	There is a significant positive association between offline direct internal communications to online direct internal	Supported

	communications and successfully managing projects	
H4	There is a significant positive association between offline indirect internal communications to online indirect internal communications and successfully managing projects	Supported
H5	There is a significant positive association between offline direct internal communications to online indirect internal communications and successfully managing projects	Supported
H6	There is a significant positive association between offline indirect internal communications to online direct internal communications and successfully managing projects	Supported

5.2 Discussion on Major Findings

This research study seeks to advance the comprehension of the impact of internal communication utilizing technology, such as email, electronic social media on employee in successfully managing projects. Research study drew from informal organization hypothesis and particularly inspected how internal communication system links, conceptualized as direct and indirect links, in online and offline workplace internal communication systems affect organizational success in managing projects. The impact of internal communication utilizing technology is shown by isolating an employee's workplace communication system into offline and online networks that react to recommendations in earlier research that such a refinement might be of hypothetical and viable significance (Butler, 2001; Cummings, Butler, & Kraut, 2002; Koh, Kim, Butler, & Bock, 2007; Wellman, Haase, Witte, & Hampton, 2001). Research study found that online direct, online indirect, and offline direct links were essentially identified with organizational performance. It is vital to note that recognizing between network links in online and offline networks clarified more change in organizational performance contrasted with a unitary conceptualization of system links, in this manner showing that a nuanced conceptualization of system links (e.g. recognizing between online and offline systems) is superior to the conventional, unitary

conceptualization of system links. Research study additionally discovered backing for four of the six proposed interaction impacts, in this manner underscoring the significance of complementarity over the distinctive sorts of system links in anticipating organizational success in managing projects.

5.3 Implications of the Study

This work adds to research study in few ways. To start this, this work contributes to the assemblage of learning identified with internal communication using technology in organizational success (DeLone & McLean, 1992; DeLone & McLean, 2003; Rai, Lang, & Welker, Assessing the Validity of IS Success Models: An Empirical Test and Theoretical Analysis, 2002). A lot of this work has concentrated on task-level performance (Hong, Thong, & Tam, 2004) or individual job satisfaction (Joshi & Rai, 2000) although individual-level net advantages have been studied in previous research. The research study analyses the effects of internal communication utilizing technology on organizational performance and accordingly extends the comprehension of organizational success in managing projects. This reacts to proceeding calls in much earlier research study to expand the nomological network beyond the techno-driven results ordinarily examined in internal communication research (Thong, 1999; Venkatesh, Morris, Davis, & Davis, 2003; Venkatesh, Thong, & Xin, 2012). In particular, researcher utilized social network hypothesis to advance the comprehension of the effect of information and communication technologies on job performance in an organization. The incorporation of social network hypothesis helps better comprehend the effects of technology on organizational performance. Social networks act as conductors for asset trade such that the more system links employees have, the more probably they can influence information and communication technologies to improve organizational performance. The research study opens the black box of comprehension the related part of social elements and innovation elements in influencing organizational performance by incorporating social network hypothesis into internal communication research. How the exchange of innovation and social networks influences organizational performance have been capture through the research study. Future research should

further advance investigate the interdependent part of innovation and social elements by inspecting diverse social and innovation elements (e.g. the interdependent part of management support and technology use in influencing organizational performance) to progress both internal communication utilizing technology and management research.

The second implication of this work is to enhance our comprehension of ICT effects on performance related but slightly different from the first contribution. Information and communication technologies has mainly concentrated on comprehending performance differences between up close and personal and virtual communication in previous research study. Mostly in the context of teams performing certain types of tasks (Alge, Wiethoff, & Klein, 2003; Galegher, 1994; Straus & McGrath, 1994; Weisband, Schneider, & Connolly, 1995). Both the effectiveness of the communication channels has been compared along various dimensions of communication capabilities in particular (e.g. support of synchronicity) and different communication requirements (Dennis, Fuller, & Valacich, 2008). Moreover, researchers have concentrated on information and communication technology impacts at the full scale level (Devaraj & Kohli, 2003; Rai, Patnayakuni, & Seth, 2006; Straub, Rai, & Klein, 2004; Thong, Yap, & Raman, 1997; Wareham, Mathiassen, Rai, Straub, & Klein, 2005). This research study inspects the more extensive effects of ICTs on individual level job performance, supplementing earlier work that has analyzed performance at the team and organization levels. This research study outlines how ICTs influence employees' job performance, underscoring the significance of comprehension the crossing point of innovation and social networks that could be further investigated by future researchers. For instance, future research ought to look at how innovation can be intended to influence other social network characteristics, such as link quality and familiarity of others' areas of expertise. Management are liable to grow better methodologies identified with ICT speculation and usage at the point when organizations see how information and communication technologies influence job performance. By and large, looking at job performance enhances the comprehension of the downstream effects of ICTs, which is of awesome worth to both researchers and practitioners.

Third, this research brings experiences from complementarity hypothesis to amplify the comprehension of social network hypothesis in clarifying job performance. It did not recognize over the expansive sort of media and subsequent sorts of communication systems (online and offline), although earlier research found a relationship between the degree to which an individual is associated with others in a system and job performance (Cross & Cummings, 2004; Sparrowe, Liden, & Kraimer, 2001). This research study clarifies how individuals' diverse online and offline system links can be seen as integral assets that influence job performance drawing on complementarity hypothesis and adjusting the same to comprehend an individual-level phenomenon. The thought of recognizing between direct and indirect links as well as online and offline systems can be connected to pick up a superior comprehension of other essential organizational behaviours. The complementary part of direct and indirect links and online and offline systems proposes future research ought to conceptualize their independent and interdependent effects in understanding other organizational behaviours, for example, employee work fulfilment, organizational responsibility, information sharing, and socialization. For instance, it might be that having a bigger number of offline direct links would make employees more fulfilled with their jobs than having a substantial number of offline indirect links because relevant data, such as feelings, can be better transferred via up close and personal meetings and increasing sufficient passionate and social backing is prone to make employees more fulfilled with their works.

Lastly, the current research study gives a nuanced conceptualization of systems to pick up a superior comprehension of system phenomena. This research study distinguishes and underscores the theoretical contrasts in between direct and indirect links in online and offline work environment internal communication systems. A rich comprehension of the theoretical contrasts in between direct and indirect links in online and offline internal communication systems were of the utmost importance to seeing how they are identified with employment performance through various instruments that assume an imperative part in influencing an individual's ability to get the assets in online and offline work

environment internal communication systems. Recognizing distinctive sorts of system links likewise gives future researchers a chance to build up an inside and out comprehension of different phenomena. Future research may encourage investigate the interdependent part of the four system links by looking at their two-way or even four-way interactions to pick up a comprehension of the best system structure.

5.4 Limitations of the Study

First, in spite of the fact that this research study shows the significance of incorporating innovation into social networks research to comprehend organization performance, the comprehension of the effect of innovation can be refined. Researcher consider innovation all in without separating crosswise over different communication advancements that could, practically speaking, play out contrastingly as far as impacts on organization performance in this research study. Subsequently, future research ought to look at how the impacts of various advances (e.g. synchronous versus asynchronous) would fluctuate in order to encourage the comprehension of the effect of innovation (Dennis, Fuller, & Valacich, 2008) on organization performance. Future research ought to likewise think organization performance in times of organizational change as a result of innovation usage, for instance, learning administration framework implementation. As a case, researcher can apply the system paradigm (Borgatti & Foster, 2003; Lin, 2001) to see how social networks influence knowledge management system use and ensuing work outcomes, such as organization performance and employment fulfilment. Such an understanding utilizing a social network lens would be vital commitment to the information system, hierarchical change, and social networks literatures. With respect to offline internal communication, researcher just consider up close and personal communication and avoid telephone communication, which has now and then been thought to be much the same as offline internal communication (Wellman, Haase, Witte, & Hampton, 2001). Researcher preluded it since it is likewise noted to be not quite the same as face-to-face internal communication as far as capacities of transmitting various signs and supporting individual focus (Dennis, Fuller, & Valacich, 2008). It is likewise

conceivable that telephone communication could be online internal communication since it is technology-mediated. Consequently, there is some absence of clarity regards to how to sort telephone communication. Notwithstanding, telephone communication is critical and researcher recognize this impediment and call for future work to explore this. One way to deal with this impediment will be to attract on systems identified to communication media (Dennis, Fuller, & Valacich, 2008; Maruping & Agarwal, 2004) to think about the effects of various sorts of systems in light of various media.

Second, researcher just inspected one auxiliary property of the system (direct and indirect links) on organization performance. There are other basic properties, for example, structural holes and network imperatives that could influence organization performance. Similarly, researcher just examined employees' communication systems. Individual friendship systems are different sorts of frameworks that could impact organizational performance. A friendship network shows shared preferring or comparability of states of mind between people (Mehra, Kilduff, & Brass, 2001). For instance, if two employees are dear companion, it is likely that they can offer auspicious help to each other. A mindfulness system shows the degree to which people know whom to search out for data or mastery significant to their undertakings (Cross & Cummings, 2004). Not knowing other employees' aptitude may bring about getting to data that is not helpful. Accordingly, future studies ought to incorporate different sorts of systems and analyze their differential impacts on organization performance.

Lastly, future research ought to apply a more complex methodology (not just communication frequency) to gather system information. For instance, future research can look at different sorts of communication, for example, work-related guidance or social backing. Moreover, future research ought to gather information about how employees influence diverse systems, particularly for the individuals who are focal in both online and offline systems. Do they make complementary use of both systems or regard both systems as only choice for communication? This will bring about a wealthier comprehension of the complementary or substitutive part of both systems. In spite of the fact that the research study found

a significant correlation between network links and organization performance, it is maybe untimely to close a causal relationship between system links, particularly the nuanced conceptualization, and organization performance on the grounds that the relationship is not as a matter of course unidirectional. Future research ought to utilize a longitudinal methodology or a qualitative approach to deal with addition insights about the causal structure identified with system links and organization performance.

5.5 Recommendations for Further Research

As organizations depend increasingly on information and communication technologies for distributed job scope, they should influence information and communication technologies viably and expand the advantages it can bring, for example, upgrading organization performance. In spite of the fact that organizations think that it is hard to genuinely profit from information and communication technologies, restricted research has look to understand this riddle. The research study gives clarifications in regards to how the effect of information and communication technologies on organization performance is exchanged by means of communication systems in that employees who have an extensive number of direct and indirect contacts in both online and offline systems are more fit for securing and utilizing valuable assets to improve their organization performance. In light of this understanding, organizations ought to consider the part of social networks in amplifying the advantages of information and communication technologies. At the point when employees build up their offline networks, they might need to grow their online systems also on the grounds that employees will most likely be unable to determine every one of the issues utilizing face-to-face meetings. Employees may change to online internal communication, a methodology that is unbounded by the temporal and spatial imperatives for this situation. At the point when connecting with others through online systems, employees will probably influence the advantages of data and communication technologies. Nonetheless, utilizing just online systems may not be adequate. In spite of the fact that utilizing online systems gives a considerable measure of advantages, for example, quick receipt of data and data trustworthiness,

it may not be sufficient for employees to comprehend complex learning that is liable to be exchanged by means of offline systems. Thusly, to genuinely understand the advantages of data and communication technologies, employees need to create both online and offline systems. The recommendation for organizations is that they ought to urge employees to make more connections in order to influence the advantages of data and communication technologies. Organizations ought to advance the creation and sustenance of both online and offline work environment internal communication systems by empowering employees with no or a little number of links to communicate with different employees through socialization exercises. This supplements earlier social networks research look into that has made valuable recommendations for organizations to upgrade work results (e.g. nurturing value-creating interactions or engaging employees through community efforts) (Cross, Laseter, Parker, & Velasquez, 2006), on the grounds that the research study helps organizations comprehend the contrasts between various sorts of systems (e.g. online and offline systems) and the qualities and shortcomings of various sorts of system links as far as getting assets. Likewise, managers ought to take care of employees with few or no links on the grounds that these employees will be unable to exploit data and communication technologies to get data and assets. Such employees ought to be especially focused to get more formal support, for example, customized training, that is intended to upgrade their organization performance.

The research additionally illuminates employees endeavouring to improve their organization performance. The research study shows that it is essential that employees are around associated both in the online and offline work environment internal communication systems in the light of the fact that these systems give channels to them to get important assets. All the more imperatively, online and offline systems give channels to them to get to assets that are complementary. Utilizing the complementary assets will accomplish the best performance. On the off chance organizations can prepare or instruct employees to ponder their system structures (e.g. how well they are associated in online and offline systems and the advantages and limitations of their system links), employees will probably change their system structures in a way that will help them better influence assets.

Understanding the distinctive components fundamental the effects of the four types of system links would help organizations instruct their employees to grow more viable methodologies to upgrade organization performance. For instance, employees can build the quantity of offline direct links by growing their direct offline contacts in the light of the fact that the expanded direct links are prone to facilitate the exchange of complex information. In like manner, employees can create communication structures (e.g. utilize of online direct or indirect links) that lessen an ideal opportunity to get help or criticism when required. A powerful system structure not just permits individuals to access helpful assets, additionally makes them get such assets immediately that can together contribute positively to organization performance.

As a developing organizational structure to diminish costs and accomplish upper hand, virtual teams, distributed teams, and working from home have turned out to be progressively mainstream. These organizational structures seriously utilize advancements to perform one or more organizational undertakings. In any case, developing evidence demonstrates that meeting strategic or operational goals in virtual situations is tremendously challenging. Earlier research has demonstrated the insufficiencies connected with online internal communication and the significance of face-to-face meetings for virtual employees to work effectively (Hill, Bartol, Tesluk, & Langa, 2009; Maznevski & Chudoba, 2000). The research study gives further experiences from the social network point of view to help such workers too. We not just recognize the significance of both online and offline internal communication media, additionally outline the qualities and limitations of various sorts of online and offline system links, along these lines picking up a superior comprehension of how to influence diverse sorts of system links to improve performance. For instance, when employees need to exchange complex information, it could be more viable on the off chance that they influence their online direct links since employees communicating straightforwardly for the most part, have a high level of homophily and more grounded connections that facilitate the exchange of complex learning. At the point when employees chip away at activities that require innovation, it could be more successful on the off chance

that they influence their online indirect links that could help them access differing and new data, which is critical to development (Ahuja, 2000).

5.6 Conclusion

In conclusion, the research study contributes to research that seeks to comprehend the impact of technology on employees' organizational performance in managing projects. Researcher builds up a superior comprehension on the part of technology in describing organization performance by differentiating between online and offline work environment internal communication systems drawing from social network hypothesis and complementarity hypothesis. Specifically, this research study conceptualizes online and offline work environment internal communication system links as resources and theorizes about the complementary impact of these resources on organization performance. Researcher thus enhance the comprehension of how the system mechanisms (e.g. accessibility to and control over resources) influence organization performance. In addition, the research study propels social networks research by bringing experiences from complementarity hypothesis, and building up a more nuanced conceptualization of internal communication system links and their independent and interdependent impacts on organizational performance.

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APPENDIX A

SURVEY QUESTIONNAIRE

UNIVERSITI TUNKU ABDUL RAHMAN (UTAR)
FACULTY OF ACCOUNTANCY AND MANAGEMENT (FAM)
MASTER OF BUSINESS ADMINISTRATION

Firstly, I would like to thank you for giving me some of your precious time to fill up this questionnaire and sorry for the inconveniences caused. I am a postgraduate student from Universiti Tunku Abdul Rahman (UTAR) and currently conducting a research study for my MBA Degree programme. I would like to invite you to participate in this online survey, which aimed to find out the **Impact of Internal Communications for Organizational Success in Managing Projects**.

This questionnaire consists of two parts where Section A is to measure the impact of internal communications for organizational success in managing projects and Section B is demographic information that is carried out to obtain your personal information. I will greatly appreciate your cooperation in completing this questionnaire. Please be assured that all information provided in this survey will be used solely for the research study, and will be strictly kept PRIVATE AND

CONFIDENTIAL. Results will be reported in general terms, with no specific individuals identified in the report. Your participation is very important in this study. Once again, I would like to thank you for your cooperation in providing us valuable information. Thank you.

Please rate your level of agreement with the following statements:

		Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
1.	Most of the information I receive on a daily basis in managing projects comes from my superior.					
2.	In this organization, my ideas are passed on through superior before reaching top management.					
3.	Most of the information I receive on a daily basis in managing projects come from my colleagues/peers.					
4.	I feel comfortable sharing ideas directly with members of top management.					
5.	I feel comfortable sharing ideas with my superior.					
6.	In this organisation, the					

	lines of communication are "open" all the way to top management.					
7.	I receive most of the information I need through informal channels.					
8.	The information that is shared by employees in other project teams is often biased and reflects their own personal interests.					
9.	Most of the group meetings I attend are informative and worthwhile.					
10.	Most of the information I receive from my manager/superior is detailed and accurate.					
11.	Most of the information I receive from my colleagues/peers is detailed and accurate.					
12.	Communication from other project teams is typically detailed and accurate.					
13.	Most of the information passed down from top-management is detailed					

	and accurate.					

Using the following scale, please indicate how effective the following methods are for communicating among project team members in managing projects:

		Very Ineffective	Somewhat Ineffective	Neither Effective nor Ineffective	Effective	Extremely Effective
14.	E-mail					
15.	Face-to-face meeting/discussion					
16.	General meetings					
17.	Memos/faxes/letters					
18.	Manager/Superior					
19.	Other electronic communication (SMS/WhatsApp, etc.)					
20.	Telephone calls					
21.	Colleagues/Peers					

Please indicate how frequently you use the following methods of internal communications on a daily basis in managing projects:

		Never	Seldom	Sometimes	Very Often	Always
22.	Face-to-face meeting/discussion					
23.	Electronic communications (E-mail, SMS, WhatsApp, etc.)					
24.	Written communication (Memo, Fax, Letter, etc.)					
25.	Telephone calls					

Please indicate how important the following methods of internal communication are in helping you effectively managing your projects:

		Not important	Slightly important	Somewhat important	Important	Critical
26.	Face-to-face meeting/discussion					
27.	Electronic communication					
28.	Written communications					
29.	Telephone calls					

APPENDIX B

COEFFICIENTS (IV1 TO IV4 AND DV)

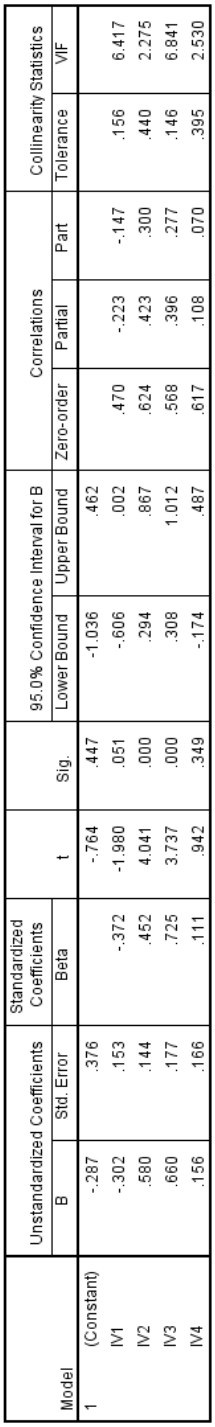
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-.287	.376		-.764	.447	-1.036	.462					
	IV1	-.302	.153	-.372	-1.980	.051	-.606	.002	.470	-.223	-.147	.156	6.417
	IV2	.580	.144	.452	4.041	.000	.294	.867	.624	.423	.300	.440	2.275
	IV3	.660	.177	.725	3.737	.000	.308	1.012	.568	.396	.277	.146	6.841
	IV4	.156	.166	.111	.942	.349	-.174	.487	.617	.108	.070	.395	2.530

a. Dependent Variable: DV

APPENDIX C

COEFFICIENTS



Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
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	IV4	.156	.166	.111	.942	.349	-.174	.487	.617	.108	.070	.395	2.530

a. Dependent Variable: DV