Communication barriers limiting successful project execution during construction at a selected site in the Cape Metropolis

By

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DECLARATION

I, Peter Siphamandla Dingiswayo, declare that the subject matter of this dissertation/thesis represent my own work, and that the dissertation has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

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Signed **Date**

ABSTRACT

There is increasing evidence that communication practices can play a significant role in accomplishing high quality construction projects. Communication has been precisely singled out as a foremost construction project management practice that can have an impact on successfully executing a project execution. Most companies that are involved in construction projects are failing to complete their projects within the given timeline, budget and scope due to poor communication and communication barriers, Kendall (2021:1). Furthermore, the study sought to explore the impact of communication barriers in delivering successful projects as a tool for effective project execution at selected construction sites in Cape Town, South Africa. Additionally, the general objective was to explore communication barriers that could lead to the successful completion of construction projects in Cape Town. The study used simple random sampling technique to recruit a total of 90 employees in a selected company in Cape Town. The results of the study have shown that the relationship between construction project success and communication barriers was significant, over 65% of the respondents advised. The study recommends that construction project companies should have strong tools aimed at addressing communication barriers amongst the employees as these barriers causes harm to the business and overall project delivery due to miscommunication and misunderstanding of one another.

Keywords: communication barriers, construction, project execution

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I aspire to thank and acknowledge the Almighty God for being with me throughout the course. A special thanks to my supervisor Dr. Jowah without him I would've never finished this paper. Thank you to my classmates, and all those who assisted me in getting this completed.

A special thanks to my family and those who came before me – oHlongwane, Ngwane, Nduku Zinobulongwe, oSangweni, oGoli – nangomso zinyanya zakowethu.

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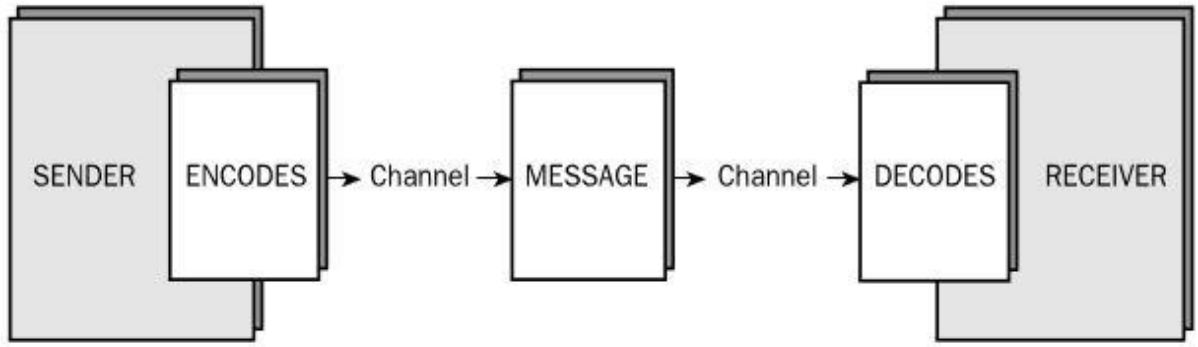
CHAPTER 1: INTRODUCTION TO THE STUDY

1.1. Introduction

Good and clear communication between project stakeholders is critical for the completion of a project. Poor communication amongst the project team members is one of the most common project risks and leading factors of a project failure (Mahboudi, Farrokhi & Ansarin, 2017:30-42). Communication in construction projects is quite a complex and wide phenomenon spanning numerous disciplinary fields, numerous organizational levels, several perceptions, and understandings. Twenge, (2013:75-86) maintains that project team members must work together, in order to gather substantial amounts of information to achieve the project milestones as well as its goals. In this way the project manager (PM) and sub-contractors can be able to form a crucial relationship in construction projects (Turner & Müller, 2013:96-110). Additionally, the Allocation of tasks creates a principal-agent relationship amongst the project manager and the contractor, where the principal (project manager) relies on the agent (contractors) to undertake the task on the project manager's behalf.

The principal-agent relationship within the project is engagement and communication, it is very important therefore Project Management Practitioners refer it to as the 'lifeblood' of a project, Rajkumar, S. (2010). Project team members and other relevant stakeholders need to join forces, gather, share, assimilate information and data to reach and optimize project goals. It is a necessity to realize the processes and procedures of communication amongst the organization. At its lower level the communiqué entails the following 3 mechanisms: a sender referred to as a transmitter; an intermediate referred to as a transmission channel; and a receiver which is the audience, Rajkumar, S. (2010). The communicated message moves from the person who is sending the message, through a medium. A medium can be unwritten or written. This medium then transfer the message to the audience/receiver. This model is shown below:



The Communication Model

Figure 1.The Communication Model

Source: (Pitts, n.d.)

1.2. Problem statement

The problem is the poor delivery of construction projects due to deficient and unaddressed communication barriers between the project management team at all levels. This issue is prevalent in Africa and South Africa. There is a well written study in Nigeria, AH Abdullahi, RA Jimoh, LO Oyewobi, RB Isa, (2016:7-25). Communication barriers are a major concern in construction projects because team members have different levels of literacy. I will be looking further into this issue on this study.

There is a strong correlation between the delay in completion and the cost overrun incurred in construction projects, which is due to poor coordination as a result of incomplete information. Therefore, effective, and clear communication that takes into consideration the present communication difficulties, is required to ensure the project's success and collaboration amongst interconnected project teams within the project team, Vaardini, Sindhu & Karthiyayini, & Ezhilmathi, (2016:356-359). There is a need to investigate, the nature, magnitude, causes, effects and corrective measures to poor handling of communication barriers on project delivery. Addressing project communication barriers has a positive net effect on the project and the business.

1.3. Background

Since the mid-1940s, writing on communication in the construction industry has essentially focused on the conditions in the United Kingdom (Gorse & Emmitt, 2015:92-106). Several issues concerning communication have been reported, with an emphasis on internal team communication, suppliers and contractor communication, external communication between project manager and stakeholders and others involved in the construction project develop project management process. According to Dainty, Moore, & Murray (2017:76-96), one of the fundamental reasons behind carrying out inadequate projects is unproductive communication practices amongst different teams within a construction project atmosphere. The researchers added that the temporary and interdisciplinary nature of the project team develops many problems in construction projects during the implementation phase.

Good quality communication in a construction project or even in all project portfolios is important to ensure efficiency and effectiveness of the programme develop project management process. Enhancing communication between the project team, suppliers and contractors will reduce the probability of project failure in so many ways such as miscommunication, incorrect deliverables etc. Open and clear communication amongst all levels within the construction project team results in innovation productivity and better technical solutions during project implementation stage (Olson, 2015:89-102).

Furthermore, the communication process at the beginning of a project amongst stakeholders and project team members carries a massive positive energy and influence on the project performance and the quality of work. Enhancing communication during briefing can lead to better decision making. For example, improvement in communication during briefing stage can positively influence the speed of moving towards a resolution and supply advance methods of examining the requirements at early stage. Over the years, researchers have determined and showed that enhancing communication in construction project development has a positive influence towards the project outcomes.

1.4. Rationale and Significance of the Study

The construction industry is growing rapidly while some of its organizations are closing due to various reasons such as fraud, misusing of funds, unsuccessful projects etc. This study intends on revealing the impact of communication barriers in those unsuccessful projects. This study will also give valuable insights as to how communication barriers should be addressed in the construction sector to ensure successful projects are delivered.

The study had the following objectives – to:

a) Analyse and identify how communication barriers affect construction project in this selected company.
b) Identify the critical nature of communication processes in the workplace.
c) Identify how communication is treated in the construction industry; and
d) Develop a plan to enable effective communication and team performance.

1.4.1. Aim of the Study

The aim of the study was to investigate and understand the role played by communication barriers in the successful execution of projects. Additionally, Construction projects are characterized by having different aspects that work independent of each other for instance civils, bricklaying, plastering, plumbing and or electricals. There is a need to communicate these different operations to integrate the project and come up with one deliverable. The aim therefore is to establish the role played by communication barriers and how this can be structured and addressed to promote efficiency and project execution success.

1.4.2 **Research Questions**

Construction projects tend to fail when communication barriers are not addressed properly. The Research Questions for the study were as follows:

a) What are the most common communication barriers in the selected construction company?
b) Do/how can communication barriers hinder a project from being successfully completed?

c) How can project managers address and ensure that these communication barriers are not felt?

1.5. Literature

According to Keyton (2011:105-122) communication can be explained as the method of transmitting information and shared understanding from one person to the next. The word “communication” is derived from the words of Latin “communis”, which basically says “common”.

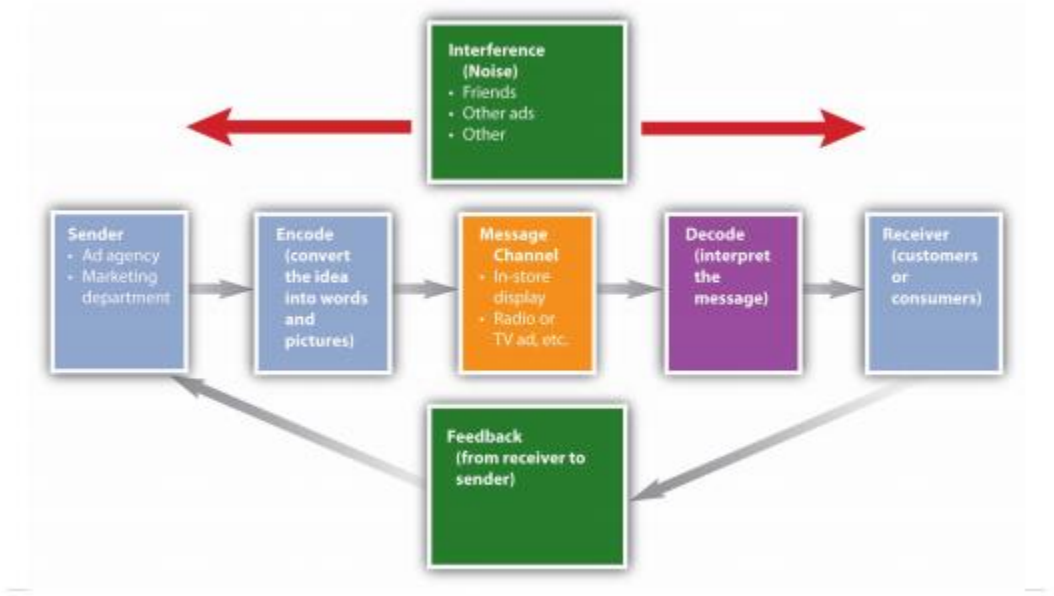


Figure 2.Sender - Median - Receiver

Source: Tanner (2007:372)

Twenge (2010:146-157) proposes that two common parts in each communication discussion is the dispatcher and the audience. The dispatcher starts the communication. The communique is the result of the encoding, which can be in a form of vocal, oral, written language or non-verbal. The communique is delivered over a medium also called a channel. Furthermore, a channel is the carrier of the whole communication. The channel can be either a facial, telephonic, electronic mail, conversation, or a written statement. Moreover, the receiver interprets the encoded message into a meaningful information. However, noise can interrupt a message from being heard or understood clearly. Different insights of the message, interruptions, emotions, language barriers, and attitudes are perfect examples of noise. Additionally, feedback is a process in which the receiver decides to respond to

the dispatcher's/sender's message and returns it back to the encoder. Feedback permits the sender to distinguish whether the message has been received and understood by the receiver.

Although a number of studies in the construction industry have highlighted communication elements, there is limited literature on how well communicated projects are delivered. This is one of the reasons the researcher chose a successful construction company to study and compare. The vast majority of literature discusses improving communication between teams and stakeholders, without examining its impact on project delivery Twenge (2010). It is in this regard where the current study aims to address the existing gap in the literature by exploring the impact of communication barriers.

1.6. Communication barriers:

Below is a list of the communication problems / challenges in the construction industry, (Jones, 2021):

a) Communication medium used
b) Inability to listen to others
c) Lack of transparency and trust
d) Gender differences
e) Conflicts in the workplace
f) Cultural differences and language
g) Dissatisfaction or disinterest with one's job
h) Communication problems in construction industry

Higgin and Jessop (2010:166-172) states that there are a number of communication problems that exist within the construction industry. A majority of stakeholders, especially clients, lack a comprehensive understanding of the various technical and specialized services available to them. The communication problems mentioned by Oberlender (2015:186-193) are defined as misdirection and the exchange of uncertain information, including design drawings, reports, contracts, and work instructions. When communication is improved at the early stages of execution, clients are more likely to be happy if design principles are recognized.

It is common for all parties involved in a project to meet each other just before it begins. It is not easy to build trust with them. Individuals rely on face-to-face communication to communicate consistently and to impart knowledge. According to Müller, R. and Rodney Turner, J. (2010:437-448), information on project objectives, client requirements, risk, limitations, requirements, priorities, and more is likely to be particularly valuable in increasing trust, reliability, and understanding between the parties involved at the start of a project. Furthermore, Jarvenpaa and Leidner (2013:68-79) propose that communication is more than data transmission; it also allows project teams in organizations to express their worries and concerns in a more transparent way. It is believed by Pietroforte (2017:186-) that individuals' relationships can be strengthened when they are willing to learn from others. A project management team's willingness to overcome communication barriers demonstrates their readiness and good faith.

1.6.1. The Nature of communication

Organizations utilize a variety of communication strategies ranging in formality and they install different ways for activities with differing degrees of uncertainty Obuks Augustine Ejohwomu, Olalekan Shamsideen Oshodi, Ka Chi Lam (2017:18-26). Matching the informality of the approaches with the hesitancy of the task, on the other hand, leads to better organizational outcomes. Obuks Augustine Ejohwomu, Olalekan Shamsideen Oshodi, Ka Chi Lam (2017:26-36) further explains that coordination of activity is a production-oriented task that has been researched in depth at both the organizational and small group levels. Coordination is the process of guiding people's activities toward achieving mutually agreed-upon objectives. The ability to participate in or link together different components of an organization in order to complete a common set of tasks. As individuals within an organization have only partially overlapping aims, explicit coordination is required. As a result, one of the goals of coordination is to ensure that all stakeholders are on the same page. However, if these objectives were met and their objectives were the same, the input-output relationships among persons necessitate that their activities be efficiently sequenced and connected. Adequate communication within project management is about being there for everyone, being in touch with the real challenges of the project while assisting, guiding, and understanding the real issues within the team. Issues such as conflicts, sponsors who the team delivers the project to. Being present,

visible, and engaging with everyone is critical and super important – all the time it must be a consistent routine that there are meetings for the whole project team. Communication is not only about speaking to and hearing from people, but also about understanding what is being said and what is needed from you. It is about being understood Fisher (2011:65-79).

What language is to be used, how the message will be conveyed with reference to tone, emotions and body language all play a vital role in the communication process. If the above-mentioned aspects are used incorrectly, the message can either create confusion or misunderstanding amongst the project team. A successful project manager must always maximize the effectiveness and efficiency of communication within the project team by being prepared to lead by example. A big part of being a leader is to be always present and be prepared to communicate with all stakeholders at their respective levels. And to consciously listen to the feedback and be open to advice (Ajzen, 2015:131-137)

Projects often ‘fail’ because stakeholders including the project managers simply fail to articulate a clear vision and the project’s success criteria in terms of the deliverables wanted. This vision must be successfully communicated and understood by all parties involved in the project. So that everyone has a common goal in mind and know where the company is heading. The whole team should be able to picture the result, to work towards this common goal that everyone wants to achieve. Consistent reporting of the project’s progress and status is crucial to the success of the project because by doing so all relevant stakeholders are kept in the loop, they know what to expect as they have seen the trends. Lynn (2015:184-198) further says communicating this to all stakeholders in a clear and precise manner is very crucial, so that all stakeholders understand what the key messages are. Charts, diagrams, graphs, and tables should be used to give a clear indication regarding the state and status of the project, these tools are essential in communicating with stakeholders such as the Board of Directors as they tend to want figures and illustrations. There is a famous saying that says “a picture is worth a thousand words” this is indeed true and perfectly suitable for communicating project progress Lynn (2015:184-198).

For effective and efficient project management communication you must first consider the needs of the audience you are intending to communicate with, think about the kind of audience and anticipate what they need to understand then deliver the message. Excellent presentation skills are essential for communicating project progress and status. The audience needs to be engaged during these presentations to ensure that the audience cooperates the key messages have been received and understood Alberti and Emmons (2017:40-65).

1.6.1.1. Informal vs formal communication

informal or casual communication is a lightly defined concept and is often perceived as the residual category in organizational theory (Turkulainen V, Aaltonen K, Lohikoski P, 2015:74-91). Casual communication is the one that when rules and hierarchies are removed, mechanisms of managing occurrences remain. Additionally casual communication is the type that is rich, dynamic, collaborative, and spontaneous feedback-based coordination over organismic communication grids. The lack of pre-specification is at the heart of these impromptu communication systems. Information is not pre-packaged and then delivered to a recipient intact, nor are action plans pre-developed and then carried out without modification. Instead, information is generally conveyed interactively through meetings, conversations, and action plans that are carried out in the context of the situations in which they must be implemented.

What language is to be used, how the message will be conveyed with reverence to the tone, emotions and also the body language all plays a significant part in the communication process. If the above-mentioned aspects are used incorrectly, the message can either create confusion or misunderstanding amongst the project team. According to (Ajzen, 2015:101-110) a successful project manager must always make the best use of the effectiveness and efficiency of communication within the project team members by being ready to lead by example. And to consciously listen to the feedback and be open to advice

1.6.2. Importance of communication in construction projects

a) Communication helps to build and maintain strong relationships on construction projects. Relationships are the lifeblood of any group action. People take

decisions based on how good the relationship is and how trustworthy the other party is. When the project team communicates openly, transparently and do follow ups on commitments to the company's clients, it helps the team to build trust and form lasting relationships, Khalfan, M.M.A., McDermott, P. and Swan, W. (2007: 385-391).

b) Communication ensures idea sharing and innovation amongst the project team. The individual team members come from many different backgrounds and experiences on construction projects. The project teams have many years of combined project experience. If the team is not applying their past expertise, it may not matter as much to look for new ideas and innovative ideas. If they are talking about the different ways to approach situations and challenges, it will push the team to bring in creative ideas to solve current issues.

c) Communication helps in building momentum, confidence and strengthens teams. We have seen it before — the whole is better than the sum of its parts. Strong teams are the direct result of a clear, efficient, and effective communication. An effective team is actively anticipating challenges and creating creative solutions by closely communicating with one another. When this works, they gain confidence and trust in their abilities going forward, knowing they can reproduce the same success as a communicative team, Khalfan, M.M.A., McDermott, P. and Swan, W. (2007: 385-391.

d) Communication improves management of the team and optimizes its productivity. Effective managers can clearly articulate the vision, strategy, and intent of the project. They lend ideas, potential solutions and help remove barriers and obstructions faced by the construction team. When managers communicate effectively, team members recognize that and thus learn from it, or it rubs off the team. Management is responsible for setting the bar for effective communication on projects, and in return it drives results.

e) Communication creates feedback loops. Great leaders let their staff know how they are preforming and what areas to develop and improve on. When we can communicate the peaks and valleys of an employee's performance in a way that is constructive and emphasizes growth, it builds the individual capacity and motivates the individual to work even better.

f) Communication delivers results. The more communication is transparent among everyone the more effective the team gets, and better results will come. Projects

teams with high levels of communication can deliver projects on time or ahead of schedule, at or under budget and with exceptional safety records. Bottom line, communication delivers the results that everyone is looking to achieve on projects that are within the construction field. The more we talk and discuss issues and challenges clearly, the greater probability that we will work through them and find solutions. Therefore, the sooner the challenges are addressed and discussed, the sooner they can be put behind us and fixed correctly so that we can move forward as a team (Lunenburg, 2010:1-10). Everyone wants to build relationships and deliver projects successfully. Through effective and efficient communication, that can be achieved.

Projects Communication Channels

Shahatit (2016:10-25), advised that during the course of a project, communication occurs in a variety of ways, depending on who is communicating. From your own party and the customer's party, there is upward communication to management. Customers and project teams engage in lateral communication. Further communication, either downward communication (from exceptional to subordinate), horizontal communication (between co-workers), or upward communication, requires the installation of machinery (from sub-ordinates to higher). According to Mehra (2009:366-375), communication will always entail more than one individual.

1.7. Definition of Key concepts

a) *Communication* refers to speaking, writing, or utilizing another form of media to convey a message and exchange information (ref)
b) *Communication barriers* can be defined as anything that prevents/interrupts us from receiving and understanding the messages that other people use to convey their information, ideas, and thoughts.
c) *Construction industry* - The branch of manufacture and trade based on the building, maintaining, and repairing structures. This includes drilling and solid mineral exploration

Research methodologies:

This is an approach to conduct the research, this approach is based on assumptions of how things work and how things will unfold, this is all based on assumptions. The greatest used paradigms are positivism which relies on the science experiments and uses quantitative methods. Constructivism is based on understanding, seeing things, and can be analysed using qualitative methods (Liamputtong, 2015:10-15)

For the current study, constructivism research methodology paradigm will be adopted. Constructivism is ‘an approach to learning that holds that people actively construct or make their own knowledge and that reality is determined by the experiences of the learner’ (Elliott et al., 2000: 256).

Research Approach

The current study conducted predominantly uses quantitative research design with an element of qualitative method as the researcher has open ended questions on the questionnaire. Choosing these two methods allowed me to gather as much information as I can, as this expanded the research and not limited it to one method. This ultimately gave the researcher more accurate findings and reliable data.

Research Design

Research design is an approach on how the researcher will answer the research question and the research problem must be thoroughly addressed to answer all the necessary questions. According to McNichols, (2000:315-345) research design is a set of methods and procedures utilized by the researcher in gathering and analysing measures of variables stated in a research problem. Through the research design, the researcher will outline sample selection, sample size, data collection instrument, procedures, and ethical requirements.

This study adopted case study research. This method allowed the researcher to use a questionnaire as a research methodology this includes open ended questions as well to gather more information.

Research Methods/Processes

Population Target population:

The targeted population for this research will be employees of one of the upcoming companies that is doing very well in construction, maintenance, and fencing. The respondents were subordinates in the construction section reporting to the manager or supervisor at the construction sites. This will include among others the different work breakdown structures, like bricklaying, civils, carpentry, flooring, electrical, etc.

Sample method/technique and sample size

Non-probability sampling method is the sampling method where the researcher selects the sample without the calculation of odds. The researcher will use this method because it will be more convenient for him as it requires no pre-planning for the selection of respondents. Getting responses for non-probability sampling is much faster and will also be cheaper for the researcher Uprichard (2013:1-11).

Probability sampling refers to the selection of a sample from a population, when this selection is based on the principle of randomization, that is, random. Probability sampling is more complicated, more time-consuming and usually more costly than non-probability sampling, Acharya, A.S., Prakash, A., Saxena, P. and Nigam, A., (2013:330-333).

Purposive Sampling Method: this is the sampling method where the researcher relies on their own judgement when choosing respondents for the study given than the researcher has prior knowledge about their study so that the eligible respondents can be chosen. This sampling method will also allow the researcher to save money and time when gathering data (Jackqueline & Erniel 2006:277-284).

Sample size: Sample size is going to consist of employees of the chosen company only. The total population at the sites is 400 outside of the management and heads of WBS units, these are from different units under the same project manager. The researcher is opting to use systematic random sampling starting with the 1st identified randomly and selecting every 4th individual. The researcher will include employees across all levels of position, so that they can get different perspectives and opinions. Project managers, Managing director, supervisors, and general workers.

Data collection instruments

Data are facts and statistics collected by the researchers for purposes of references or analysis after the study has been conducted (Zaza, et al. 2000:44-74). According to (Rabianski 2003:42-43) there are two sources called the primary and secondary data sources used to obtain data. This study will adopt both primary and secondary data sources.

Primary data source: this is in an exclusive research data that originates from researcher. who is thus the first researcher to discover and compile that data. This data directly focuses about the research. As the data is collected for the first time, it is time consuming to do primary data collection and costly. A structured questionnaire was developed for purposes of primary data collection. Questions that will form part of the questionnaire will be developed by the researcher in such a way that they address the problem at hand. According to (Nava, et al. 2009:2194-2199).

Forum (2016) maintains search of approved sources and information is referred to as a secondary data. It entails locating appropriate paper and electronic sources for the title and methodology, as well as creating a clear search plan that includes a justified vocabulary that determines what will and will not be included in the search. It is the process of analysing, critiquing, and synthesizing existing knowledge that is pertinent to a research subject. This is the application or use of other people's work.

A structured questionnaire was used as the research instrument to collect the information and the questions on the questionnaire were developed from the most crucial questions regarding communication barriers vs projects success. A three (3) section instrument was used to collect data, this involves:

Appendix A – Biography - which sought toto identify the respondents.

Appendix B – Likert scale – primarily meant to assist in the measuring of the opinions and attitudes that determine the operational effectiveness. These will be ranked on a 1-5 scale with 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree.

Appendix C – Open ended questions; respondents were requested to fill in data in direct response to the specific issues to deal with questionnaires.

Data Validation

This is the process of cleaning the data to make it so that it can be more useful for the study will be conducted. Excel spreadsheet was adopted by the researcher in this study to data quality by cleaning it though the assistance of Cape Peninsula University of Technology (CPUT).

Data Coding

According to (Erick 2015) data coding is the process of interpreting the primary qualitative data obtained from the respondents to a more useful information for the study. Data coding may not give all the answers that the researcher is looking for, but it puts the information obtained in a way that it can be understood by the researcher.

Data analysis technique

Smit (2000:65-75) argues that this is the process of checking, cleaning, and transforming data in a way that will give a researcher more useful information for the study.

The questionnaires were brought together and the process of cleaning, and editing was conducted to help in assuring that correctly filled in questionnaires were used for analysis. The instrument / questions were coded, then captured on to an Excel Spread Sheet [ESS]. The data was converted into illustrations [graphs, tables, charts, histograms, polygons,] and any other ideal forms to enable easy comparison of the variables understudy.

Ethical consideration

a) Honesty and accurate results will be key by remaining neutral.
b) No minors will be made participants.
c) I will be objective in my findings I will be neutral.
d) Integrity is also part of my ethical values.

This study obtained ethical clearance from the Ethics Review Committee of the Faculty of Business and Management Sciences (reference number: 2021_FBMSREC 042. All legal Covid health protocols as stipulated by the government will be adhered to for all practical purposes. No identification is needed

for the respondents and therefore no names or any forms of self-identification will be allowed (spoilt questionnaire) on the instrument. The respondents are free to withdraw from the survey without providing reasons, this includes among others the right to omit any questions that may cause discomfort. Students participating in the study will be provided an informed consent form (Appendix B) at the beginning of the study. Participants will be fully briefed about the aims and purpose of study so that they may provide informed consent. Participants will be informed that their participation is voluntary and that they have a right to withdraw at any point during the study without any repercussions. They will also be informed that their information and responses will be kept confidential. The data obtained from the study will be stored on a laptop which will only be accessible to the researchers and will only be utilised for research purposes. When the survey is completed, participants will be given a debriefing.

1.7. Significance of the study

The construction industry is growing rapidly while some of its organizations are closing due to various reasons such as fraud, misusing of funds, unsuccessful projects etc. This study intends on revealing the impact of communication barriers in those unsuccessful projects. This study will also give valuable insights as to how communication barriers should be addressed in the construction sector to ensure successful projects are delivered. Secondly the significance of this study is to analyse, evaluate and understand the role communication barriers play in the execution of construction projects. In other words, the study's significance is to determine which communication barrier hinders the project's progress the most. We are aware that a number of factors can affect project completion factors such as time, budget, resources, skills, communication etc. Often projects fail because of poor communication however the poor communication is not detailed enough to find the core reason. The researcher determined that communication barriers contribute a huge percentage in this regard.

1.8. Summary of objective of proceeding chapters

Chapter 1: was critical in this study as it provided the introduction to the study and from the literature reviewed, the researcher was able to identify the research gap.

After the literature review was conducted, the researcher was able to construct the problem statement and the objectives of this specific study. The research questions were constructed including the research design and the research methodology. From the research methodology, the researcher was able to detail the targeted population, the sampling method, data collection, data analysis and how the findings will be reported.

Chapter 2: provided the literature review and focused on discussing communication in the construction sector and how it helps projects to be a success.

Chapter 3: on this chapter I provided more context and literature of communication within the construction sector and explained the different types of barriers associated. This also addressed how these barriers can be mitigated. Lastly this chapter assisted in understanding how much of a damage these can make on a project.

Chapter 4: presented the research design as well as the targeted population. The sampling methods, how the data was going to be collected and how the data was going to be analysed after collection were discussed.

Chapter 5: provided the collection of data, the interpretation of the data, and provided an extensive analysis of the of the data.

Chapter 6: is the last chapter of this study, and it summarises the key points, synthesises the findings and draws meaning to the findings. Conclusions and recommendations are discussed. This chapter further discusses how the research objectives and limitations were met in this study.

1.9. Conclusion

In this chapter, the research is introduced, and background of the research is provided. I have further provided a literature review on the existing research that is subject to the study, provides the problem statement, research objectives, research questions, research methodology and data collection instrument, method, and analysis.

CHAPTER 2: LITERATURE REVIEW ON COMMUNICATION BARRIERS, CONSTRUCTION PROJECTS, COMMUNICATION AND COMMUNICATION MANAGEMENT

2.1. Introduction

Organizations in modern time often realize their business goals and tasks using a project-based approach. Successful implementation/execution of projects is closely related to proper and effective project management. Within project management there are many different areas which need to be managed, among others: costs, time, human resources, risks and communication. While every area of project management is important for the overall success of the project, communication management seems to play exceptional role. It influences and penetrates all other project areas, and because it seems so obvious and easy, while actually it is very complicated and multi-faceted.

According to PMI's Pulse research, 55 percent of Project Managers agree that effective communication with all stakeholders is the most critical success factor in project management (PMI, 2013). At the same time several research findings indicate that, in case of many projects, activities in the field of communication management are disordered, supported mainly by project managers' intuition, or neglected (Paasivaara & Lassenius, 2003; Adera, 2013:1359-1366). Project communication management methods, recommendations and tips supplied by project management methodologies or standards like PMBoK, PRINCE2 or agile methodologies like SCRUM, seem insufficient to ensure proper, effective project communication management.

2.2. What is communication?

The word communication comes from a Latin word which is communis, that means common or in other words mutual. When we communicate either generally or professionally, we are trying to establish commonness with someone else. That is, we are trying to share information, an idea, or an attitude among the team involved in that project, Durham Peters, J. (2008).

2.3. Why is communication important in project management?

Communication consumes 90% of a PROJECT MANAGER's time to bridge the communication gap between all the stakeholders involved and sail them on the same boat to achieve project success and ensure that everyone is on the same page. Communication gap can result in improper coordination of the project activities, duplication of efforts, wastage of time and resources, and can end up in the failure of the project, (Joubert, 2020).

There are mainly 3 types of communications:

1. Non-verbal Communication: 55% of conveying the message is composed of behaviour physical mannerisms.
2. Verbal Communication Formal: Presentations, speeches etc. Informal (meetings conversations etc.).
3. Written

Communication skills allow information to flow internally within the organization and externally to clients, suppliers, contractors, and all related stakeholders.

2.4. Communication Barriers

a) Noise
b) Distance
c) Hostility
d) Language
e) Culture
f) Evaluative tendency
g) Improper decoding
h) Personality and interest
i) Position and status
j) Lack of responsive feedback
k) Withholding information
l) Mixed messages
m) Stereotyping

Crucial points about communication:

The pitch and tone of voice makes a difference in attracting listeners. Active listening is used in conflict resolution getting the feedback of the listener and paraphrasing or reproducing the understanding in their own language so that the speaker is sure that the message is conveyed to the listener. Effective listening is watching physical gestures of the speaker and understanding more beyond the words but from his expressions, Borg, J., (2009:240-246).

Plan Communication Management

This is the first process in the knowledge area which comes in planning process group for determining stakeholder's' information needs and defining communication approach:

a. Who needs what?
b. When does he/she needs it?
c. Who will deliver?
d. How will it be delivered? report, email, verbal and so forth.

This should be planned early and constantly revised throughout the whole project life cycle because improper communication planning will lead to significant problems that may cause numerous problems for the company.

Plan Communications: Inputs

Project management plan serves as a reference for information, executing the project as per the written plan and monitoring the project to see that everything is going in accordance with the plan. Stakeholders register helps to identify the communication requirements of each stakeholder. Enterprise environmental factors such as company culture, infrastructure, market conditions etc. Organizational process assets: past records, lessons learnt, templates, guidelines, and procedures, Borg, J., (2009:240-246.

Plan Communication Management:

Communication Requirements Analysis:

Determine information requirements of the project stakeholders. Number of communications channels required for a team is calculated using the formula N(N-1)/2, where N is the number of stakeholders, (Management Guide, 2022).

For example, if there are 10 stakeholders, then there must be 10(10-1)/2=20 communication channels.

2.5. Communication Technology:

Affected by the urgency of the need for the information including frequency and format. Expected project staffing (experience, training, etc.). Availability of Technology (technology should be available to all the parties or stakeholders). Ease of Use by all the parties. Project environment like team is collocated, virtual and cross-cultural differences. Must be considered. Sensitivity and confidentiality of information must be identified and communicated appropriately.

2.6. Communication Models

The sender encodes the message, which is transmitted through a communication channel called the medium of communication. There are factors like distance, cultural differences and whatever is disturbing the communication is called noise. The receiver decodes the message and understands feedback is sent to the sender.

Communication Methods:

The communication methods comprise of the following:

Interactive meetings, phone calls, video conferences etc.

Push Communications letters, memos, reports, emails, faxes etc.

Pull communications Intranet, knowledge repositories etc.

Meetings to understand the information requirements of stake holders.

Plan Communications: Outputs

2.7. Communications Management Plan:

Should include:

A. Communication item: information for distribution
B. Purpose: The reason of the distribution
C. Start and end dates.
D. Medium and formality (information distribution technology)
E. Responsibility: who will distribute the information
F. Escalation Procedures (In case of the absence of receiver or sender someone must be entrusted in the organization to see that the communication is flowing, and the activities are going without interruption in the best interest of the organization)

 Glossary of Terminology for clarity of information

2. Project Documents Updates. (Project Schedule and Stakeholder register and matrix are updated).

Manage Communication

This is the following process in this knowledge area which comes in execution process group for creating, gathering, allocating, storing, retrieving and ultimate disposition of project information according to the communication management plan. This process ensures effective communication among stakeholders and includes several techniques such as:

a. Sender-receiver models (involve feedback, removes barriers etc.)
b. Choice of media (whether oral or written communication etc.)
c. Writing style (appropriate use of active passive voices and sentences etc.)

2.7.1. Fine art of communication in project management

Communication is the life blood of project management in any industry. It is also an essential process in our day-to-day life, and the entire world revolves around it. Lasswell's Maxim outlines communication as “who says what to whom in what channel with what effect”. Communication is exchanging of information from one point of the project to the other point in an efficient and effective manner. Like this, there are various definitions and concepts about communication in today's world.

However, how important is communication in managing projects? We can confidently say that communication is the project “Life Blood” as everything in a project is based on how efficiently people communicate. Communication is a vital tool in the field of project management in any industry. It is gaining importance every day and is the centre of all management processes. The success of a project mainly depends on the effectiveness of its communication network throughout the project members. It starts working from day one of the venture and continues for the entire life span of the project. Communication provides regular updates to notify the status of the project and keeps everyone posted on the performance capacity as well. It has been found that most projects experience a breakdown in communication, that is a surprise considering the barriers available. Approximately 90% of a project manager's time is spent communicating what is going to be done, what needs to be improved and what to expect. This dissertation outlines what communication means in a project mainly in construction projects, the steps required for effective and efficient communication, the key difficulties/problems in communication, how to overcome those challenges through communication sharing, and the significance of communication in diverse work groups.

Understanding the communication process that all project managers must comprehend

The communication process requires a transmitter and a receiver. The transmitter defines the message to communicate, which is intended for a recipient. The sender generates the content with some intent in mind. The recipient receives the message and deals with it according to how they perceive it. He or she may agree to take, revise, or reject the communique. For instance, a project manager notifies a client

that a delay on a major milestone might take place and provides explanations. The client in turn, may decide on what to do based on that specific information.

The communication process requires a medium or tool to send the content to the recipient. The medium may take any form, each one is unique in its own ability to influence the interest of the receiver. As with the message itself, the receiver may choose to accept or reject the medium used by the sender. The receiver which is also called a recipient in this dissertation may also choose to alter the medium so that he or she can receive and understand the message according to his or her preferences. In the earlier example with the delay of a major milestone a project manager may transmit the message in a form of an e-mail rather than have a face-to-face meeting with the client.

The communication process requires content, it requires message. The message can be in many different forms such as hard or soft format. The hard format is normally written on paper whereas soft format is electronic and more technological. Irrespective of the format, a message is necessary in all formats to initiate communication and stimulate a relationship between two or more individuals. In the previously mentioned example, the message is that the project will face a major milestone delay and it is sent in a soft (e.g., electronic) format like an email.

The communication process requires feedback and or response between the transmitter and the recipient. Feedback varies it may be positive, negative, or neutral from the receiver. Feedback can also be simple or complex. Simple feedback is when it involves just two people and complex feedback is when the conversation/message involves three or more people. The movement from simple to complex is because the number of channels and opportunities for misinterpretation rise as each one codes their message and the other decodes the same. For an example, the customer gives negative feedback in soft copy format but suggests a follow-up meeting to discuss the results.

The communication process is rarely “clean” which means that what the recipient receives may not be necessarily what the sender transmitted. A few variables called barriers can affect the quality of a message including the following: beliefs; the emotional impact of a message; values; and the medium used. These barriers and other often referred to as “noise,” can affect the degree of receptivity of a message

and the feedback given by the receiver to the sender because the message was distorted. For instance, the sender may not really believe in a message he/she formulates, but this person may be compelled to send it. The content of the message and the way it is delivered may influence the quality of the message and eventually its receptivity. A project manager may choose to communicate via e-mail or conduct a virtual meeting rather than in person to key stakeholders. The reason may be to avoid direct conflict with the recipients of the message or to ensure safety measure during the Covid-19 period.

The communication process will always be in a setting or context that influences outcomes. This context often includes time, space, and structure. Time may refer to the day of the week or month. Space may be the location of a person, or it may involve a project spread over a wide geographical area. Structure may be the organizational network in place for supporting the communication process of a project. For instance, a project manager may want to communicate undesirable information about a schedule performance only in a specific setting, such as a project status review. Understanding the influence and interplay of the different variables involved requires a deep appreciation of these elements: sender and receiver, message, medium, feedback, variables and setting.

2.8. Tips for individuals to communicate to achieve success in a team

a) Identify & understand the differences

The individual need to know who they you are communicating with. Be aware of the background of each team member across your team. Be aware of their experiences and how they shape the team member's views, opinions, standpoints etc. It is very important to keep an open, approachable, and flexible mind.

Identifying the differences means accepting and respecting individuals for who they are. That does not necessarily imply agreement with their opinions/perspectives nor is it a like/dislike dimension.

The sender needs to consider how you are diverse from the intended listeners. The sender needs to be aware of the following: background and experience and how those things of the past shape your views and sentiments. Communication is a two-way process. The sender also plays an imperative role.

b) Create a suitable message to communicate

The message should be clear and concise about the content and the objective should be certain. For example, are you communicating to inform, to ask for contribution, seeking clarification on an issue or you looking to resolve a problem? It is also crucial for the sender to understand how their r message should be articulated given the differences between themselves and their listeners. Should the message be straightforward and straight to the point, or should it be more delicate, subtle, and indirect?

c) Message delivery

The delivery of the message can be delivered in many ways such as a voice mail, written document, a virtual team meeting (Zoom, MS Teams, Skype), e-mail or face-to-face interaction. Each communication mode has its own positives and negatives. The sender must choose a communication mode that will maximize the potential of a successful delivery of your communication bearing in mind the diverse issues involved. The sender must understand the audience to determine when and how to deliver the message.

d) Comprehension

The most important point is to ensure precise comprehension, not necessarily agreement. The receiver of the message will examine the message as they are listening or reading the message. The sender will be trying to ensure that the message is received accurately.

2.9. Communication in the Construction Industry

In the construction industry, project information is widely and inclusively exchanged throughout the project life cycle planning to hand over. It was outlined that communication is extremely vital whenever a project is implemented. Studies confirmed that project managers spend approximately 90% of their time communicating with the involved parties and stakeholders to the project (Čulo and Skendrović 2010:228-235). To Dinsmore and Cabanis-Brewin (2014), the project's results are directly affected by the communication and coordination of the project processes that seek to meet client's expectations, cost resources and completion

date. Thus, PMI (2013c) indicated that 55% of project managers finds effective communication as the main pivotal factor for an overall success of a project. Therefore, it is essential to manage and coordinate the exchange of this information among participants (Melzner, J., Feine, I., Hollermann, S., Rütz, J. and Bargstädt, H., 2015:5-7). Additionally, it is critical to improve communication in the construction industry to increase innovation and positive decision making (Hoezen, Reymen, and Dewulf 2006:2-7), and to avoid misunderstanding that causes conflict of incorrect messages exchanged that result in project failure (Zulch 2014:1000-1009).

2.10. Communication management

Communication management is a significant topic in project management, as it defines the core of project management. Due to the significant effect this area has on projects this has been emerging notably. PMI (2013a) explained it as the fundamental and most important knowledge area of project management that determines the required processes to be carried out to properly generate, collect, distribute, store, and recover the project information in an appropriate manner. Prior to that, van Riel and Blackburn (1995:1-9) outlined the communication management as an instrument of managing all the harmonized forms for internally and externally communicating, used altogether to achieve effective results. Literature indicated the nature of project communication management as a systematic process, while it scientifically performs, controls, and reviews the used communication.

Verbal	Environmental	Interpersonal	Emotional reactions
- Speaking fast - Speaking with slang - No proper attention was given	- Noise - Diverse interruptions	- Language differences - Defective assumptions	- Anger - Embarrassment
- Late replies - Different terms used - Absence of language skills		- Lack of interpersonal relationship - Little feedback	- Little mutual trust
	- cultural environment - Education	- Sender-receiver relationship	- Individual experiences
- No evaluation prior	- Cultural bias		

Figure 3.Communication Barriers

Source: Own construction

Communication Management

The construction projects need to be thoroughly planned to keep project processes on track to achieve success and fulfil all requirements. Project information is mostly given and dispersed through the overall project management plan. Then as a pivotal influence of the project body, planned project communication will eventually bring the successful project to existence. Planning communication management is the practice of establishing a satisfactory approached plan of project communication in accordance with the requirement, needs and expectations of the client (PMI 2013a). Accordingly, a project communication management plan is the project document that is seen as a key element of the project management plan, which concentrates on how to plan, organize, observe, and control the project communication, as well as to set the project communication goals and requirements (Kliem 2007, PMI 2013a). Moreover, Bilczynska Wojcik (2014:26-35) illustrated that the communication management plan explains the frequency of communication done during the project duration between the project team members and all relevant stakeholders, as it also includes the participant's contact information.

(Čulo and Skendrović 2010:228-235), communication management plan is a document developed by the project manager, which clearly indicates the responsible person for effectively communicating each format of project information accurately and on time with the correct format. The communication management plan generally guides the project team members with regards to how communication information is processed and directs them on the changing communication processes, specify the relevant communication methods, practices, and frequency, and perform convenient efforts to reduce the effect of occurred obstacles on the communication flow. According to Dinsmore and Cabanis-Brewin (2014:25-36), in order to initiate a communication management plan, five essential inquiries need to be pointed up during the project planning stage: the persons-in-charge of decision-making; the developer of the list of tasks and actions; the time interval of completion and reporting; the methods of distributing information; and the recipient of shared information. Additionally, PMI (2013a) emphasized the type of information that would be entailed in the communication management plan so that it is not mixed with

messages that are not needed. This information includes client's requirements, requested information to be communicated, frequency and time frame of the communicated information, sender, receiver and responsible individuals, communication technologies and methods, information flow process, limitations, resources, guidelines, and meetings.

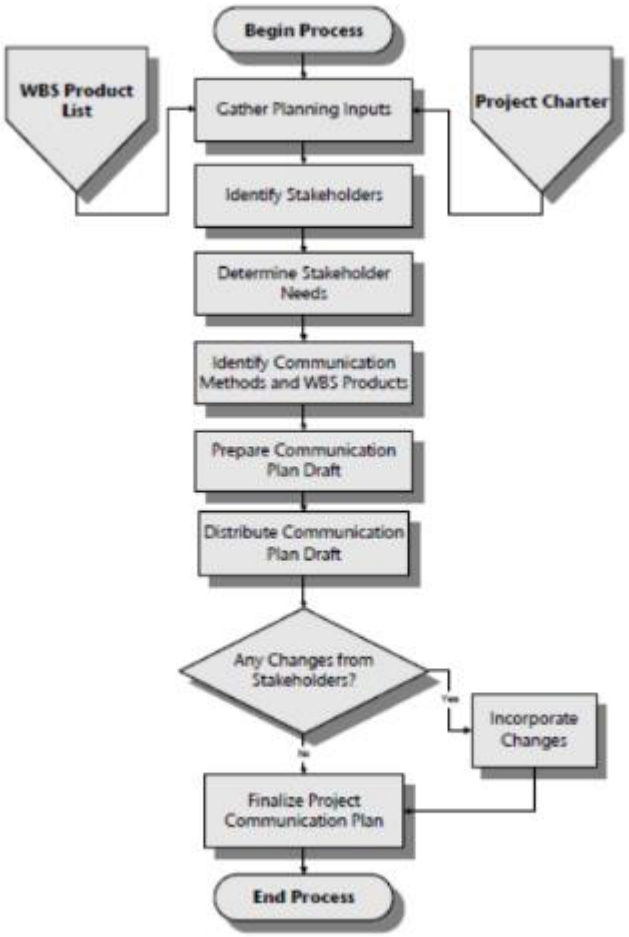


Figure 4.Flow chart of developing a Project Management Plan

Source: Carvalho, Marly M. (2008).

Identify the 5Ws (Why, What, When, Where, Who) and 1H (How)

a. Who needs to be communicated to? This is based on the communication formula and needs to be determined.
b. What needs to be communicated. All information related to the project need not be communicated to everyone in the team.

c. When it should be communicated. The timeline of communication should be monitored.
d. Where should it be communicated. If the team involves many people, then individual level and team level communications needs to be resolved.
e. Why communication of information is essential and to what level is important. Why is it not encouraged as it is blame rather than change?
f. How the communication needs to be done. Is it conducted via e-mail, phone, or a presentation done to the team members?

2.11. Identify and Accommodate the Enterprise Environmental Factors

Much of the communications management processes are linked to the enterprise environmental factors. Enterprise environmental factors that affect project communications are as follows:

a. Organization's philosophy and structure
b. Regulations that the project must comply with
c. The logistics and the organization's infrastructure
d. HR the project will rely on and interact with
e. The procedures, rules and policies for personnel supervision
f. The project's work approval system
g. Stakeholder risk tolerances
h. Commercial databases that the project may use for estimating and budgeting
i. Project management information system

These enterprise aspects should be identified and reviewed. Then the project manager will have to align his project initiative considering all these factors.

3. Identify Organizational Process Assets

The organizational process assets affect how the project manager, project team, and the stakeholders will communicate within a project. The primary organizational process assets that affect communication include the following:

a. Standards and policies unique to the organization.
b. Organizational guidelines, work instructions and performance measurement criteria.

c. Approved technology, security issues, archiving and allowed communication media is what organizational communication requires for all projects.
d. Project closure requirements.
e. Financial controls and procedures.
f. Issue and defect management procedures for all projects.
g. Change control procedures.
h. Risk control procedures.
i. Work authorization systems.
j. Process measurement database.
k. Project file structure, organization, and retention.
l. Historical information and lessons learned requirements.
m. Issue and defect management databases.
n. Configuration management databases and
o. Project financial databases detailing labour hours, costs, budget issues, and cost overruns.
p.

These process assets may be unique for each organization, but if this is reviewed before the initiation of the project and reflected in the communication to the team, then there will never be a problem throughout the project.

What are the Major Obstacles in Communication?

In order to understand major obstacles that come a long way in a project, it is essential to know the interfaces any project may have. The interfaces are as follows:

a. Between organizations
b. Between departments within an organization
c. Between teams within a department; and
d. Within distributed

The main communication obstacles (across interfaces listed earlier) can be drilled down to the following three broad areas:

1. **Political:**

Whenever there are many groups involved, there is the possibility of vested interests and power games getting in the way of dialogue. Such political obstacles usually originate in the upper ranks of an organizational hierarchy, a step or two above levels at which projects are planned and executed. Project manager therefore need to make special efforts to be aware of the key political players in the organization. In traditional corporate environments, these might be functional or senior-level managers who are not always obvious project stakeholders, Awati, K., (2010).

Once the political players have been identified, the project manager should take steps to gain their confidence and buy-in on project goals. This should help eliminate political barriers to project communications. It is best to settle political issues at the level where they originate; escalating political problems up the hierarchy (i.e., to the manager's manager) generally does not help, and may even be counterproductive.

2. **Cultural:**

Organizational culture, which is essentially the totality of assumptions and values commonly held within an organization need to be dealt with. Clearly, this can vary considerably between organizations—some may be more open than others may, for example. Communication at the interface between two organizations with vastly differing cultures can be difficult. For example, one might expect some differences of opinion at a joint project planning session involving a very forward-looking, can-do supplier and a conservative, risk-averse customer. Project managers can ease such difficulties by understanding the divergences in attitudes between the parties involved, and then acting as intermediaries to facilitate communication. In geographically distributed (or virtual) teams, differences between regional cultures can come into play. These could manifest themselves in a variety of ways, such as differences in fluency of language or social attitudes and behaviours. Here again, the project leader, and the rest of the team for that matter, need to be aware of the differences and allow for them in project communications, Awati, K., (2010).

3. **Linguistic**:

Linguistic needs to be understood in the sense of specialized terminology used by different disciplines such as accounting, IT, marketing, etc. Often when specialists

from diverse areas get together to discuss project related matters, there is a tendency for each side to make assumptions (often tacitly) regarding a common understanding of specialized jargon. This often leads to incomplete (at best) or incorrect (at worst) communication. So practical techniques that would solve the above three obstacles need to be identified and implemented. In other words, communication sharing should be best at any project level.

Communication Sharing as the Solution

There are many different avenues a project manager and a project team can take to communicate. Project teams can effectively communicate through hallway meetings or formal project status meetings. Information can be transferred from stakeholder to stakeholder through anything from written notes to complex online databases and tracking systems.

As part of the communication planning, the project manager should identify all of the required and approved methods of communicating. Some projects may be highly sensitive and contain classified information that not all stakeholders are privy to, while other projects may contain information that is open for anyone to explore. Whatever the case, the project manager should identify what requirements exist, if any, for the communication modalities, Awati, K., (2010).

Communication modalities can also include meetings, reports, memos, e-mails, etc. The project manager should identify the preferred methods of communicating based on the conditions of the message to be communicated. Consider the following, which may have an effect on the communication plan:

- Urgency of the information: When the information is communicated can often be as important as what is being communicated. For some projects, information should be readily available, while other projects are less demanding.

- Technology: Because of the demands of the project, technology changes may be needed to fulfil the project request. For example, the project may require an internal Web site that details project progress. If such a Web site does not exist, time and money will need to be invested into this communication requirement.

- Project staffing: The project manager should evaluate the abilities of the project team to determine if appropriate levels of competency exist to fulfil the communication requirements or if training will be required for the project team.

- Project length: The length of the project can have an influence on the project technology. Advances in technology may replace a long-term project's communication model. A short-term project may not have the same technology requirements as a long-term project but could benefit from the successful model a larger project uses.

- Project environment: How a team communicates often depends on its structure. Consider a collocated team versus a virtual team. Each type can be effective, but there will be differing communication demands for each type of team.

The project manager may need to be in touch with people in the same location or various other locations in which project work is being performed. It is the project manager's duty to determine how to do this information sharing; he or she should categorize the means of communication. Information sharing in the current world makes us think of fax machines, telephone, e-mail, and similar tools. How does one or how should one prioritize the means of communications and convey what is really required?

1) In person: The best communication is still face-to-face. The project manager can determine the person's body language and get their tone and nuances. Very importantly, this often talks more about what is going on in the project.

2) Telephone: The tone of the voice can be heard. Note that you should always smile into the telephone, which gives a feeling of upbeat and confidence in the project.

3) Videoconferencing: This is very useful in saving travel costs.

4) E-mail: The most popular of these is obviously e-mail next to the telephone. It is amazing that people are taught how to use an e-mail system but are not provided with any guidelines on effective use. Here are some specific guidelines that would help to increase the efficiency of communication via e-mail:

- Avoid using email for any sensitive topics.

- Assume that everyone in the company will read your emails.

• Think about what medium to use for communications before you resort to e-mail.

• Make sure that the title of the email is either very specific or very general; and

• Avoid using email to discuss an issue in any depth. E-mail was never intended to be used as groupware.

5) Fax: This is not highly recommended nowadays, as it is not possible to confirm if the sent fax was received until the receiver confirms.

2.12. Conclusion

The literature strongly suggests communication is the key for success for any project. It lists the importance of communication, the communication process, the steps to keep communication alive, an effective communication plan, four steps for effective communication, the obstacles in communication, importance of communication in a diverse work group and tips for any individual to communicate effectively in a team. Finally, it elaborates a case study for the four-step effective communication. It saves time and money, makes life easier, makes you more profitable, and it just makes sense.

CHAPTER 3: LITERATURE REVIEW ON COMMUNICATION

3.1. Introduction

Communication is an important topic in the construction industry, as also reported in the literature. Often problems in construction are referred to as communication problems. Due to its specific characteristics, the industry forms a complex communication environment. Construction is a fragmented and dynamic sector with a project-based nature. This means that many stakeholders operate in frequently changing sets of relationships which are contractually driven. The culture shows a reality of conflicts and lack of mutual respect and trust. The goal of this research project is to improve communication and address barriers in construction. In conclusion this paper offers some recommendations.

3.2. Communication in construction

Since the early 1940s, literature on communication in construction has appeared, mainly based on the situation in the UK (Emmitt and Gorse 2003:1-11). Many problems concerning communication have been reported, with a focus on intra-supplier communication within the construction sector; demand-supply communication during the design phase; and communication between and within single demand and supply side parties, during whole the construction process. In this division the demand side contains (representatives of) principals, users, investors, etc. and the supply side architects, (sub)contractors, advisors, etc. Based on an overview of this literature, the importance of improved communication in construction and the main factors influencing communication are discussed.

The efficiency and effectiveness of the construction process strongly depend on the quality of communication. In literature four reasons are mentioned why improvements in communication are needed. The first reason is that an improvement in the communication within the building team, in project teams and between project manager and contractors could reduce failure. Second, more open communication at all levels could lead to innovations and better technical solutions Third, communication improvements in early phases of projects would positively influence the quality as perceived by all stakeholders involved. Finally, improved

communication during the briefing might lead to better decision-making, for example less haste in moving to solutions and better ways of looking at the requirements first. Communication is influenced by several factors and an overview can be derived from literature. The first type of factors is related to the organization of the construction process. Main aspects are the difference between formal and informal communication routes during the design phase as well as during the phases of development and the divorce of design and production. The second type of factors is related to the stakeholders themselves. Opposing interests could lead to hidden agendas, often leading to restricted communication and all stakeholders' (assumed) frames of reference are found of great influence on communication as well (Usman and Winch 1993).

Over the years, several studies concluded thus that the construction sector could benefit from improved communication. Although the studies highlight several aspects of communication in construction, no literature overview has been found on demand-supply communication in construction. Studies focus on intra-supplier communication (between head- and subcontractors for example) or intra-demander communication (between principal and end user for example), or study just one phase of the building process. In the cases where communication between demand side parties and supply side parties was studied, the focus was on just a few stakeholders instead of considering many parties of each side. Practice of communication in construction.

3.3. Results Characteristics of the Dutch construction industry.

The picture of the Dutch construction industry, as painted by the interviewees, is one of an industry made up of conservative, poor communicating stakeholders. Even more than in other industries, human factors seem to determine whether construction projects develop in a good way or not: there needs to be some kind of "chemistry" between the individuals involved to make the process go well. As a result of the small margins, the hierarchy within the supply-side is rigid and stakeholders behave in both strategic and calculating ways, Hoezen, Mieke & Reymen, Isabelle & Dewulf, Geert. (2006). This behaviour results in a mutual lack of trust, reversely discouraging stakeholders to improve their communication. Interviewees point out that when something goes wrong, it results in pointing fingers on both sides, the

claiming of extra efforts (and thus costs), coupled with a decreasing level of trust. According to the interviewees, trust is the main cause for principals' wishing to be involved in the entire process, Yembi Renault, Berenger & Agumba, Justus. (2016). Given their will to control every little detail, lots of consultants are involved.

In infrastructure projects executive parties just seem to get involved in the latter stages of the building process only, whereas in public utility building or housing projects their input is being requested more and more in earlier stages of the process. Nevertheless, they still have little experience with it. As a result, executive parties only think about the product to build, and not about the problem it should tackle. Conversations therefore tend to be about product specifications and project plans rather than about functional requirements, wishes and needs. Despite the fact that communication has been organized in much the same way for a long time, interviewees state that a dialogue is making constructors to rethink their professional relationships with clients, and government realizes that procurement should be less detailed. Over all, interviewees praise the industry for its commitment, hard work and competency. The importance of improving communication in general, the interviewees do not perceive construction communication as problematic; however, they admit that communication processes are far from optimal, Hoezen, M.E.L., Reymen, I.M.M.J. and Dewulf, G.P.M.R., (2006). As a main consequence of poor communication, a waste of time was mentioned. For example, errors from early stages have to be solved later. Moreover, adjusting in latter stages of the building process usually costs extra money. Interviewees think that improved communication would probably lead to less delays and lower expenses. In addition, all stakeholders' satisfaction about both the process and the quality of the product could rise when they would communicate in a better way.

Factors influencing communication

According to the interviewees, the main problem of communication in the Dutch construction industry lies in the lack of stakeholders' ability to empathize with the other parties involved Hoezen, Mieke & Reymen, Isabelle & Dewulf, Geert. (2006). This is especially the case between demand side and supply side parties. Since designers and constructors do not experience how their choices affect the use and maintenance of the product, it is difficult to communicate about these topics. This

results in constructors who do not think along with the principal; principals who are not open-minded to the constructors' input; and designers who design objects that do not always match the wishes and needs of their principals. In addition, the stakeholders' perception of their roles in the process is not always perceived as professional, Hoezen, M.E.L., Reymen, I.M.M.J. and Dewulf, G.P.M.R., (2006). Interviewees feel that principals do not always think thoroughly about their wishes and needs, and do not take charge in order to enforce their will. Neither are constructors as mature as interviewees think is necessary: too often they behave in strategic and calculating manners.

The respondents agree that the preparations of the project are important. Principals need to get their requirements more clear and therefore enough time should be spent on the brief. Respondents argue whether the brief should be detailed or not. Some think the brief should contain mainly functional specifications (in order to optimally use the supplier's knowledge on possible solutions); others think that specifications should be unambiguous and detailed (in order to prevent misunderstanding about the desired product). However, interviewees share a complete consensus that the principal's view of his or her own role is crucial, Awad, M.A., (2005:1-69). The best base for clear communication is when principals actually see themselves as chiefs and also act like this by being straight about the requirements and making clear the dos and don'ts. Finally, interviewees talk about an imbalance in stakeholders' power and about poor (mainly financial) agreements, especially in the public sector. Openness about the budget available and mutual responsibility could positively affect communication.

3.4. The problem of communication in construction and a research set-up

The expert interviews, conducted in the Netherlands, reinforce the findings in literature. The communication influencing factors as mentioned by the interviewees do fit into either the organization of the construction process or the interests of stakeholders involved or their frames of reference. Looking at the interview results, interviewees seem to focus on the communication between stakeholders at the demand side and stakeholders at the supply side. This is where they reported most problems and demand-supply communication seems thus worth to be studied in more detail.

The researchers define communication as a process in which the participants create and share information with one another in order to reach mutual understanding. Main research questions that need to be addressed are “How is demand-supply communication organized in construction?” and “How to design effective demand-supply communication processes for construction projects?”. (Rogers and Kincaid 1981).

To answer these questions, we designed the following research set-up.

a. Literature study: As the aim is to contribute to the fields of communication (contributing to the knowledge on group communication, since stakeholders in construction are part of different working groups), management (defining how the organization of demand-supply communication works in construction) and construction (improving demand-supply communication), the previous literature study in the field of construction will be expanded with an overview of relevant studies on demand-supply communication in the fields of designing and management. Several tools are already available with an influence on demand-supply communication. Since there is little scientific base on the working of these tools, in addition an overview of demand-supply communication influencing instruments and methods was made (not necessarily in construction).
b. Theoretical framework development Dainty, Moore and Murray (2007:40-45) combine several communicational; constructional; theories and ideas into a model for group communication.

b) In this model both formal and informal communication routes have their place. Group members are seen as individuals yet acting from within a group. Factors of influence in this model are members’ roles (formal and informal); their levels of maturity and expertise; and all kinds of noise (language differences; varying frames of reference; physical noise (like plant and machinery), etc.). This model seems a good starting point for studying demand-supply communication. In construction, stakeholders’ representatives are both part of their employers’ team and cooperate with representatives of other stakeholders in working teams. All communication influencing factors as identified from literature can get their place in Dainty, Moore and Murray’s model. The model could be further developed and adopted to the goals of our research.

c) Empirical study: In order to study problems with demand-supply communication in the practice of construction, the organization of demand-supply communication will be studied in several building projects, including tools used to enhance this communication.
d) Organization of demand-supply communication processes: The empirical findings will be analysed within the theoretical framework to obtain insight in the organization of communication processes and factors that influence this. The effects of methods and instruments on this communication will be studied, Wright, P.M. and Nishii, L.H., (2007).
e) Developed project management of approach: The insights gained will help to make recommendations for the use and/or develop project management of methods and instruments to improve the organization of demand-supply communication in construction.

Developing project management competency: perspectives from the construction industry

Project managers in today's construction industry are faced with a situation whereby the fundamental roles and functions they perform are witnessing a gradual shift in focus. It is critical for a project manager to develop keep competencies as communication is one of them. This allows the project manager to guide communication across the organisation and ensure that things such as barriers are addressed and resolved. To maintain their professional competency, practising project managers in construction adapt to this changing industry environment by relying on knowledge and skills acquired through training and experience, Edum-Fotwe, F.T. and McCaffer, R., (2000:111-124). The extent to which such training enables project managers to effectively adapt to changing demands have considerable relevance not only for the training of future project managers, but more importantly, the kind of management and general manpower development policies that construction organisations can adopt. The paper presents a study that focuses on the development of construction project managers and how they maintain their professional skills in a changing construction business environment. The paper first sets out the areas of knowledge and skill required for project management certification and argues that the traditional engineering orientation of these requirements are insufficient for today's construction project manager. It identifies the

general knowledge and skill elements that are perceived as essential for developing project management competency through a survey of project managers in the construction industry.

3.5. Essential project management knowledge

Professional competency in project management is attained by the combination of knowledge acquired during training, and skills developed through experience and the application of the acquired knowledge. Much of the knowledge needed to manage construction projects is unique to project management (such as critical path analysis and project cash flow forecast). Construction project management outlines the generic areas of knowledge that construction project managers are usually expected to acquire by various accreditation Bodies and, which reflect their technical requirements for certification. The compiled knowledge areas cover two main sources, the reference material of the Project Management Institute — PMI the Association of Project Managers and a review of instructional material for several other organisations that provide training services in project management to corporate establishments.

3.6. Conclusion

This chapter has a provided a detailed explanation of the communication problems within the construction sector. Based on the literature that the researcher has gathered, the author can draw up a conclusion that Project Management is an essential tool in the construction sector. This field helps in communication between the company's goals and desires and the actual workers on the ground. The literature further advises that professional project management competency is required. Therefore the project management team needs to be qualified through the Project Management Institute and undergo their testing to ensure that they deliver as per their standards and more.

CHAPTER 4: RESEARCH METHODOLOGY AND RESEARCH DESIGN

4.1. Introduction

Research Methodology and design assists researchers to reduce the amount of complexity of the study when used appropriately and it helps to produce a logical procedure in addressing the research objectives and questions (Marczyk, G.R., DeMatteo, D. and Festinger, D., 2010:152). This chapter further involves an overall look on research design and its sequences and procedures used in developing the flow and interrelationship of all actives involved in the research to answer the research questions (Kwofie, 2015:138).

The focus of this study is to evaluate the role that communication barriers play in project delivery in the construction sector. The research process used for this research involves a general review of literature on the topic by identifying major concepts looking at previous communication barriers, how they were dealt with, which barriers are the most prominent in hindering project delivery and the collection of data to meet the research scope. Forman, J., Creswell, J.W., Damschroder, L., Kowalski, C.P. and Krein, S.L., (2008:764-771) suggests that because research is a process, it follows certain steps or stages, and depending on the type of research (applied or pure), the process can be traced.

4.2. Problem statement

The problem is the ineffective delivery of construction projects due to poor and unaddressed communication barriers between the project management team at all levels. Communication barriers are a major concern in construction projects because there are different levels of literacy amongst the project team members.

The delay for completion and the additional cost incurred in construction projects are likely to be traced back to poor coordination created by inadequate, inapplicable, mis understood, incorrect, incompatible, and/or late information. Therefore, effective, and clear communication that takes into consideration the existing communication barriers between interdependent project teams within the project team is mandatory to ensure project's success. There is a need to investigate, the nature, magnitude, causes, effects, and corrective measures to poor handling of communication barriers

on project delivery. Addressing project communication barriers has a positive net effect on the project and the business.

4.3. Research objectives

The research objective is the rationale for which the study is intended, the expectations or the desired outcomes for the research. The objective of this study was to: Firstly, secondly, thirdly, and lastly

- Identify and explain different types of communication barriers in the selected construction company.
- To analyse and identify how communication barriers affects construction projects.
- Critically evaluate and investigate how communication barriers can be dealt with.
- Identify main communication barriers relevant to project failures.

4.5. Research design and methodology

This research is made up of two techniques which are called, qualitative and quantitative methods, however quantitative is the predominant research technique. There are two methods which are commonly used in research: qualitative and quantitative research methods. Quantitative method uses numerical data where a researcher focuses on collecting data in the form of numbers to explain their phenomenon, the data is analysed using quantitative methods such as excel to present findings and make recommendations based on the findings. According to (Yilmaz 2013:311-325) qualitative research focuses on the meanings, interpretations, symbols and the processes and the relations of the social life. Since this is primary research, the intention of the research is to try and establish the cause-and-effect relationship. In spite of the controversies around the positivistic and phenomenological research paradigms the researcher is of the opinion that both will contribute to the required knowledge. The research design (the blueprint) is the structure designed for collection, measurement and analysis of the data used to answer the research questions (Blumberg, 2008: 2005-2006). The plan includes personal distribution and collection of questionnaires as a research tool. With regards to the research instrument, the questionnaire will have three sections: Section A, biography/profile, Section B – Likert scale and Section C, open ended questions.

4.6 Research design

Research design is an approach on how the researcher will answer the research question and the research problem must be thoroughly addressed to answer all the necessary questions. According to McNichols, (2000:313-345) research design is a set of methods and procedures utilized by the researcher in gathering and analysing measures of variables stated in a research problem. Through the research design, the researcher will outline sample selection, sample size, data collection instrument, procedures, and ethical requirements.

The study adopted case study research which allowed the researcher to use a questionnaire to gather information, on this instrument a section for open ended questions was included as well.

4.7. Target population

The company targeted has a staff complement of 150 individuals in the Western Cape, and 60% of the target population returned their results and answers of the questionnaire. 60% of the respondents constitute 90 respondents. The company is not spread-out across the Western Cape depending on where the next project is, the main offices are based in Bellville and employees travel according to the place a project is in.

4.8. Sample size and sampling

The number of respondents had been positioned at 90, in order to get a generally fair understanding. The sample size was also determined by the cost of the exercise and accessibility to an assortment of small enterprises.

4.9. Data collection method and the research instrument

An online questionnaire was used as an instrument to gather the required data from the selected organisation. According to Stevens et al (2008:1-9), a questionnaire is a list of well thought out and carefully structured questions with the intention of soliciting for reliable responses to research questions. The effort employed into the designing of the questionnaire seeks to assist in obtaining information from the population as accurately as possible, obtaining maximum cooperation from respondents from the target population and facilitating the collection and analysis of the data. Respondents that pull out half way will not be forced to continue.

The instrument was issued to a minimum of 10 employees chosen randomly as a sampling exercise which aimed at finding out if the questions were understood and made sense to the employees. The questionnaire was not changed as the feedback did not request any clarity or changes. The instrument was subsequently used to collect data from the respondents. This data was critically analysed to give accurate information for this study.

4.10. Data analysis

The first step in the analysis is descriptive statistics which includes ordering and summarizing of the data via tabulation and graphic representation, this is followed by

the calculation of the descriptive measures. This displays the inherent trends observed from the data collected. The second step is statistical inference, which entails drawing inferences about the population from which the sample was drawn. This is done by using descriptive measures that have been calculated. Descriptive statistics and statistical inference are the two main aspects of the data analysis; cognizance should be taken of the reality that information on any population will never be 100% correct. This introduces another concept to data analysis, the theory of probability; this is the bridge between descriptive and inferential statistics. The diagram below illustrates the data analysis process as suggested above.

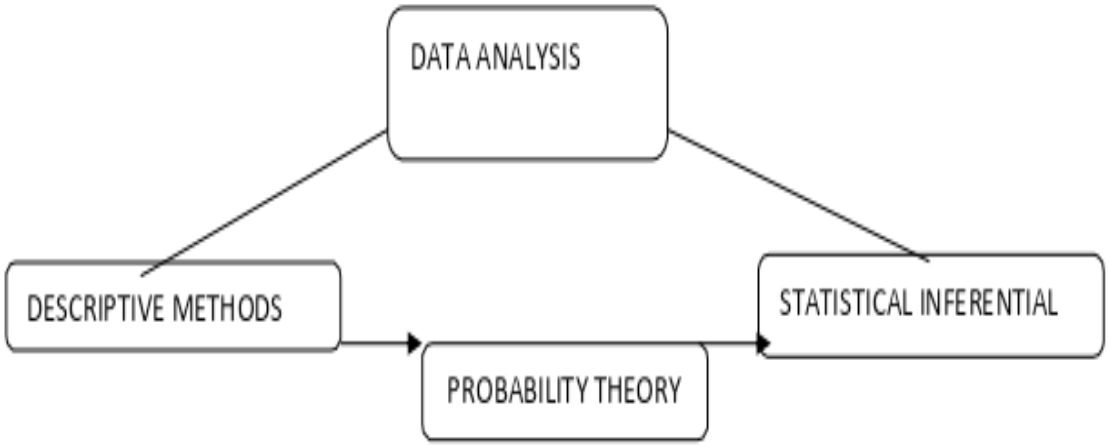


Figure 5.Data analysis process

Research approach

The research is typically made up of two techniques which are called, qualitative and quantitative methods.

The researcher used quantitative research design using a single questionnaire with a qualitative element involved as the questionnaire involved open ended questions. Therefore, the research approach predominantly a quantitative design. Choosing this method allowed me to gather as much information as I could to analyse numerical interpretations from different respondents, while at the end I allowed the respondents to answer the open-ended questions which brings the qualitative element.

4.11. Ethical consideration

Within Universities its seldom that research is conducted without considering the conditions, values, beliefs and interests. Universities have very strict ethical standards which are often adhered to. However, some unethical research may still take place in the industry.

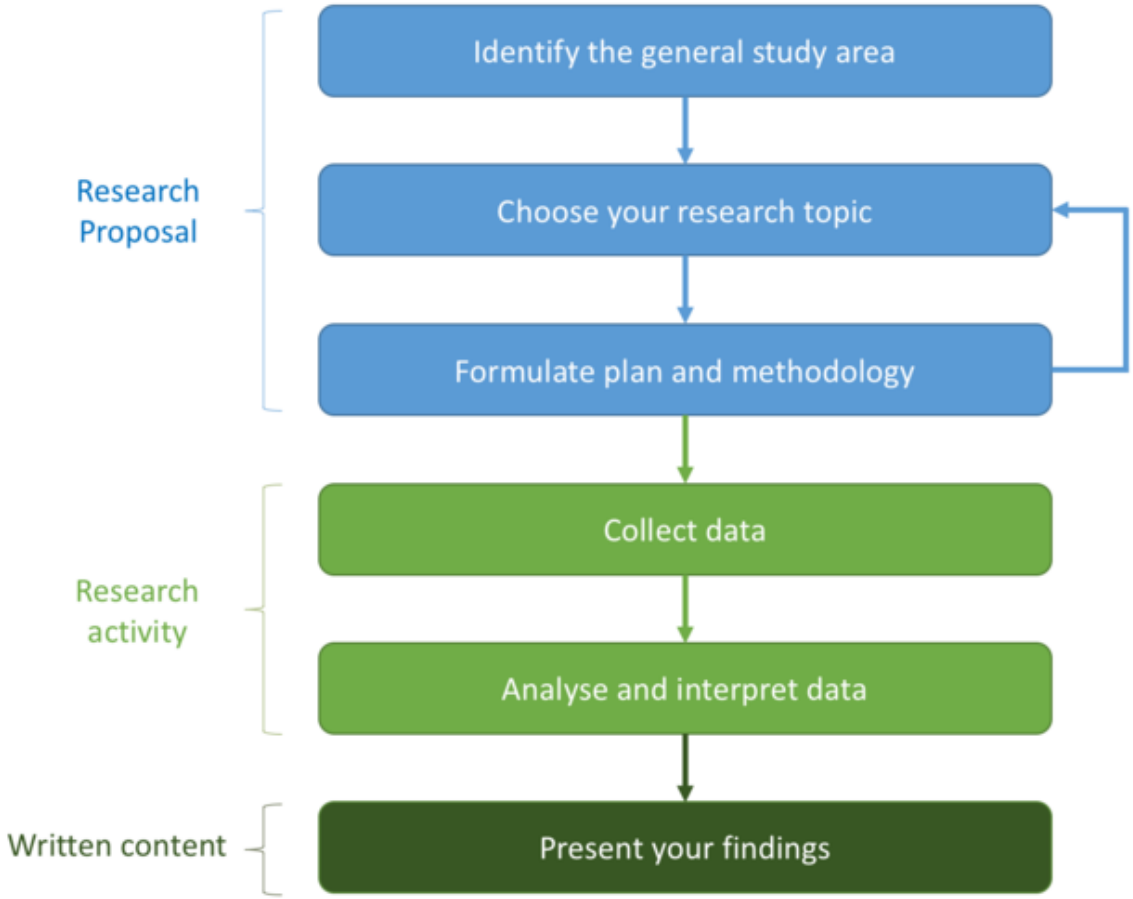


Figure 6.Research process

Source - https://www.futurelearn.com/info/courses/research-process/0/steps/71889

The philosophical paradigm in any study is crucial and appropriate research methodology is chosen (Cresswell, 2009; Easterby-Smith et al., 2003:7-25). In trying to understand the way research is done, an epistemological assumption which refers to an idea, for an example what methods of knowledge can be obtained. How a person can use all resources available in searching for something that is true from what is regarded as false, Burrell & Morgan cited by Kwofie (2015:170-178). Kwofie (2015:170-178) added that research study deals with problems related to the level of

knowledge being accepted in a study. Cresswell (2009:392-402) developed a causal relationship between the researcher and the subject under consideration. Positivism and Interpretivism were identified as the two main epistemological assumptions especially in social science and construction management, (Bryman,2009; Cresswell, 2009:392-402). Positivism epistemological position states that natural science methods can be used in a study of social phenomenon (Cresswell, 2009:392-402). According to Bryman (2011:15-28) and Saunders et al., (2009:85-95), the positivist position sees that a research problem and questions can be addressed through using a process of objective measurement and repeatability approach where a researcher can stay being neutral and not biased in regard to the process.

On the other hand, interpretivism epistemological position states that researcher's perspective and point of reference will determine how the subject is being understood and interpreted in a research context and phenomenon (Cresswell, (2009:392-402); Saunders et al., 2009 & Marczyk et al., 2005). Through Interpretivism, a biased view can be shown by the researcher in the interpretation of the study. The researchers' values and beliefs are clearly realised as how the researcher becomes the driving force in the interpretation of the research findings (Bryman, 2009; Vanderstoep & Johnston, 2009; Marczyk et al., 2005:15-35).

4.12 Empirical data

A questionnaire was used as an instrument to gather the required data from the randomly selected organisations

It was decided on 90 respondents to ensure an accurate and fair understanding of the results. The questionnaire, which was constructed and given to the respondents, has three sections and 32 questions. In Section A, respondents provided biographical information about themselves. In Section B, which is a Likert scale, the researcher asked questions based on communication barriers in general and the preferred medium of communication across the organization, also to check how the company addresses communication barriers. Respondents were asked to provide opinions on communication barriers in Section C, which comprises of open-ended questions only.

4.12.1. Section A – Biography

Section A consisted of questions relating to the profiles, roles, development courses and years of experience that a respondent has. These questions were intended for getting a better understanding of the respondent's profile, qualifications, and background. Their experiences and qualifications would provide an indication of the level of knowledge a respondent has about communication barriers and construction communication across different teams.

4.12.2. Section B – Likert Scale

Section B entailed questions regarding project management communication in general and communication questions that might be used in the company/organisation. The opinions of the respondents were collected using a Likert scale of 1 to 5, where 1 represent strongly disagree, 2 disagree, 3 neutral, 4 agree, and 5 strongly agree.

4.12.3. Section C – Open – Ended Questions.

Section C comprised of open-ended questions in which a respondent got a chance to voice out their opinions concerning communication. In this section, respondents did not have limitations as to what they could answer. The first question required the respondent to think deep and list communication problems they had encountered and problems which are affecting the company. The second question interrogated the respondent’s view of what constitute as good communication. The last question prompted the respondents to provide their own view on what they would change to enable effective communication to take place when given the appropriate authority to make a change. The last question provided provide an overall view on how employees from different levels or department view communication in the company and what changes they would be able to make.

4.13. Conclusion

This chapter discussed the research methodology for this research and the crucial aspects that need to be undertaken to produce quality findings. The researcher provided a brief explanation in terms of the selected population and provided reasons why this sample population was selected. Furthermore, the researcher discussed the importance of the study and its expected findings and how it will be beneficial to the construction project management industry. This chapter also discussed the ethical considerations that were followed during the study.

CHAPTER 5: DATA RECORDING, ANALYSIS, AND INTERPRETATION

5.1. Introduction

The data collected during the field work with respondents is discussed in this chapter, using an Excel Spreadsheet; the data was first cleaned, edited, coded then captured on to the spreadsheet, from which pictures were constructed. The images essentially show the relationships between the variables as requested from the research instrument. Random sampling was used to gather the data after explaining clearly to the respondents that participation was voluntarily, and ethical guidelines were followed to the latter (www.cput.ac.za, 2015: 2).

The rights of the participants with regard to respect for human dignity, the safeguarding of confidentiality or anonymity, and the right to information were all observed. The objective of the research was to understand the importance of communication in project execution as stated in the PROJECT MANAGERBOK (2016) and as edified in all project management courses. The findings were also intended to aid in the development of some guidelines to be used for the training of future project leaders and coordinators.

5.2. Reporting of the results

The instrument used for collecting data had been constructed and reviewed by the statistician for validity and reliability. Furthermore, a pilot project was conducted, with intentions of updating the questionnaire, which was done successfully before the proper field work was embarked on. A statistician was assigned to assist with final touches on the questionnaire, and the specialist did both reliability and validity tests before the instrument was used. After collection of the data, the collected data was categorized, edited, and analysed using Microsoft Excel Programme. This was chosen because of availability of the software, besides; it is user friendly, and it was helpful with converting the data into graphs, charts, and tables. The illustrations constructed from this exercise are hereby detailed including the researcher's interpretation of the findings and the relationships between the variables. The use of these illustrations made it easy to compare the variables under study and thereby clarify relationships. The questionnaire (the research instrument) was divided into three sections, namely section A, B & C.

A structured questionnaire was used as the research instrument to collect the information and the questions on the questionnaire were developed from the most crucial questions regarding communication barriers vs projects success.

A three (3) section instrument was used to collect data, the sections were as follows:

- Biography, which sought to identify the respondents. which helped in identifying eligible participants (Appendix A)
- Likert scale – primarily meant to assist in the measuring of the opinions and attitudes that determine the operational effectiveness. These will be ranked on a 1-5 scale with 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree (Appendix B)
- Open ended questions: respondents were requested to fill in data in direct response to the specific issues to deal with the questionnaire (Appendix C)

5.2.1. Section A: Biographical Information

In all 5 questions that were asked, they are reported in the format explained above to allow maximum attention per every question.

Question 1: What is your position in the organisation?

The position each respondent holds made it easier for the researcher to include or research about the individuals that are in the same level to make the results accurate as mixing administrator and executive would totally misrepresent the barriers.

Response: The researcher decided to choose 4 different positions which were almost in the same professional level. The positions include administrators (individuals that are responsible for managing data, reports organize and scheduled meetings and events), electricians, plumbers, and bricklayers. The data collected was a statistical report on the type of professions the respondents were on working on. The figure 7 below shows an interpretation of the results.

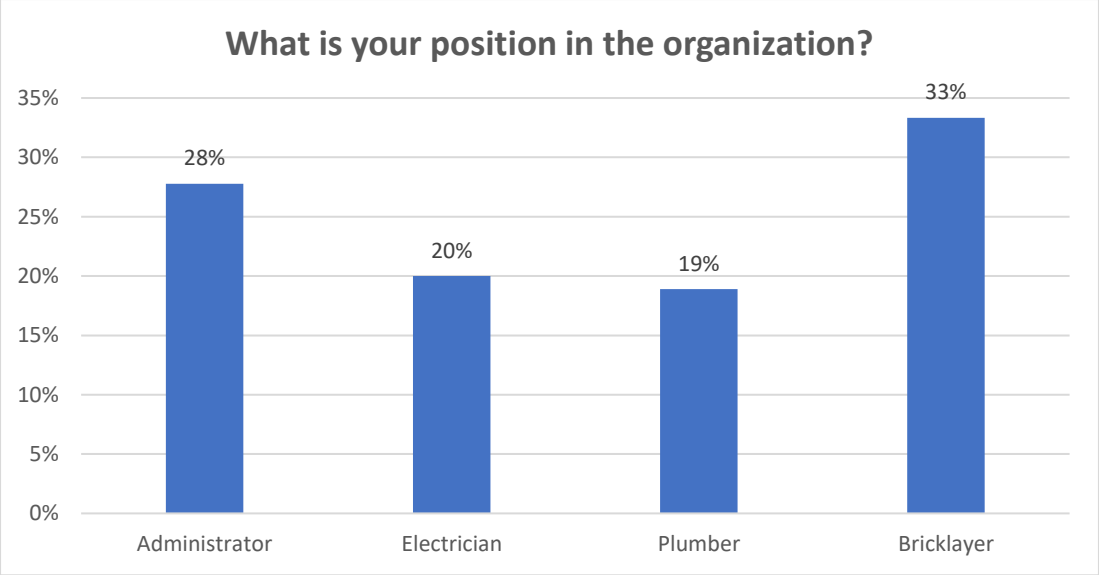


Figure 7.Employee's role in the company

Source: own construction

Thirty three percent (33%) of the respondents indicated that they were bricklayers. The next level (28%) of the respondents indicated that they were administrators. The following next level is (20%) advised that they are electricians. While 19% of the respondents were plumbers and this was the lowest percentage. This shows that the study had more bricklayers and administrators as the respondent.

Question 2: How many years have you been in this position?

Under this study the employees have different years of experience.

Response: Four categories were provided for the respondents to choose from. These categories included the following 0-2 years, 3-5 years, 6-8 years, and 9+ years. Respondent's answers to the second question are illustrated in figure 8 below:

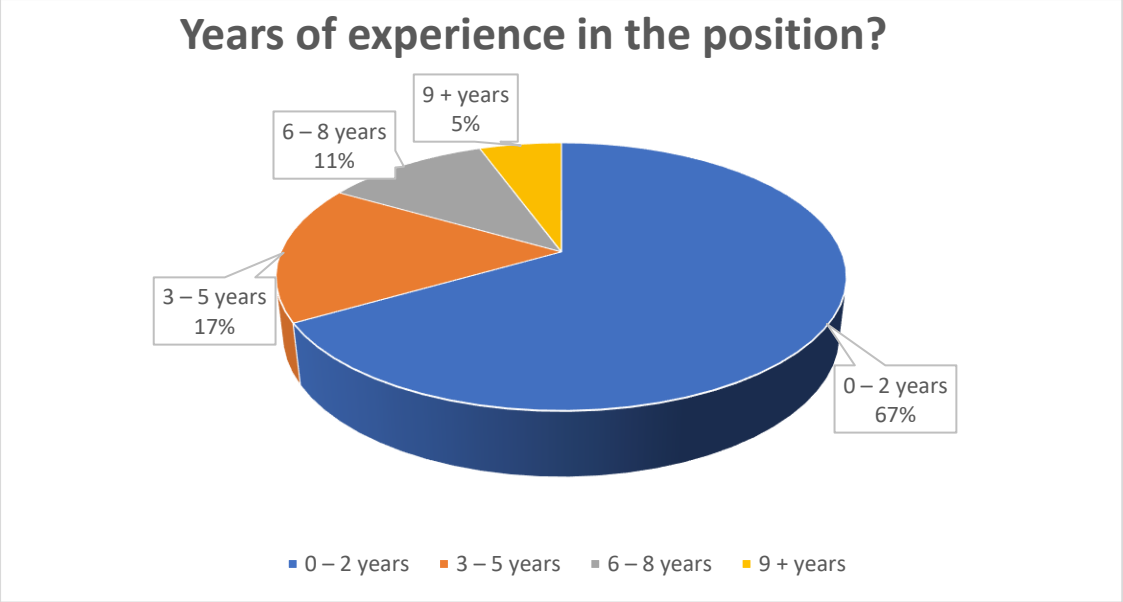


Figure 8.Working period in the organization

Source: own construction

67% of the respondents which is the highest percentage amongst the 4 categories indicated that they have 0 – 2 years of experience in the organisation. The category for 3-5 years of experience had the second highest percentage of the respondents. While the lowest percentages 11% and 5% belonged to the 6-8 years and 9+ years respectively. This shows that employees in this company tend to be with the company for the first 5 years and after that very few of them stay beyond those years.

Question 3: Which communication medium do you find extremely effective/useful?

In communication everyone has their own opinion of what is the best communication medium. This sought to see which medium was the most preferred in the organization amongst the mentioned mediums.

Response: Communication medium is very critical and important as it is the means in which the message will be communicated with. There are a number of communication mediums, the respondents are required to choose amongst the options provided on figure 9 below:

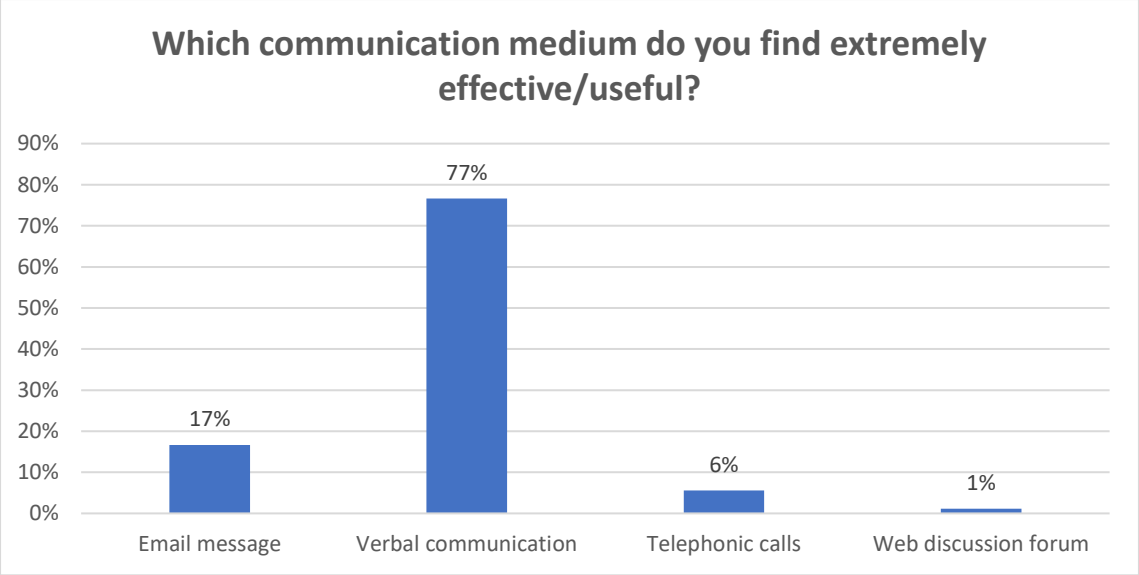


Figure 9.Preferable communication medium

Source: Own construction

77% of the respondents find verbal communication as the most effective communication. This was followed by the email message (7%) then telephonic calls (6%). Web discussion had the least percentage with 1% which means that this communication is deemed as the least effective communication medium in this study.

Question 4: Who is responsible for scheduling meetings and announcements?

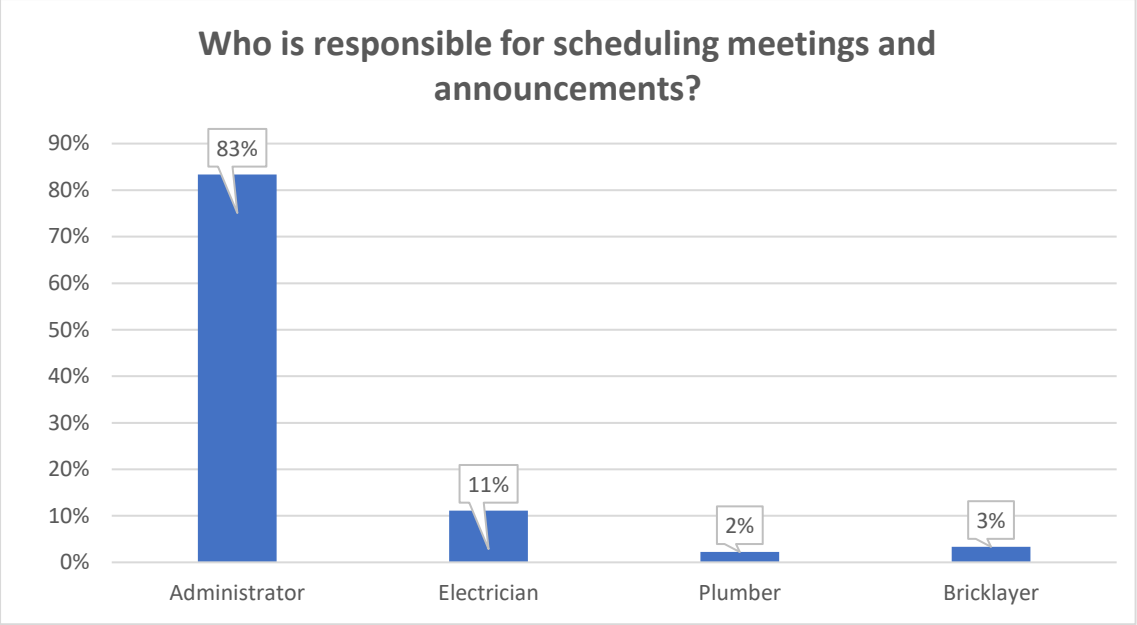


Figure 10.Employee responsible for scheduling

Source: own construction

5.2.2. Section B Likert Scale

The Likert Scale is a measure of perception, attitudes, and beliefs and as such helps the researcher to understand how communication is done and perceived. Pre structured statements based on literature reviewed on communication barriers guides the process. The respondents were given statements which they were requested to rank as per the following. These statements will be ranked on a 1-5 scale with 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree.

Statement 1: There is an open-door procedure for communication in this organization.

Response: This statement sought to understand what kind of communication the organization was adopting. Here the researcher was trying to understand the organisation's philosophy in terms of communication. There are multiple communication methodologies, with the following statement the researcher sought to measure the degree in which company allows open door procedure communication.

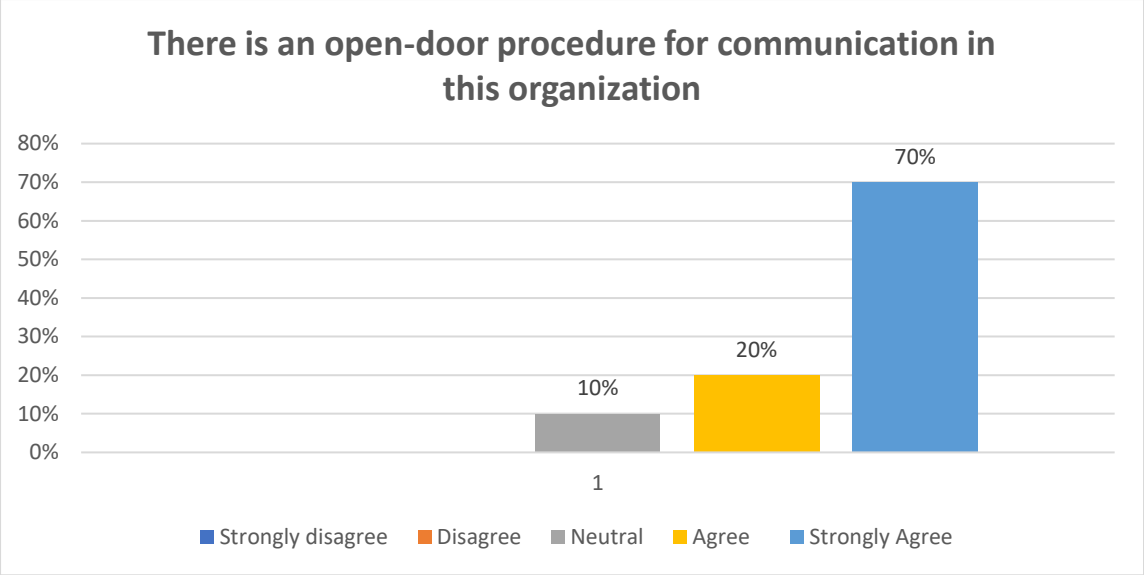


Figure 11.Open door communication chart

Source: own construction

It would appear that the majority of the respondents strongly agree that the company allows their employees to address issues or any concerns. A total of 90% of the respondents (20% agree and 70% strongly agree) agreed that the organisation has an open-door procedure, which basically tells us that the organisation treats the majority equally and listens to the majority of the company as well. Only 10% of the respondents were neutral, which suggests that indeed the company is not restrictive when it comes to communication.

Statement 2: In the organization there are programmes aimed at addressing language barriers.

Response: Many organizations overlook the role communication barriers play in the project management world. As a result, this contributes to the overall failure of the project as some project team members do not understand the vision and instruction thoroughly due to barriers. This is where the programmes aimed at addressing these barriers come in to assist employees to deal with barriers and eliminate these barriers for better communication and comprehension. The responses are shown below in figure 12.

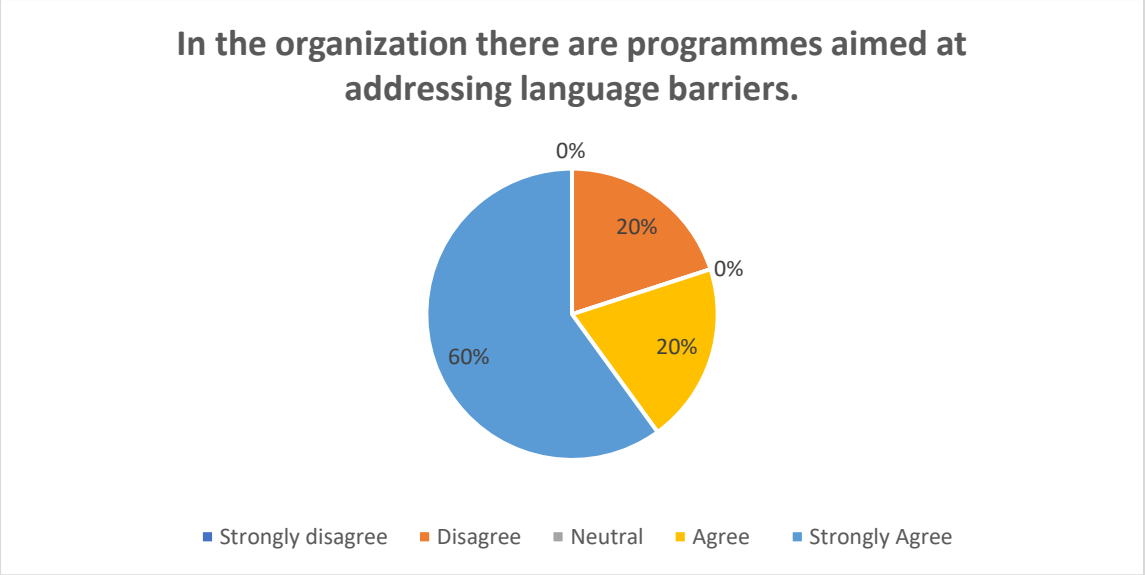


Figure 12.Programmes aimed at addressing language barriers

Source: Own construction

A total of 80% (60% strongly disagree and 20% disagree) indicated that the organisation does not have these programmes to assist the employees with these barriers. This is a very large number of the respondents, and it shows that the company even though they have an open-door procedure for communication they still lack in programmes that address communication barriers directly. Which is concerning as most projects fail due to communication related causes. While on the other hand 20% agrees that they do receive these programmes. This is not a comfortable number for a company that seeks to improve their communication channels and eliminate barriers in the process.

Statement 3: There are opportunities available to me to express my ideas and concerns.

Response: Organizations differ in so many ways. Some organizations believe that only the executives may be afforded an opportunity to speak, suggest and come up with solutions, while other companies understand that not everything should come from the executives – all employees must be afforded a chance to raise their concerns and ideas freely so. This statement seeks to establish if the organization does offer the employees a chance to express their concerns and ideas without making them feel otherwise.

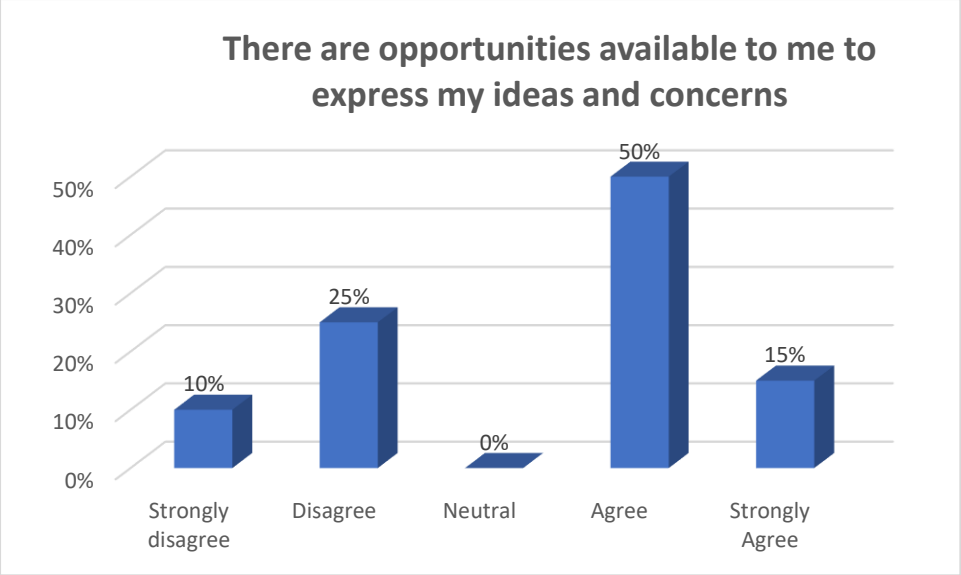


Figure 13.Opportunities

Source: own construction

A high percentage of individuals strongly agree and agree (65%) that the company allows them the opportunity to express their ideas and concerns. While only 35% of the respondents felt like they are not afforded the opportunity.

This is good on the organizations side because it allows everyone to contribute and suggest solutions to any problems. This makes employees feel special and needed which boosts their confidence and work ethic. However, the percentage of individuals that disagreed are alarming as well, this means that these opportunities are not yet fully exposed to everyone there are employees that are given the platform and this needs to be addressed.

Statement 4: English is the most used language in the organization

Response: In South Africa there are 11 official languages, therefore some companies just because they have a certain majority that speaks the same language, they will enforce that language and address it to all employees even if some do not understand. This is very unfair, this statement sought to establish if the universal language that we are supposed to communicate with in organizations is used or not. The respondent's views are illustrated in figure 14.

Figure 14.English as the most used language

Source: own construction

A total of 70% agreed and strongly agreed that indeed English is the most used communication language in their organization. While 20% of the respondents disagreed with the statement. This shows that there is a room for improvement from the management side to get this right. 10% of the respondents were neutral to this statement.

Statement 5: Conflict in the workplace is a major contributing factor in communication barriers

Response: There are always disagreements and conflicts in the workplace. It is the role of management to manage, address and resolve conflicts. However as much as the superiors are in charge in ensuring that these are resolved it is also the team's duty to behave correctly and be matured. Therefore, this statement seeks to understand if conflicts have a contribution towards communication barriers and ultimately the project delivery. The views of the participants on this issue are illustrated in figure 15.

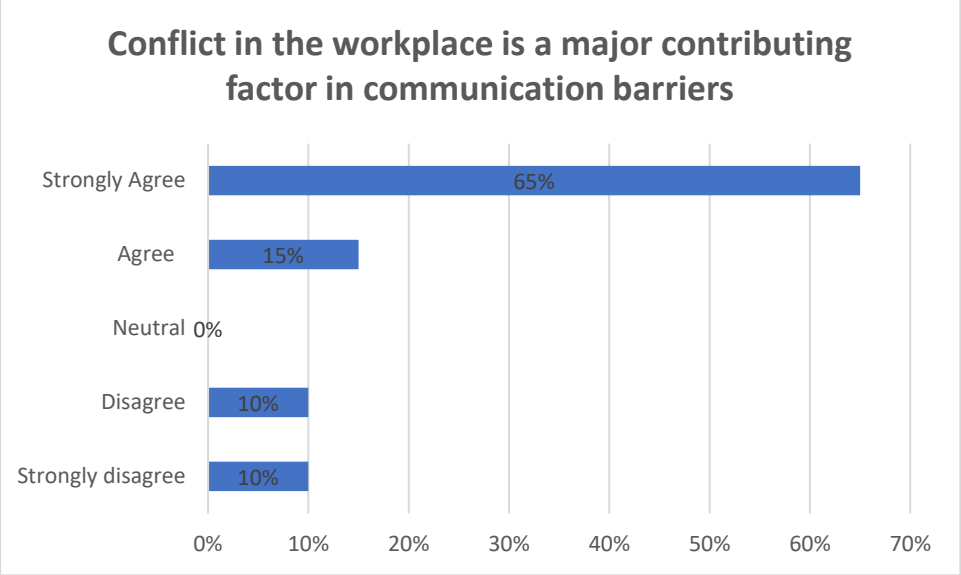


Figure 15.Conflict as a major barrier

Source: own construction

A total of 80% respondent's strongly agrees and agreed that conflicts is one of the major contributing factors towards communication barriers and ultimately affect the project delivery. Only 20% of the respondents indicated that conflicts are not a major contributing factor to communication barriers.

Statement 6: You are satisfied with the ways of communication across the organization

Response: Each organization has a way of communicating, this changes from organization to organization. This statement sought to find if the participants were satisfied with the current method of communication that the company adopts. This will allow the employer to reflect and improve should there a need to do so, please see the views of the respondents illustrated in figure 16.

Figure 16.Overall communication in the organization

Source: own construction

60% of the respondents (45% disagree and 15% strongly disagree) shows that they are not satisfised with the current communication across the organization. This is an alarming number and shows that there is a massive room for improvement in the organization's communication structure/method. While 40% of the respondent's agree and strongly agree that they are satisfied with the current ways of communications across the organization.

Statement 7: There is good communication between people in different areas of the company

Response: Collaborative work is absolutely critical in project delivery. In this statement the researcher sought to find out the stance of the participants in terms of communication across different areas and departments. Successful project management includes a number of departments it is a collaborative effort. The results of this statement are showed below in figure 17.

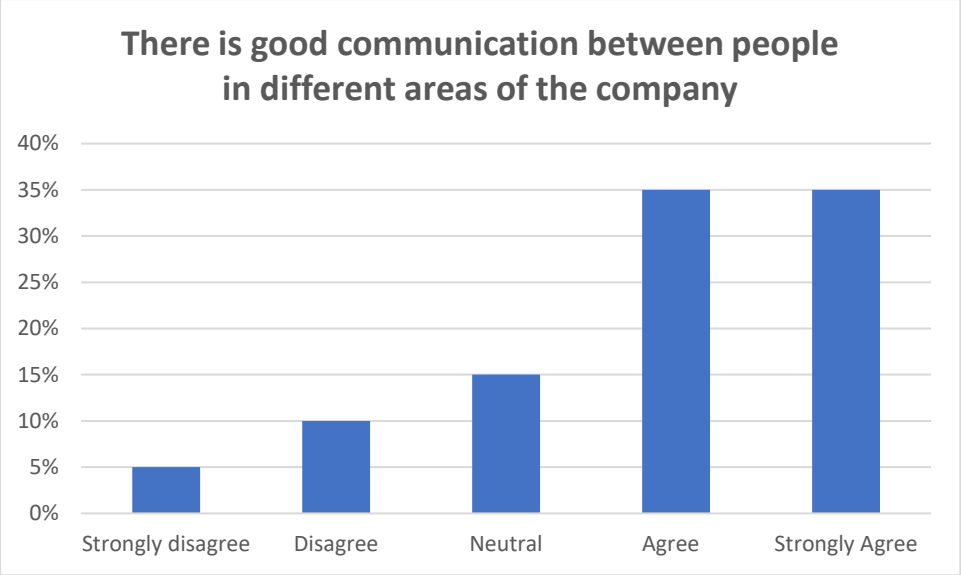


Figure 17.Communication between departments

Source: own construction

The above graph shows that 70% of the respondents agree and strongly agree that there is adequate communication amongst departments, this is a good number and trait for the business as this increases the chances of a successful project. This allows teams from a different area to be comfortable with asking questions and seeking help in other areas just so they can deliver the project. Only 15% of the respondents strongly disagreed and disagreed with this notion. Which shows that there is a room of improvement.

Statement 8: I am kept well informed about company plans and progress

Response: Companies make progress and create plans for every year this is for growth and driving the company strategy. The statement sought to find out if the respondents were kept well informed in the plans and progress of the company. This helps in ensuring that the team understands their role and how they fit into the organization. Sharing progress, makes it easy for the workers to understand where they need to improve so that in projects, they do not get surprises. The data of the respondents is depicted below in figure 18.

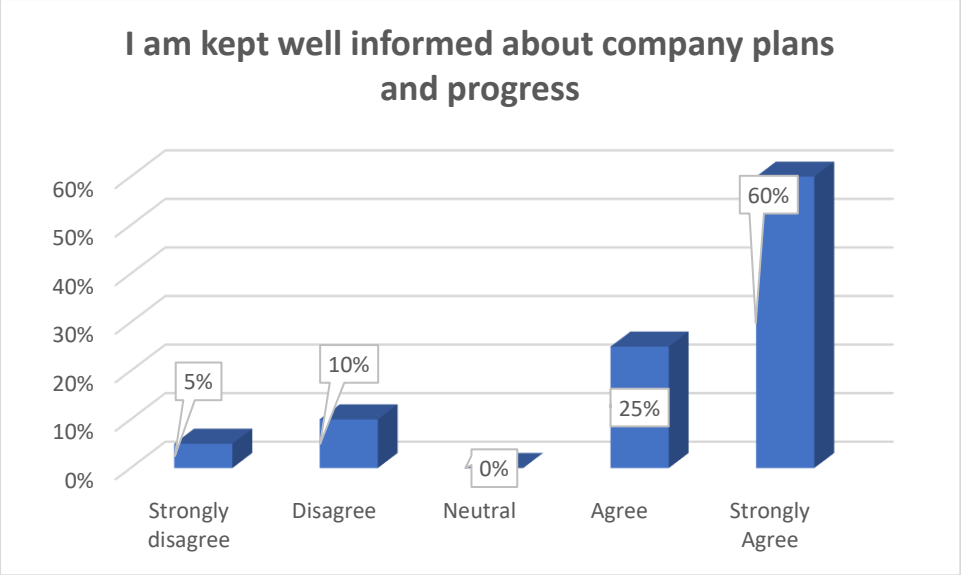


Figure 18.Keeping the team well informed

Source: own construction

60% of the respondents strongly agree and 25% agree that they are kept well informed about the company plans and progress. While 15% of the respondents disagree (5%) and strongly disagree (10%) that they not are not kept well informed.

Statement 9: Verbal communication is not necessary; I know what to do

Response: In this statement the researcher sought to understand where the respondents stand with regards to verbal communication. Verbal communication is very important, this sought to see how many respondents prefer verbal communication and how many respondents know exactly what to do even without being told. The result from the respondents is illustrated below in figure 19.

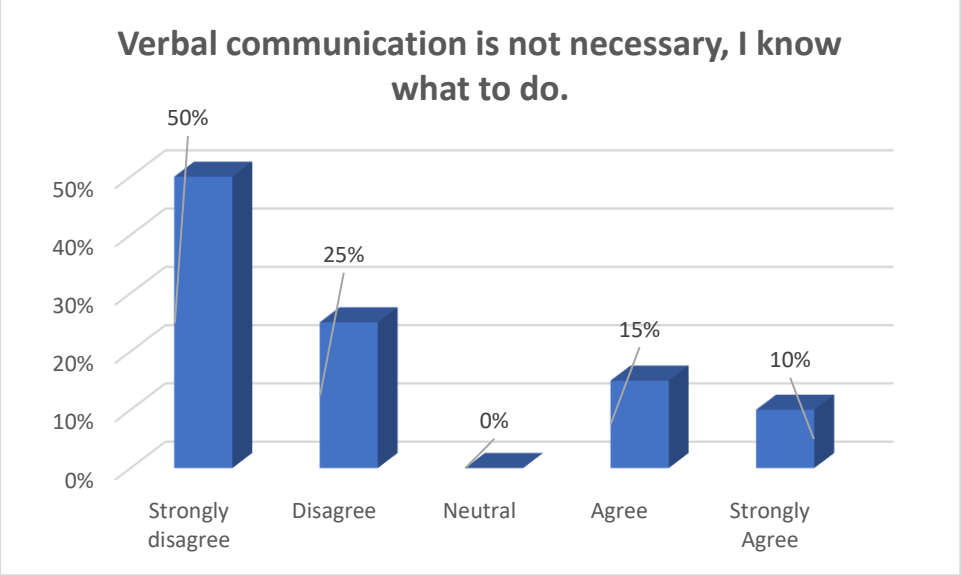


Figure 19.Verbal communication necessity

Source: own construction

A total of 75% respondents disagrees (50% strongly disagree and 25% disagree) that verbal communication is not necessary. These respondents suggest that verbal communication is key and necessary so that all parties know what to do. Whereas 25% of the participants believe that verbal communication is not necessary as they already know what to do. However, this shows that most participants believe that verbal communication is necessary to eliminate any gap and assumptions.

Statement 10: Email is the best communication medium, which does not possess barriers.

Response: There is a number of communication mediums that are used in the corporate world. This statement seeks to find out if the participants believe that email is the best communication medium which does not possess any barriers provided that email leaves evidence of what you said in a form of history which can be presented unlike verbal communication. The data collected in relation to this statement is illustrated below in figure 20.

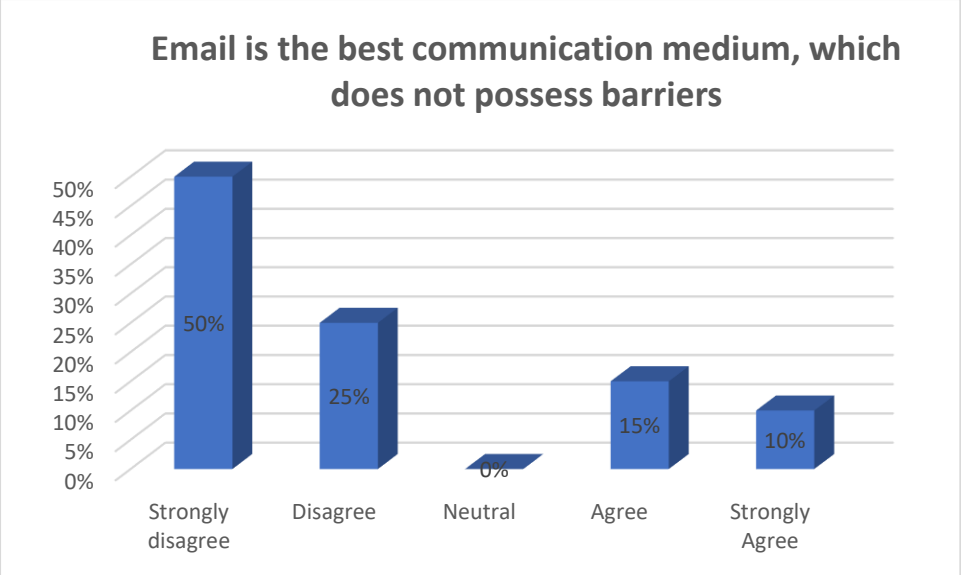


Figure 20.Email as the best communication medium

Source: own construction

75% of the respondents disagree (50% strongly disagree and 25% disagree) that an email is the best communication medium which does not possess any barriers. While the rest of the respondents indicated that email is the best email communication medium which does not possess barriers. This statement is subjective and differs from person to person. However, the results suggests that a very high number of the respondents disagree with the statement and feel like emails have barriers and they actually do possess communication barriers.

Statement 11: I personally prefer to express myself in my home language when explaining complex scenarios

Response: South Africa is country that is multi lingual and has 11 official languages, English is the common language. It is not a secret that language is a huge barrier as some individuals only learnt English in University and some in the industry. On this statement the intention was to identify how people feel about expressing themselves in their home language in complex situations. The result of this statement is outlined below in figure 21.

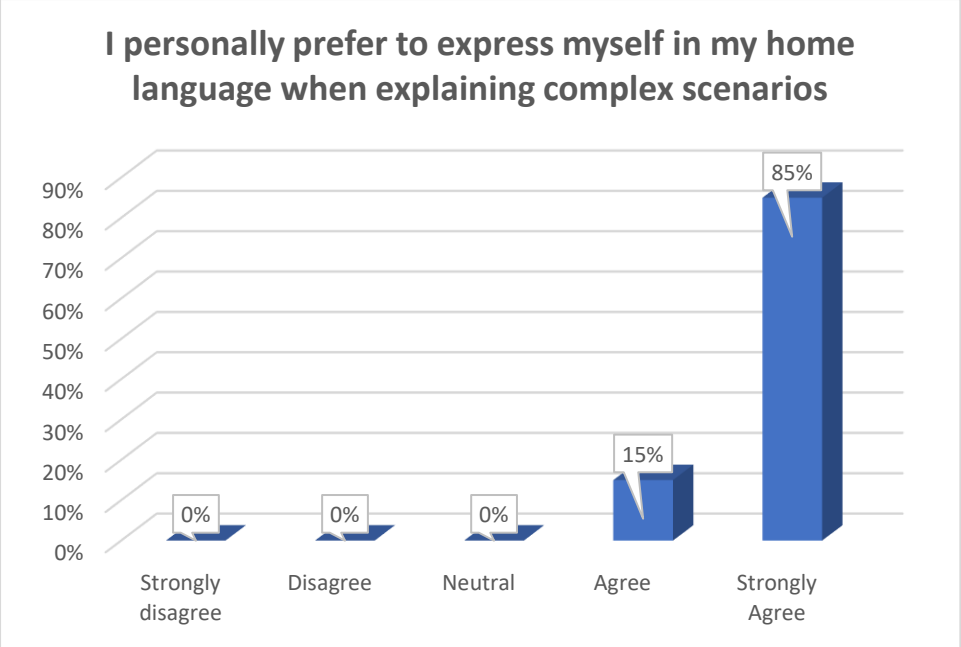


Figure 21.Home language

Source: own construction

A total of 100% respondents (15% agree and 85% strongly agree) that they prefer to express themselves in their home language. As much as this a good result however in an organization with multiple different individuals from different backgrounds this will be difficult as someone would need to translate for others as well. However, this is a good observation of how the participants feel about expressing themselves in complex scenarios.

Statement 12: Proper communication allows team members to contribute and suggest the best solutions

Response: This statement sought to investigate if the participants believe proper and open communication assists the team members with being confident with providing and suggesting solutions to issues.

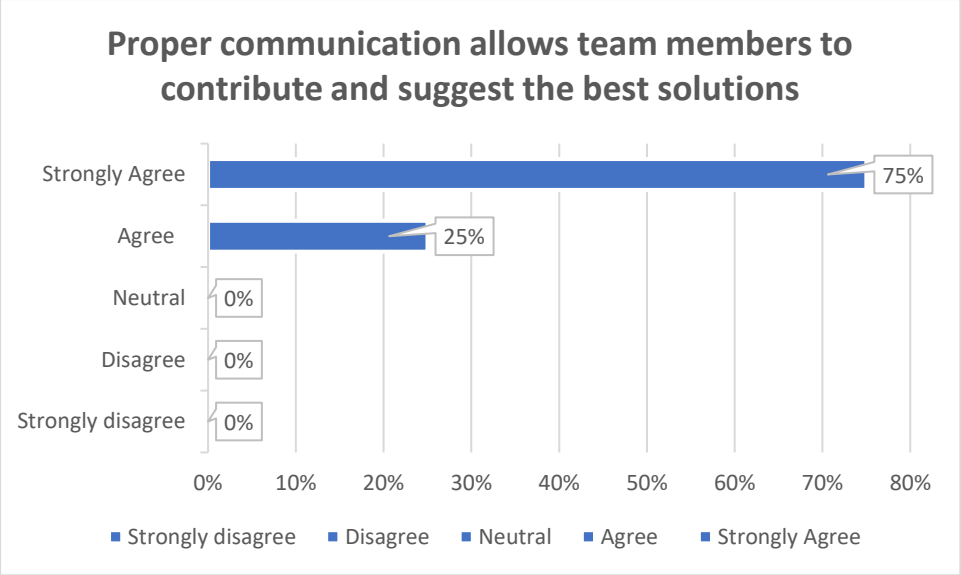


Figure 22.Proper communication

Source: own construction

75% of the respondents strongly agree that proper communication allows team members to contribute and suggest their ideas. Further to this 25% more participants agreed with this statement. This shows that team members want to be included in the communication.

Statement 13: Meetings are generally useless to me

Response: Meetings are generally one platform that organisations use to address concerns and plan their scope of work budget etc. However, some individuals feel otherwise about this method, therefore the researcher was trying to understand how many individuals oppose this statement. The results are shown in figure 5.17 below.

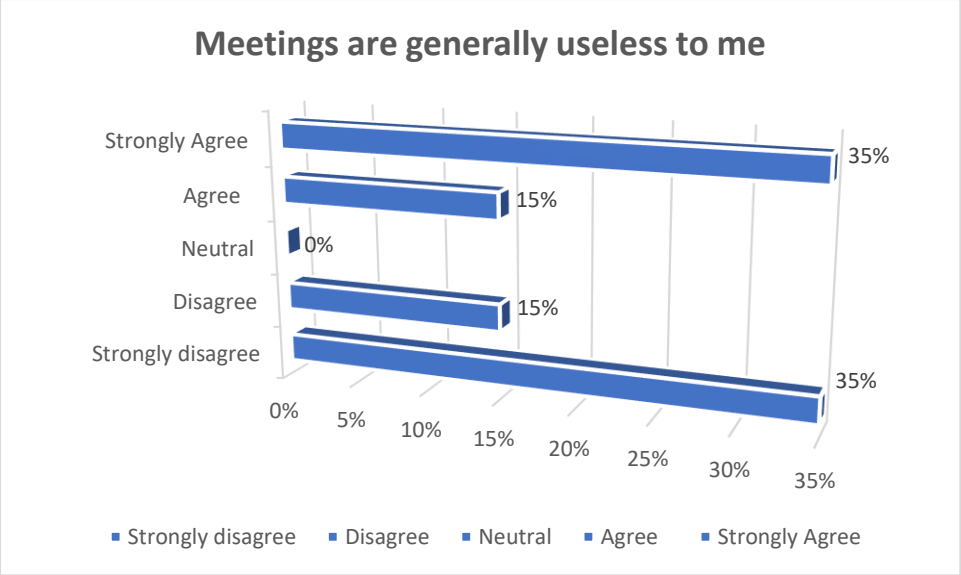


Figure 23.Meetings

Source: own construction

50% of the respondents advised that they find meetings to be generally useless while the other 50% respondents disagreed with this statement. They find meetings to be helpful, quite effective and needed.

Statement 14: Lack of transparency and trust is a major communication barrier.

Response: Transparency and trust is very important in any place. This statement seeks to investigate how much the lack of transparency and trust affects communication and contributes as a major communication. The results collected are shown in the figure 24 below.

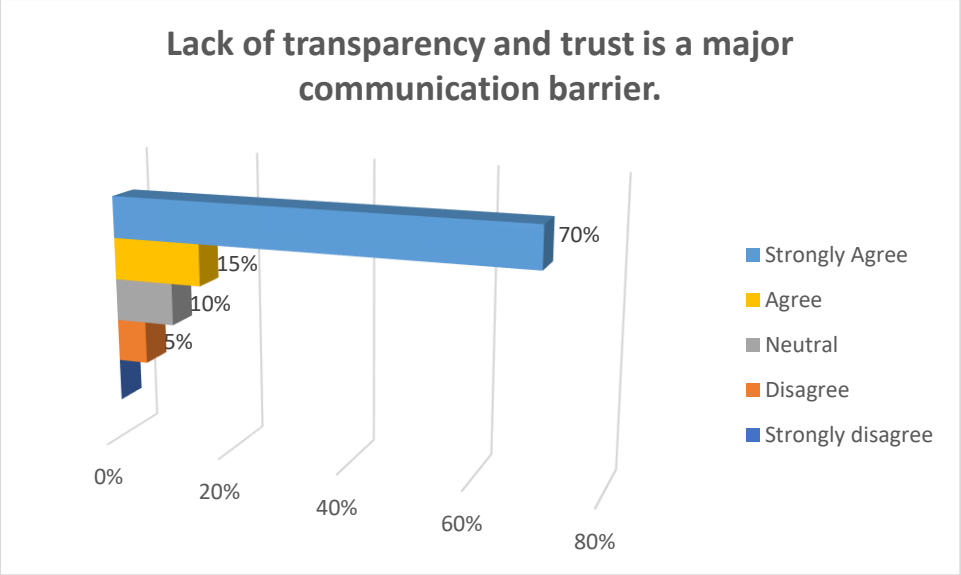


Figure 24.Transparency

Source: own construction

85% of the respondents agreed (70% strongly agree and 15% agree) that lack of transparency and trust is a major communication barrier in this selected construction company. While 10% of the respondents were neutral and 5% of the respondents disagreed. This is by far the biggest communication according to this data.

Statement 15: Allowing team members to share their ideas freely is a crucial part in good communication

Response: Companies have different approach in terms of communication access the organization. This statement seeks to determine the importance of a freedom of sharing ideas openly.

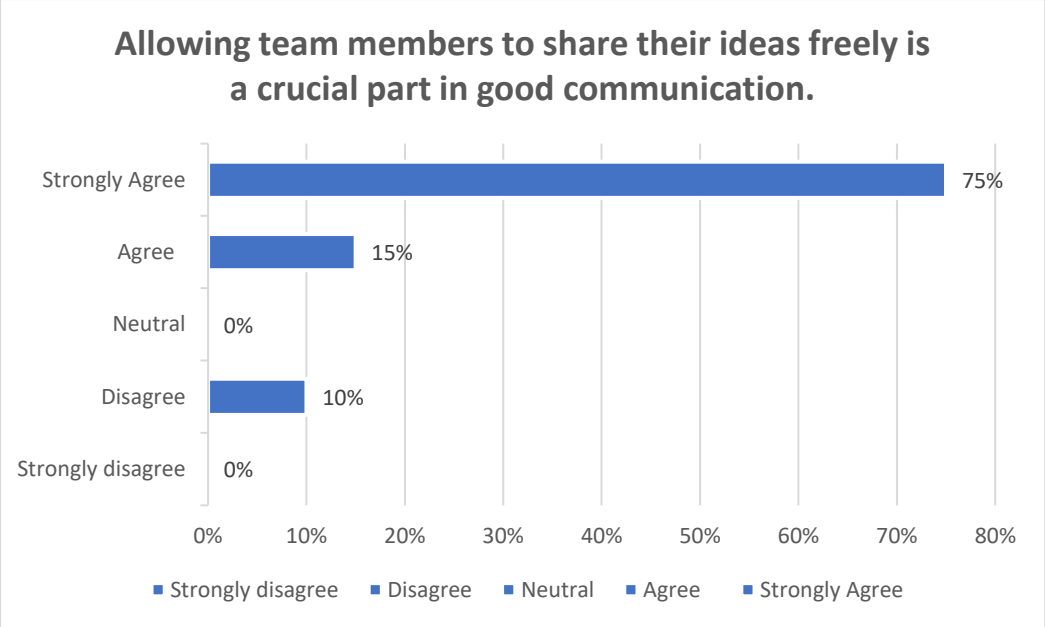


Figure 25.Sharing ideas

Source: own construction

75% of the participants strongly agree with the statement, 15% of the participants further agree to this statement as well. While 10% of the participants disagree. The difference is massive and clearly indicates that 85% of the participants agree with this statement thus makes sense as this creates a comfortable work environment.

Statement 16: Our projects require limited communication and more action.

Response: Construction projects processes are different from IT, Finance etc projects. Therefore, in this statement we would like to determine the level of communication required in their projects. The results of this statement are shown in figure 26.

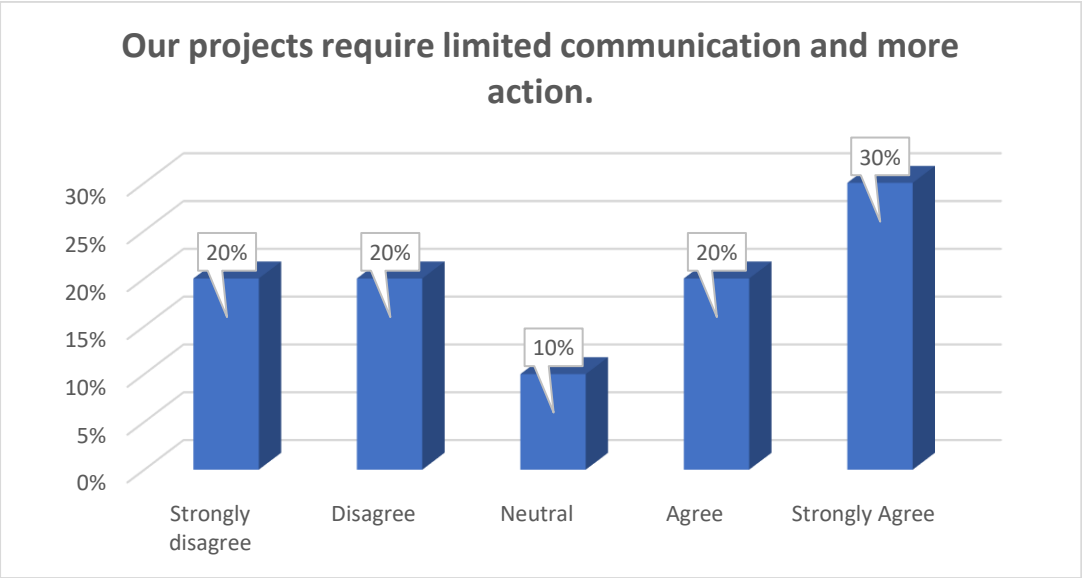


Figure 26.Project communication

Source: own construction

50% of the respondents (20% agree and 30% strongly agree) while 10% were neutral. 40% were disagreeing with this statement (20% strongly disagree and 20% disagree). Half of the respondents agree that their projects require less talking and more action.

Statement 17: General support and care (translation, explaining further etc.) of one another is key to delivering a successful project.

Response: In project delivery there are non-technical skills such as general support and care of one another. In this statement the researcher was trying to determine the impact these skills have on delivering successful project.

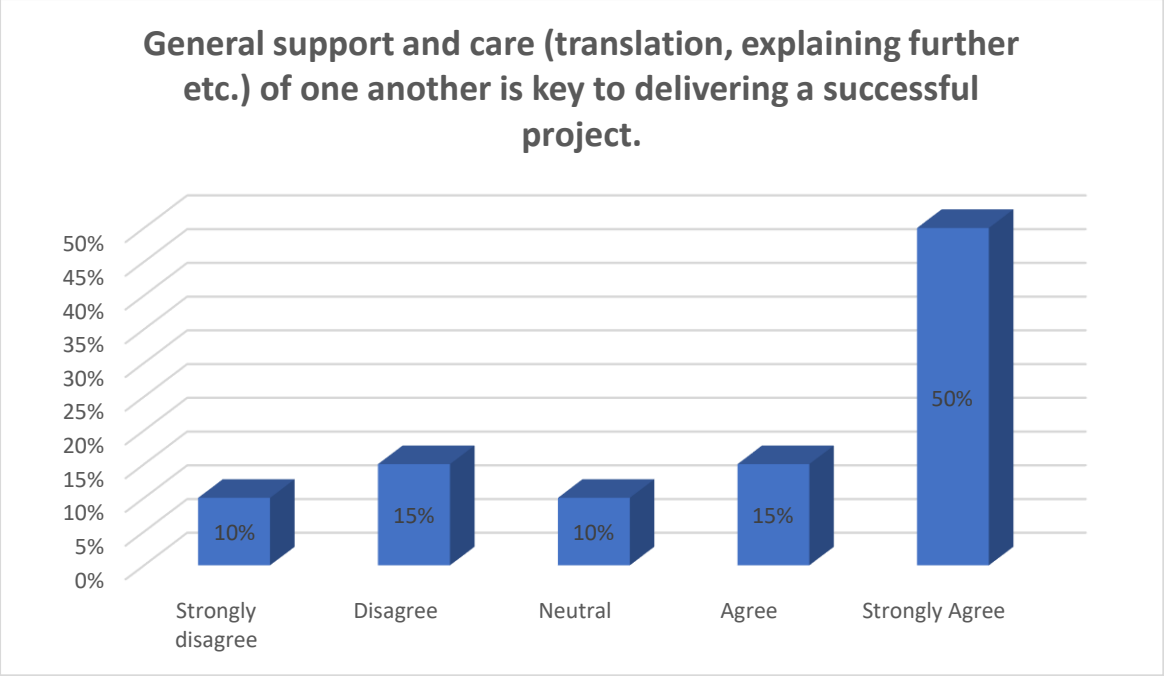


Figure 27.Support

Source: own construction

65% of the participants agree (50% strongly agree and 15% agree) that the non-technical but humane skills are key to delivering successful projects. While 25% respondents disagree with this statement. However, a considerable number of the respondents depicts that a project tends to be delivered successfully within the selected construction company when the team members support one another by either explaining or translating whatever the other party doesn't know.

Statement 18: Communication starts at the top and filters through the rest of the project team.

Response: Communication needs to start somewhere; in this statement we are trying find out where the communication begins in the organization and if that communique reaches all the stakeholders in the organization. The result of this study is show below in figure 28.

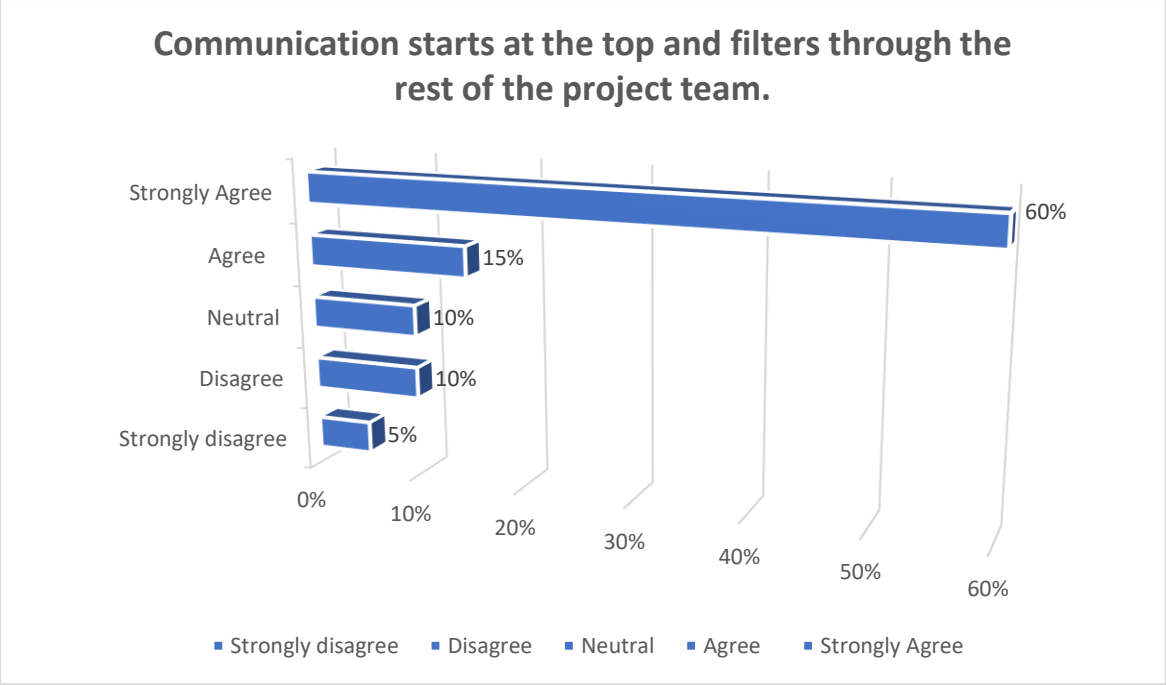


Figure 28.Communication from the top

Source: own construction

60% of the participants agree that in this organization communication commences from the top and filters through the project team. However, 15% of the respondents disagree with this statement. Be that as it may, 75% (agree and strongly agree) respondents is a substantial number of respondents, and we can comfortably conclude that communication in this organization stems from the top.

Statement 19: I hardly ever receive unreliable information from my manager/supervisor.

Response: Information received from the management is critical and often than not it is an information that is decision making. This statement seeks to find out the reliability of the information received from the management team. Data has been collected and is shown below in figure 29.

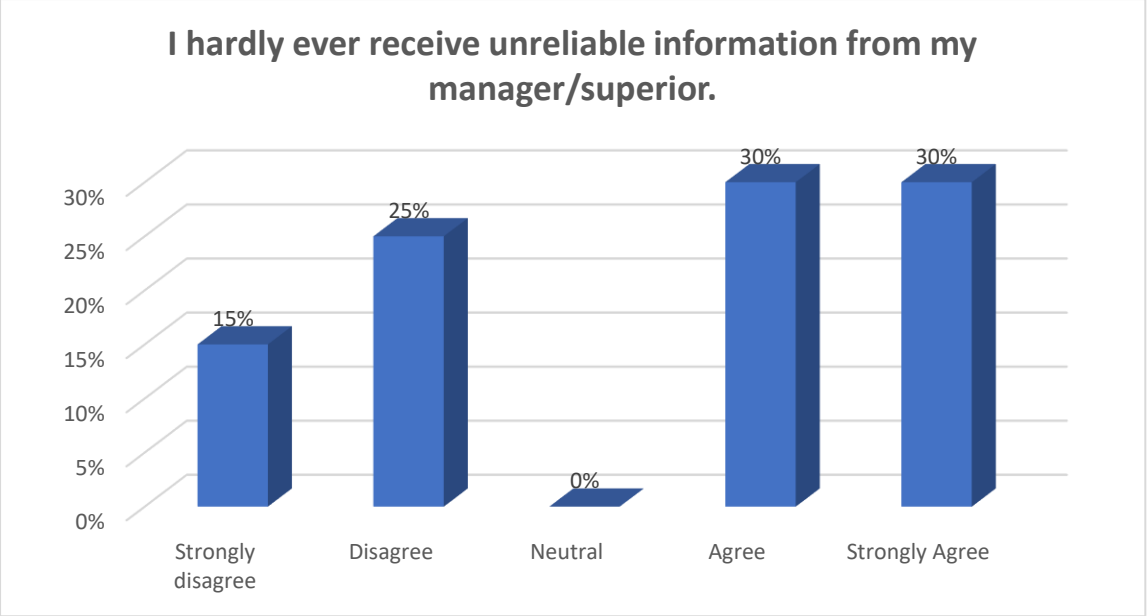


Figure 29. Receiving of reliable information from the manager

Source: own construction

60% of the respondents agree (30% strongly agree and 30% agree), that they receive reliable information from their superiors. While 40% (20% disagree and 20% strongly disagree). Therefore, more than 50% (60% actual %) agree that their superior provide them with reliable information which is good for project delivery and trust in the team.

Statement 20: I am kept well informed about my work groups plans and progress

Response: This statement seeks to understand the position the selected company holds when it comes to updating the employees. This is important because in project environment teams always need to know where the rest of the group is so that everyone aligns and complete their tasks timeously. Without causing any delays to the rest of the group. Data has been collected and is shown on figure 30 below.

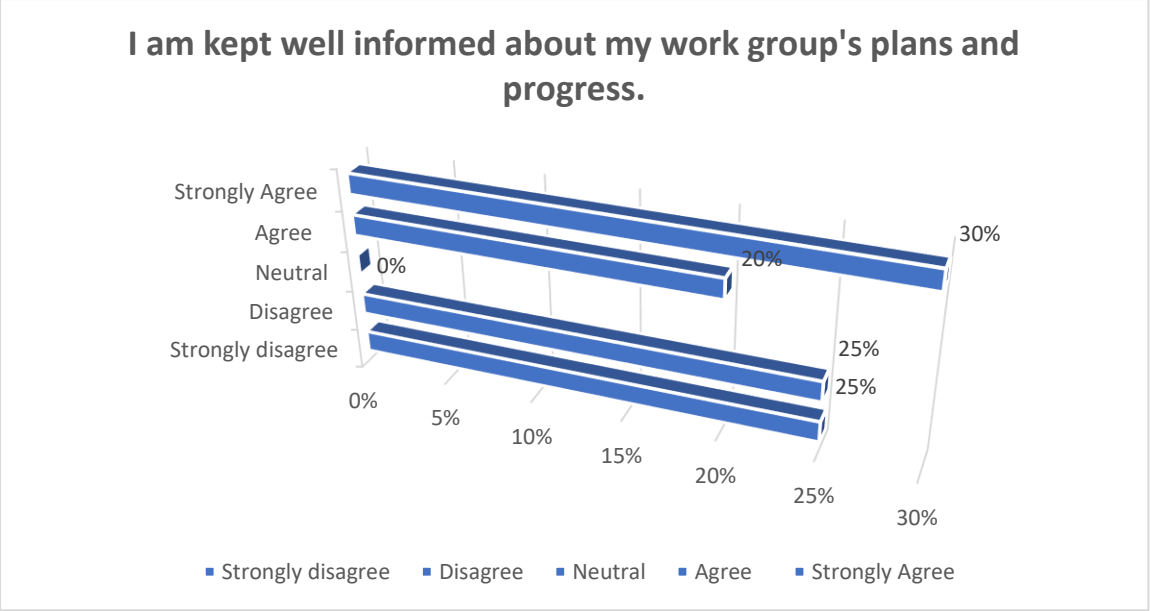


Figure 30.Keeping the team members updated with progress and plans

Source: own construction

50% of the respondents advised that they agree with this statement as they feel like they always know the progress and the plans the company has the groups. However, another 50% totally feels different from this as they advised that they are not kept well informed about the progress and plans to be expected. This clearly shows that there is work required from the company's perspective in ensuring their employees feel important and are updated with the necessary feedback regarding their work progress and company plans.

Statement: WhatsApp messenger is one social network that makes communication easier and fast

Response: Over the years communication mediums have evolved and many more were created. In the professional world almost, every employee has a smartphone which has the internet, and which allows them to have applications such as WhatsApp. Which only needs data and a number to function and there are also groups which can be informed in these groups. In this statement the researcher thought to determine how effective and how people find communicating in work WhatsApp groups. The results of this statement have been collected and are shown below in the following figure which is figure 31.

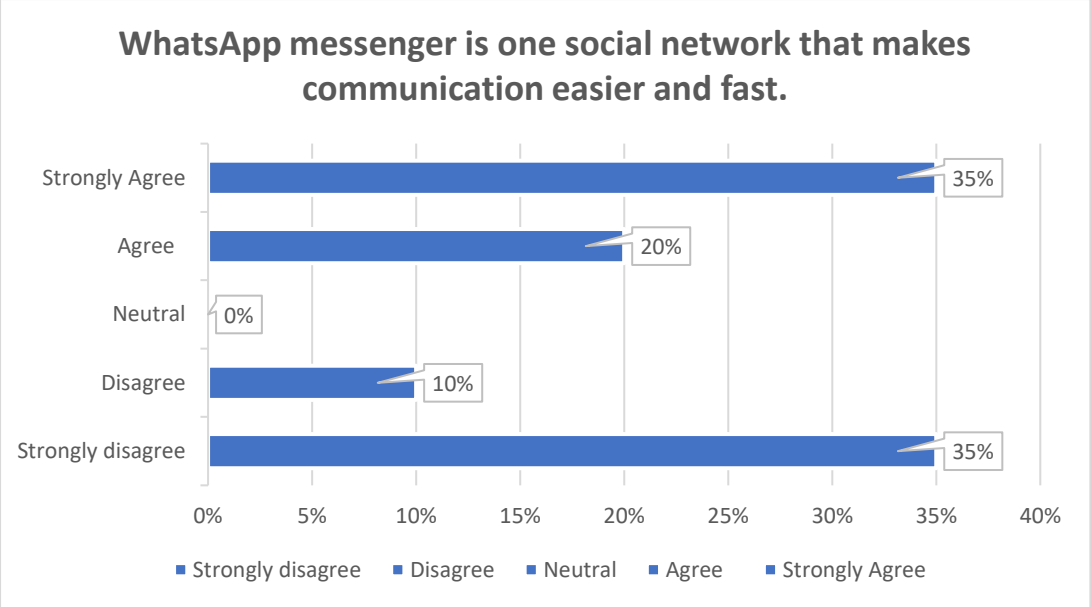


Figure 31.WhatsApp Messenger

Source: own construction

35% of the respondents strongly agree while 20% of the respondents agree that WhatsApp messenger is a social network that makes communication easier and faster. This is more than 50% of the respondents which shows that a number of employees are using WhatsApp and it is working for them. On the other hand, 45% respondents disagree with this statement. Those who are fluent in English are more likely to use WhatsApp than those who are less fluent.

Statement: Cultural differences and language are the major contributing factors in communication

Response: Across organizations there are multiple different employees from different cultural backgrounds. This organization is very diverse, this statement sought to find out if the cultural differences do play a role in communication barriers. Data collected is shown below on figure 30.

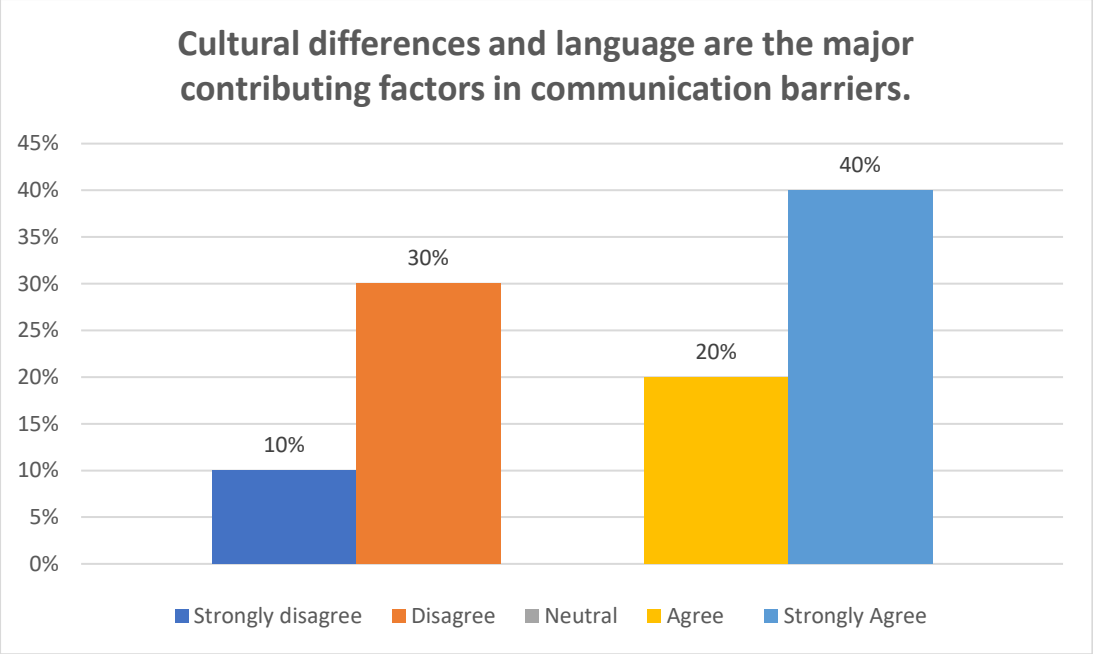


Figure 32.Cultural differences

Source: own construction

40% of the respondents disagreed with this statement (10% strongly disagreed and 30% disagreed). While more than half of the respondents agreed with this statement 60% to be exact. 40% strongly agree and 20% agree. This depicts that beyond the known communication barriers, people's backgrounds can also form a certain barrier as in some backgrounds some people were only taught English when they started working therefore, they have limited knowledge.

5.2.3. Section C: Open-ended question

To assist the research by extracting any other information that may be known to the respondents, but the information may have been left out due to a line of questioning. This section, therefore, requests the respondents to provide some information relating to the study as they see fit and understand. This category makes specific reference to the respondents' general understanding of communication barriers, how they affect project delivery as well as how can these barriers be fixed. Very few of the respondents filled in this section.

5.2.3.1. Suggest ways that your organization could do to address and eliminate communication barriers within the organization and mainly projects team.

- Most of the respondents indicated that workshops would work and assist them in developing their communication.
- Secondly others suggested a neutral messaging channel for the company.

It is important for a company to understand its employees struggles in ensuring that the company keeps its staff and secondly ensures that the employees understand what is required from them. Therefore, it is important for the company to conduct these workshops to work on the barriers this will result in the teams feeling empowered and understand requests without needing more time which in turn saves the companies time and resources.

5.2.3.2. Suggest the communication channels that have the very least communication barriers.

- A number of respondents suggested face-to-face meetings.
- Written communique

Written communique can always be referenced to and once can always re-read the message. Face-to-face meeting allows for engagements between the team. This could minimize project failures and communication barriers as one could get an explanation immediately and will then understand what is required from their side.

5.2.3.3. Suggest how the project team should communicate to ensure that they deliver the desired goal effectively.

- Face to face meetings appeared more on the results.
- A few more respondents suggested that a meeting whether it is online or not. The host should ask around everyone in the meeting if they understand and ensure that all instructions are clear.

From the above it clearly shows that the employees prefer verbal communication and most importantly face to face. Face to face meetings one is able to see facial expression, hand gestures and tone of the speaker.

5.2.3.4. Please make an example of how you once felt like you are being left out simply because you could not understand the communication.

- Respondents advised that they were given warnings a lot of times for not actioning instructions which they did not understand due to the barriers.
- In important meetings – some respondents advised that they were not included.

The above statements indicated that barriers really need to be addressed decisively as these could lead to a dismissal not because the individual was incapable however due to them not fully understanding the request. As much as the company should try and address this the employees should also make means to try and meet the employer halfway and be eager to seek assistance and clarity whenever it is needed.

5.3. Conclusion

The participants in this study responded to the questionnaire and provided their perspectives on the open-ended questions. The chapter focused on the respondents and required them to be honest so that the objectives of this study are not compromised. The results shows that there is support generally from the team to one another, the company and its employees can only go upwards and onwards on this trait. The team allows and gives the team members space to give their opinions, suggestions, and possible solutions. However, Lack of trust is a major concern as some feel as though they are not trusted and this affects the projects process and completion.

Chapter 6: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1. Introduction

Research objectives speak to the expectations from the research and what was intended by the research. In this survey the objectives were stated as intentions to identify the role played by communication barriers in the project execution processes. This would assist with establishing the contribution of communication to successful project execution. Since communication is a critical component of effective leadership, it became the focus of attention. The organisation under survey has put much effort into technical skills, but, as alluded to in the literature review chapters, communication barriers can hinder the project delivery process a lot. The research seeks to identify the role communication barriers play in the process and how these can be addressed.

6.2 Research design and methodology

A combination of qualitative and quantitative was used to conduct the research using a structured questionnaire with three sections. The research instrument was designed based on the literature reviewed, on the basis of which the empirical research was conducted. The research instrument was administered personally to maximise on the return rate and assist respondents where they needed to get explanation and clarity. Out of the desired number of respondents 80% of the sample frame and was considered adequate for the purpose. Expenses and accessibility were the critical factors. The instrument was tested for validity and reliability by a statistician and the reconstructed document was used for the survey.

6.3. Discussion of the findings (Key results)
Section A: Biography

This assisted in ensuring that the researcher has the correct individuals who were fitted into the expected population characteristics. This section is followed by the Likert scale. Thereafter this followed by the open-ended questions which included 4 questions. On the first section we have asked which communication medium does the respondents find extremely useful. 77% of the respondents indicated that verbal communication is more effective and useful for them.

Conclusion: The statics on the effective communication tools suggests that people are more comfortable when they are communicating verbally. This is followed by email messages.

Recommendations: It is hereby recommended that the company organizes and priorities verbal communication and facial meetings.

Question 2: It is crucial that everybody understands who is responsible to schedule project meetings this creates consistency and stability.

6.2: Who is responsible for scheduling meetings and announcements?

Conclusion: the respondents indicated that the administrators schedule the most meetings. Followed by the technicians.

Recommendations: this has to be kept like this, the administrators should be responsible for meetings and announcements as well as taking minutes of the meeting.

6.3.1. Discussion of the Likert scale (Section B)

A Likert scale is a psychometric tool which is done using questionnaires for survey research; this is also referred to as a rating scale. The scale enables respondents to indicate the level of agreement or disagreement with a statement based on the literature reviewed. The level of agreement is on a symmetric agree-disagree scale, the range assists in capturing the intensity of the perceptions, beliefs or attitudes of the respondents towards the statements. This Likert scale is based on a scale of 1 to 5, with 1 = strongly agree. 2 = agree, 3 = neutral, 4 = disagree and 5 = strongly disagree.

Question 3: this was intended at investigating if the company does have programmes and workshops that aims at addressing language barriers as we all know that construction is an industry that possess multi lingual individuals and multi-cultural employees.

6.3: In the organization there are programmes aimed at addressing language barriers – source: own construction

Conclusion: The data depicts that 60% of the respondents totally disagreed with this statement. A total of 80% respondents disagreed with this statement.

Recommendation: It is clear that there is a huge gap for the company when it comes to training, workshops and programmes to immerse and assist the staff. Therefore, it is highly recommended that the organisation launches programmes that will address the mentioned concerns above.

Question 4: This statement is aimed at investigating and determining the extent to which cultural and language difference contribute to communication barriers.

Conclusion: In total 60% of the respondents agreed with this statement while the 40% disagreed. This is close however there is an indication, and we can conclude that 60% clearly disagreed.

Recommendation: It would be advisable for the company to address and openly talk about these as this would make employees comfortable and be able to suggest ways in which these can be improved.

Question 5: When this statement was made, the intention was to determine and investigate whether the organization has open communication policy where everyone understands and knows what is happening in the company.

Conclusion: 85% of the respondents advised that they are kept well informed about the company plans and progress.

Recommendation: This is a very good result for this company and the company must keep it up as this is good for communication. This makes things easy for the employees to determine where and how they fit into the organisation as well as how they fit into the plans going forward.

6.4. Limitations

Limitations are factors that were affecting and limiting the research in any way. These factors do not stop the whole research project however they do limit the research from exploring and digging more deeply. This study was conducted in one company, and this was a limitation as that means that the results are based on one company. This research was specifically looking at Cape Town which is a limitation because covering more and many cities would provide better and more accurate results. Companies do not easily grant permission for researchers to research their companies, this makes it very difficult to obtain consent and thus to get all the information you want.

6.5. Conclusion

The selected construction company proved to have good strategies in place which the employees do appreciate. Open door policy is one of these strategies which

allows any employee to be able to approach and seek assistance. The second good strategy they are currently doing well is giving opportunities to its employees to express their ideas and concerns freely so. This is good for problem solving as some solutions comes from the least expected people. This also boosts the team morale, as everyone will feel important and needed and therefore contribute positively to the betterment of the team or project. Cross departmental communication is crucial, the respondents acknowledged and advised that it is good. However, there was a handful of respondents (15%) who disagreed with this, this indicates that the selected construction company has work to do in improving this aspect.

While the selected construction company has good strategies in place there are some aspects which needs to be improved. The respondents felt like there were not enough programmes aimed at addressing language barriers. South Africa is a diverse country with 11 official languages. English is the most spoken language in the company therefore it would be a good idea for the company to enrol some of their employees to English classes this will assist in eliminating communication barriers while you are also improving the employee's personal English skills.

6.6. Chapter summary

The goal of this study was to determine the role of communication barriers in project execution. The PMBOK classifies communication as one of the ten knowledge categories, and it is thus thought to be crucial in project execution. The outcomes of this study are based on the employees' perceptions and experiences with the interactions they have amongst themselves, as well as throughout the company and project environment. Communication barriers have been identified (based on the research) as a vital component that has a significant impact on project completion. Language barrier is among the top communication barrier as people come from different backgrounds and cultures. This is barrier because a lot of these participants indicated that they prefer verbal communication as it eliminates the reading and writing portion. However due to cultural and language difference the language a massive communication barrier.

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APPENDICES:

Appendix A: QUESTIONNAIRE

Communication barriers limiting successful project execution during construction at a selected site in the Cape Metropolis.
You are kindly requested to be as objective as you possibly can be, do not put your name, simply respond to the questionnaire. The subject of the study wants to know more about communication barriers within the construction industry and specifically how these can be addressed and resolved. Your identity is protected, you may decide to stop the questionnaire mid-way, results will be given to as percentages, not individual responses.

APPENDIX A: BIOGRAPHY

Please tick the applicable boxes

1. **What is your position in the organisation?**

Administrator	Bricklayer	Electrician	Plumber	Other

If other, please specify:

……
……

2. **How many years have you been in this position?**

0 – 2 years	3 – 5 years	6 – 8 years	9 + years

3. **Which communication medium do you find extremely effective/useful?**

Email message	Verbal (In person) communication	Telephonic calls	Web discussion forum

4. **Who is responsible for scheduling meetings and announcements?**

Plumber	Administrator	Bricklayer	Electrician	Other

If other, please specify:

……
……

5. **How often does the company take the employees for course developments?**

Every year	Every second year	Two times a year	Upon request from employee	Never

Appendix B: Likert Scale

Communication across the organization to identify and evaluate which barriers are most likely to influence the project progress and implementation.

KEY: Please rank the importance by ticking the most applicable.

1 = Strongly Disagree || 2 = Disagree || 3 = Neutral || 4 = Agree || 5 = Strongly Agree

	General communication layout in the organization	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1	There is an open-door procedure for communication in this organization.	**1**	**2**	**3**	**4**	**5**
2	In the organization there are programmes aimed at addressing language barriers.	**1**	**2**	**3**	**4**	**5**
3	There are opportunities available to me to express my ideas and concerns.	**1**	**2**	**3**	**4**	**5**
4	English is the most used language in the organization.	**1**	**2**	**3**	**4**	**5**
5	Conflict in the workplace is a major contributing factor in communication barriers	**1**	**2**	**3**	**4**	**5**
6	You are satisfied with the ways of communication across the organization.	**1**	**2**	**3**	**4**	**5**
7	There is good communication between people in different areas of the company.	**1**	**2**	**3**	**4**	**5**
8	I am kept well informed about company plans and progress.	**1**	**2**	**3**	**4**	**5**
	Identifying the most productive communication medium	**0**	**0**	**0**	**0**	**0**
9	Verbal communication is not necessary, I know what to do.	**1**	**2**	**3**	**4**	**5**
10	Face to face meetings brings out the best results.	**1**	**2**	**3**	**4**	**5**
11	Email is the best communication medium, which does not possess barriers.	**1**	**2**	**3**	**4**	**5**
12	I personally prefer to express myself in my home language when explaining complex scenarios.	**1**	**2**	**3**	**4**	**5**
13	Proper communication allows team members to contribute and suggest the best solutions.	**1**	**2**	**3**	**4**	**5**
14	Meetings are generally useless to me.	**1**	**2**	**3**	**4**	**5**
15	Lack of transparency and trust is a major communication barrier	**1**	**2**	**3**	**4**	**5**
	PROJECT'S TEAM MEMBERS COMMUNICATION	**0**	**0**	**0**	**0**	**0**
16	Allowing team members to share their ideas freely is a	**1**	**2**	**3**	**4**	**5**

	crucial part in good communication.					
17	Our projects require limited communication and more action.	**1**	**2**	**3**	**4**	**5**
18	General support and care (translation, explaining further etc.) of one another is key to delivering a successful project.	**1**	**2**	**3**	**4**	**5**
19	Communication starts at the top and filters through the rest of the project team.	**1**	**2**	**3**	**4**	**5**
20	I hardly ever receive unreliable information from my manager/superior.	**1**	**2**	**3**	**4**	**5**
21	I am kept well informed about my work group's plans and progress.	**1**	**2**	**3**	**4**	**5**
21	WhatsApp messenger is one social network that communication easier and fast.	**1**	**2**	**3**	**4**	**5**
23	Cultural differences and language are the major contributing factors in communication barriers.	**1**	**2**	**3**	**4**	**5**

Appendix C: Open Ended Questions

Open Ended Questions

These questions allow the respondent to express their own opinions and feelings.

1. Suggest ways that your organization could do to address and eliminate communication barriers within the organization and mainly projects team.

……
……
……
……
……

2. Suggest the communication channels that have the very least communication barriers.

……
……
……
……
……

3. Suggest how the project team should communicate to ensure that they deliver the desired goal effectively.

……
……
……
……

4. Please make an example of how you once felt like you are being left out simply because you could not understand the communication.

……
……

……

……

Appendix D: Clearance Certificate

Cape Peninsula University of Technology

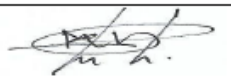
P.O. Box 1906 | Bellville 7535
Symphony Road Bellville 7535
South Africa
Tel: +27 21 4603291
Email: fbmsethics@cput.ac.za

Office of the Chairperson Research Ethics Committee	**FACULTY: BUSINESS AND MANAGEMENT SCIENCES**

The Faculty's Research Ethics Committee (FREC) on **4 May 2021**, ethics APPROVAL was granted to **Dingiswayo Peter Siphamandla (215103769)** for a research activity for **M Tech: Business Administration in Project Management** at Cape Peninsula University of Technology.

Title of dissertation / thesis / project:	**Communication barriers limiting successful project execution during construction at a selected site in the Cape Metropolis** Lead Supervisor (s): Dr L E Jowah

Decision: APPROVED

	3 July 2021
Signed: Chairperson: Research Ethics Committee	**Date**

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the CPUT Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study requires that the researcher stops the study and immediately informs the chairperson of the relevant Faculty Ethics Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, notably compliance with the Bill of Rights as provided for in the Constitution of the Republic of South Africa, 1996 (the Constitution) and where applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003 and/or other legislations that is relevant.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after two (2) years for Masters and Doctorate research project from the date of issue of the Ethics Certificate. Submission of a completed research ethics progress report (REC 6) will constitute an application for renewal of Ethics Research Committee approval.

Clearance Certificate No | 2021_FBMSREC 042

Appendix D: Editing Certificate

GRAMMARIAN CERTIFICATE

MELODY KOZAH PROOF READING SERVICES

10 December 2021

Dear Sir/ Madam

Re: Confirmation of proof reading of thesis for Peter Siphamandla Dingiswayo, Student Number 215103769

This confirms that I have proof read and edited the research study entitled, "*Communication barriers limiting successful project execution during construction at a selected site in the Cape Metropolis*". I have advised the candidate to make some substantial changes before final submission.

Thank you.

Yours faithfully

MELODY RUMBIDZAI KOZAH
Editor
melkozah@gmail.com
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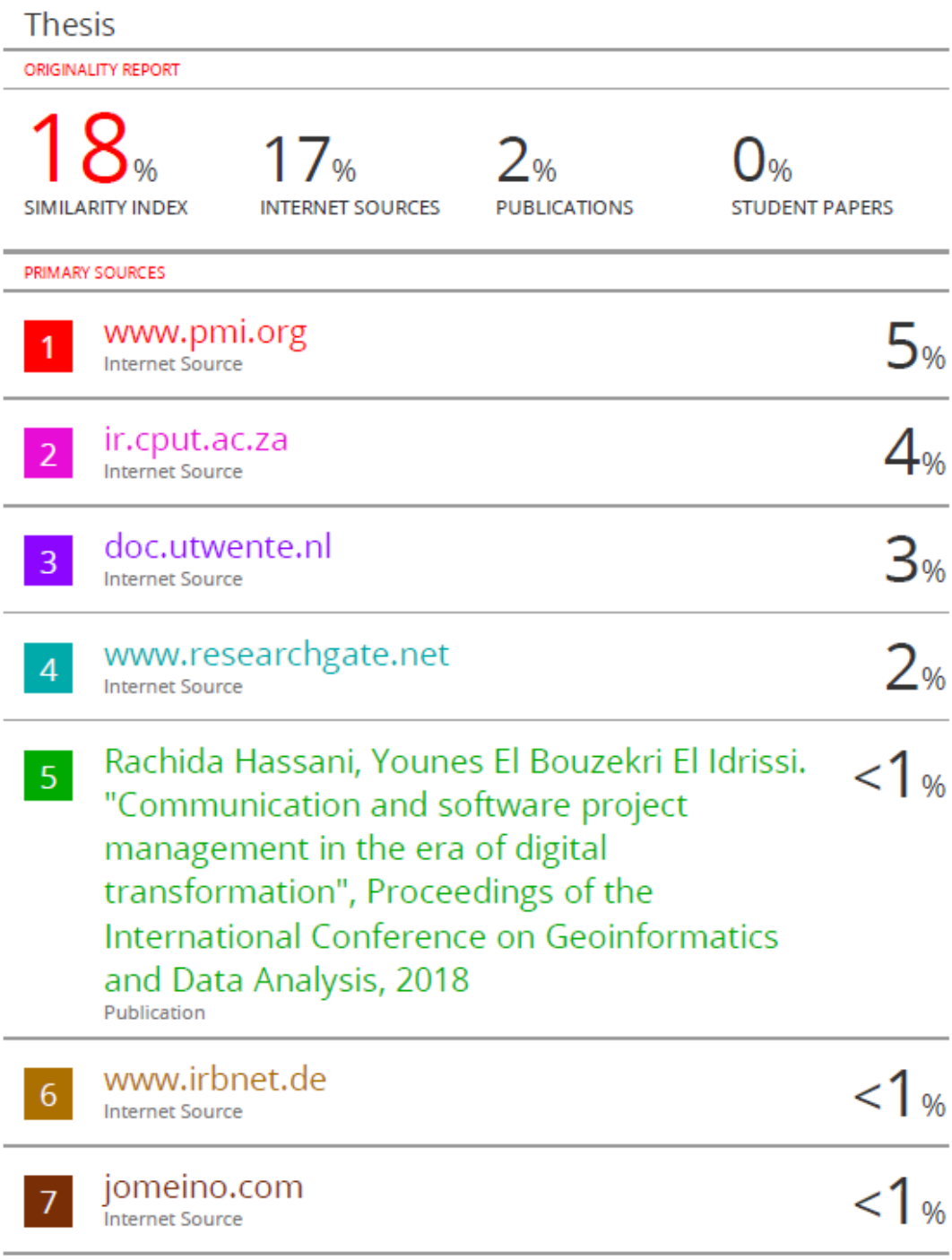
Appendix E: Turnitin Report



Thesis

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Appendix F: Letter of consent

104 Stanlou Court
34 Weltevreden Street
Bellville
7530
Vat No. 4530279233

MAIDO Construction & Engineering Sevices
Trade in as
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PROJECTS
2005/090968/23

01 September 2020

RE: Permission to Conduct Research Study

To whom it may concern:

This serves as a letter of consent to grant the mentioned student below to conduct his research study in our organization.

We commit to assist the student in his survey, questionnaires and interviews within the organization.

Student details:

Name: Peter Siphamandla

Surname: Dingiswayo

Student number: 215103769

MTech: Business Administration in Project Management

01. 09. 2020

Managing Director | Max Madolo
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