

**ORGANIZATIONAL COMMUNICATION AND
EMPLOYEE PERFORMANCE IN SELECTED LARGE
MANUFACTURING BUSINESSES IN ERITREA**

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**Organizational Communication and Employee Performance
in Selected Large Manufacturing Businesses in Eritrea**

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DECLARATION

I declare that this thesis is my own original work and has not been presented for a degree in any other University.

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DEDICATION

To father: Fesahatsion Weldeghebriel

Your unlimited love, support and prayers for me throughout this period have been great and helped me to achieve. I am grateful!

To mother: Hiwet Beyene

I would like to also dedicate this work to my late mother who had taught me to love, to be strong, and to overcome any challenge that I encounter on the way as I pursue greatness. I am grateful for being your son. May your soul rest in peace!

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variance
Comm	Communication
GDP	Gross Domestic Product
HRT	Human Relation Theory
MRT	Media Richness Theory
SMT	Scientific Management Theory
SNT	Social Network Theory
ST	Structuration Theory
SPSS	Software Package for Social Sciences

DEFINITION OF TERMS

Communication	A process of the exchange of information or message among individuals through a certain medium with the information or message being understood by the individuals (Nebo, Nwankwo & Okonkwo, 2015).
Effective communication	The exchange of meaningful and understandable information between individuals at the right time using the right medium (Crown, 2013).
Employee performance	An individual's work achievement after applying the required knowledge and efforts on the job (Pradhan & Jena, 2017).
Information	A processed data that is meaningful and useful (Madden, 2000)
Manufacturing businesses	Business organizations that produce specific products to be consumed by customers (Sanders & Reid, 2012).
Medium	A channel by which information or message is transferred from a sender to a receiver (Owusu-Boateng & Jeduah. 2014).
Message	A message is any verbal or nonverbal stimulus that elicits meaning in the receiver (Richmond et al., 2005).
Organization	A group of individuals working together under defined system of rules, procedures, and relationships designed to achieve identifiable objectives and goals (Greenwald, 2008).
Organizational Comm	The exchange or sharing of information (messages, ideas, opinions, etc) in an organization for the purpose of carrying out organizational tasks (Hybels & Weaver 2001).

ABSTRACT

Business organizations face challenges of increasing productivity in a competitive market. Particularly, the performance of the manufacturing businesses in Eritrea has been low and thus their contribution to the GDP of the country is low and this affects the economy of the country. Therefore, they need to ensure that employees are performing as intended. In this case, a proficient and integrated organizational communication can sustain employee performance in the manufacturing sector. This study examined the influence of organizational communication on employee performance in selected large manufacturing businesses in Eritrea. This study was conducted using four objectives, namely: to establish the influence of communication patterns on employee performance, to determine the influence of communication structure on employee performance, to examine the influence of communication medium on employee performance, and finally to investigate the influence of communication climate on employee performance in selected large manufacturing businesses in Eritrea. To address these objectives, the study was guided by five theories: the human relation theory, the social network theory, the media richness theory, the structuration theory, and the theory of performance. This study followed a convergent parallel mixed method design. The target population for this study was the employees of the selected large manufacturing businesses in Eritrea. For the quantitative aspects of this study, 267 employees were selected using proportionate stratified random sampling technique and for the qualitative aspects, 21 employees were selected using purposive sampling technique. Data was collected using questionnaires and interview for the quantitative and qualitative aspects respectively. The collected quantitative data was analyzed using both the descriptive (percentages) and inferential statistical analysis (correlation, regression and ANOVA) methods. The qualitative data was analyzed based on the identified themes summarized and narrated. Triangulation of quantitative and qualitative data as well as the theoretical concepts was done. The study findings show that there is statistically significant relationship between communication patterns and employee performance, communication structure and employee performance, communication medium and employee performance, as well as communication climate and employee performance. Therefore, the study concluded that communication patterns, communication structure, communication medium, and communication climate have direct influence on employee performance in the selected large manufacturing businesses in Eritrea. The overall finding of the study also shows that there is a statistically significant relationship between organizational communication and employee performance in the selected large manufacturing businesses in Eritrea. Hence, the study concluded that organizational communication has direct influence on employee performance in the selected large manufacturing businesses in Eritrea. Therefore, the study recommended that the selected large manufacturing businesses in Eritrea should make the communication patterns so effective, adopt a communication structure that connects employees from different directions or levels that ensures effective information flows, provide the various options of communication media including the technological media to ensure effective information delivery, and create a suitable communication climate that minimizes communication barriers.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In today's age, information is becoming the vital asset of an organization (Higson & Waltho, 2010). It is the basic means of production in any organization in addition to the traditional ones: land, capital and labor (Druker, 1993). Choo (1998, p.1) stated that "information is an intrinsic component of nearly everything that an organization does so much so that its function has become transparent and productive." Eadie (2009) noted that useful and timely information is the life blood of employees that is decisive for employees to make important choices in organizing their activities and executing their tasks. This means that organizations should encourage the flow of information across the entire organization for better achievements. Information must be exchanged among employees in the organization so that they can carry out their organizational activities so efficiently and effectively. This is because it is through the exchange of information (communication) that the overall goals and objectives of the organization can be achieved. Employees should communicate the right information at the right time using the right medium in order to execute their tasks (Crown, 2013). Therefore, information is a resource and is part of the communication process (Madden 2000).

In today's organizations, communication, specifically organizational communication has become an important factor for the overall functioning and success of an organization (Rajhans, 2012). Organizational communication takes place when employees share or exchange meaningful and understandable information with one another. In organizational communication, good communication is the foundation upon which an organization system is developed and maintained in order to get information, idea, or message exchanged across to others in order to achieve the intended performance. Without organizational communication, organizational excellence and performance would not exist and the various parts of an organization would not be bound together for

common goals (Researchcage, 2013). Further, according to Duncan and Moiety (as cited in Femi, 2014), employees relate with each other using means of communication. Therefore, organizational communication binds employees together in an organization (Femi, 2014). For instance, according to Duncan and Moriarty (as cited in Femi, 2014), traditionally, managers spent the majority of their time communicating with employees and stakeholders in one form or another (face-to-face discussion, memos, notice boards, mass meeting, employees hand book, and public lectures) but, today, every worker finds out that communication is an important aspect of their work and leads them to effective and efficient work performance.

Organizational communication in business organizations has also its own role in achieving the intended business goals, which is in turn achieved through employee's performance. Harris and Nelson (as cited in Rajhans, 2012) pointed out that organizational communication is one of the most dominant and important activities in business organizations. Fundamentally, the functioning and survival of businesses organizations is based on effective communication among employees. In addition, Jones et al. (as cited in Rajhans, 2012, p.82) stated that "organizational capabilities are developed and enacted through intensely social and communicative processes. Communication helps individuals and groups carry out activities to achieve goals." This means that effective communication is mandatory for achieving intended performances in businesses organizations. Thus, efficient and effective organizational communication practices have become more important in all business organizations for greater employee's performance (Rajhans, 2012).

In relation to manufacturing sector, just like any other business organization, manufacturing businesses use communication as a tool to carry out their daily activities. In practice, there is no organization without communication including the manufacturing businesses (Spaho, 2011). Thus, employees of the manufacturing businesses have to communicate to each other in order to have an understanding of their work and

exchange needed information that is pertinent to their specific work so that they can achieve the desired level of performance. In addition, Rajhans (2012) pointed out that for effective production processes to produce the intended products require greater collaboration among employees in different functional units, which is achieved through effective communication. This means that employee performance could be enhanced with effective communication or interactions among employees in the manufacturing businesses (Nwata, Umoh, & Amah, 2016). Also, it indicates that organizational communication is becoming an important factor in the manufacturing businesses for improving employee performance (Kumar & Giri, 2009). Stephen (as cited in Nebo et al., 2015, p.132) also described that “organizational communication is a critical factor in directing and mobilizing the workforce towards the accomplishment of the organizational goals.” Further, Guo and Sanchez (as cited in Ergen, 2010) noted that there is a strong relationship between communication and the efficient and effective performance of the organization, which is the result of employee’s performance. This is an indication that organizational communication is still one of the factors that affect employee’s performance in manufacturing businesses including the manufacturing businesses in Eritrea.

In manufacturing businesses, just like in any other organization, organizational communication has important aspects that need to be considered since it determines the effectiveness of communication in the manufacturing sector. According to Spaho (2012), the organizational communication aspects are the communication patterns, communication structure, communication medium (methods). In addition, according to Pace (2014), communication climate is another aspect of organizational communication. Communication patterns refer to the flow of information in the organization. It deals with how information flows in the organization for smooth and better functioning of the business. In any organization, according to Richmond, McCroskey and McCroskey (2005), information flows through formal and informal communication patterns. Thus, employees share information with each other through formal and informal patterns of

communication. The formal pattern of communication follows the hierarchical management structure of the organization or the chain of commands whereas the informal pattern of communication follows the grapevine" (Richmond et al., 2005). Informal communication is based on friendship, relationship, proximity and shared interests between coworkers. Therefore, communication patterns deal with the formal and informal communication among employees within the organization in order to get work done and thus it has its own effect on employee's performance in the manufacturing sector (Rogers, 2013).

In manufacturing businesses, communication flows through certain communication structures (directions). According to Kovacic and Luzar (2011) structure is one of the features of the communication network characteristics because each communication network has its own structure representing patterned communication flows in an organization. Therefore, according to Atambo and Momanyi (2016), the three important communication structures are the downward, upward, and horizontal (lateral) communication. Additionally, diagonal communication is another communication structure in an organization (Wilson 1992). It takes place between employees that are in different organizational levels and are not in direct relationship in the organizational structure (Spaho, 2012). These vertical (downward and upward), horizontal, and diagonal communication structures interconnect employees in the manufacturing businesses and affect employee performance (Kovacic & Luzar, 2011).

Another important aspect of communication is the communication medium. According to Johns (as cited in Owusu-Boateng & Jeduah, 2014), organizational communication involves a medium in order to transfer information from the sender to the receiver. This medium could be through a telephone call, a paper; as in a letter or a memo and any other desired means such as face-to-face, email, intranet, etc. This indicates that communication medium plays a role in organizational communication because it supports effective communication to occur in an organization. Welch (as cited in Men &

Hung-Baesecke, 2015) noted that effective communication depends on suitable messages delivered in forms that are acceptable and functional to employees. The medium must be fit and with a capacity to transmit the message appropriately from the sender to receiver. This indicates that employees are required to choose the right communication medium in order to make any message understood and heard. Lengel and Daft (1988) pointed out that a communication medium can enhance or distort the intended message. Therefore, appropriate medium must be used in order to exchange the right information so that an employee can use that information to perform his/her work.

In addition to the above aspects, communication climate has its own role for effective communication and employee performance. Communication climate refers to the environment in which communication occurs. According to Pace (as cited in Nordin et al., 2014, p.1047), “communication climate conceptually consists of employees’ perceptions of the information flow and the climate in which the communication occurs.” Communication climate can be seen either in open or closed climate. In an open climate, information flows freely but it is blocked in a closed communication climate (Nordin, 2014). As Rosenberg and Rosestein (as cited in Nordin et al., 2014, p.1048) stated that “open communication enhances productivity as well as profitability towards an organization whereas closed communication can weaken productivity.” This is because an open communication climate enables employees to exchange or share pertinent information in order to execute their tasks, which is not possible in a closed communication climate. Therefore, it is relevant to consider communication climate in this study.

According to Nwata, Umoh and Amah (2016), an integrated organizational communication is needed for sustainable employee performance to be achieved because the inadequacy in organizational communication leads to poor employee performance. In the current economy and business competition, effective communication is becoming more important now than ever before in order to increase employees performance in

manufacturing sector (Nwata et al., 2016). Roberts and O'Reilly (as cited in Jain, 2016) also notified that if communication is good in an organization, an organization's performance, which is a sum of employees performance, will also be good. Therefore, an integrated organizational communication that constitutes of the communication patterns, communication structure, communication medium, and communication climate can have an influence on employee performance in manufacturing businesses.

In relation to employee's performance, according to Balyan (as cited in Nwata et al., 2016), organizations are set up to accomplish specific goals. For these goals to be accomplished, the performance of employees in executing tasks becomes very crucial. However, employee performance must be subject to performance measurement. According to the Research Team, Development of Accountability System for Performance Government (as cited in Hikmah, 2015, p.120), "performance is the degree of effectiveness and efficiency" and hence, employee's performance is measured using work effectiveness and efficiency in producing the intended products. In the manufacturing sector, work effectiveness and efficiency are further characterized with the quality and quantity of work achieved by an employee in accordance with the task given to the employee respectively (Hikmah, 2015). However, as Olamigoke (as cited in Nwata, et al., 2016) described that employee's performance couldn't be enhanced without communication with one another because communication permits employees in an organization to give and receive information. Therefore, it is relevant to consider employee performance as dependent variable to organizational communication in this study.

According to Signe (2018), manufacturing sectors are broadly understood as fundamental paths to economic growth and development of a country. They are driving sustainable growth and jobs among other objectives. Therefore, it was important to choose manufacturing businesses and particularly the manufacturing businesses in

Eritrea for this study. This is because the manufacturing businesses in Eritrea also contribute to gross domestic product (GDP) and economy growth of the country.

The manufacturing sectors of Eritrea constitute 5.9% to the overall GDP (Nyende & Mugisha, 2017). However, a contribution of just 5.9% to the GDP of Eritrea is low and cannot contribute significantly in sustaining the economy of the country. The low contribution of the manufacturing sector to GDP in Eritrea can be related to a number of factors such as organizational communication. This is because organizational communication among other factors can play an important role in the performance of a manufacturing sector (Femi, 2014; Rajhans, 2012). Further, since the performance of a manufacturing sector is the sum of individual employee performance, in order to increase the performance of the manufacturing sector requires improving employee performance. Therefore, since employee performance cannot be enhanced without effective communication in the manufacturing businesses (Nwata, et al., 2016), it is important to examine the influence of organizational communication on employee performance in selected large manufacturing businesses in Eritrea.

1.2 Background of the Eritrean Manufacturing Businesses

According to Teclegiorgis (as cited in Weldeghiorgis, 2004), the history of modern manufacturing industries in Africa began with colonialism. It is the same to Eritrean manufacturing sector. Eritrea was colonized by Italy during 1890-1941 (until Second World War). In the first decades of colonization, Italy was focusing on building infrastructures such as roads and railways. Soon after, manufacturing business was started in the 1930s. Although Eritrea was under British administration during 1942-1952 when the British defeated Italy in the Second World War in Eritrea, Eritrea had well-developed and competitive manufacturing sectors by early 1950s. Since the late 1950s, however, an uncertain political environment created by Ethiopian colonialization had negatively affected the industrial sector in Eritrea.

During the Ethiopian colonialization from 1952-1991 (1991- Eritrea attained its independence through military resistance and in 1993 official independence of Eritrea through referendum), the existing foreign and domestic manufacturing enterprises was nationalized. Some of them were transferred to Ethiopia and new private investments were banned. Despite this, enduring poor conditions of the manufacturing sectors at the time of independence, Eritrean manufacturing businesses long-term growth and development prospects are good. According to the Government of Eritrea (as cited in Weldeghiorgis, 2004), given the good prospects, a committed and motivated workforce (competent, educated and trained), favorable natural resources to population ratio, Eritrea has the potential of achieving rapid and sustainable economic growth. For instance, the Eritrea's gross domestic product (GDP) growth was estimated at around 9% in the 2011-12 periods (World Bank, 2016). However, as Nyende and Mugisha (2017) pointed out that the Eritrea's real GDP was noted be on the decline in the last few years although the manufacturing businesses are still functioning and contributing to the economy of the country.

According to the manufacturing establishment of the Ministry of Trade and Industry (see Appendix 3), there are 27 large manufacturing businesses throughout the country. Their distribution is associated with the colonialism. As a result, 17 (63%) of the manufacturing businesses are located in central region of Eritrea, 5 (19%) in Northern Red Sea province, 3 (11%) in South province and 2 (7%) in Anseba province. Therefore, this study considered the manufacturing businesses that are located in the central region of Eritrea because the region holds 63% large manufacturing businesses and thus contribute more for the GDP of the country.

1.3 Statement of the Problem

According to Balyan (as cited in Nwata et al., 2016), organizations are set up to accomplish specific goals. For these goals to be accomplished, the performance of employees in executing tasks becomes very crucial. However, business organizations all

over the world are facing challenges (Femi, 2014; Rajhans, 2012). The challenge is on how to increase productivity in terms of producing the required quantity and quality of products that are competitive in the global market (Kovacic & Luzar, 2011). This means that in order to stay profitable in the highly challenging and competitive global market economy, business organizations need to ensure that employees are performing as intended (Femi, 2014; Rajhans, 2012). In order to achieve high level of employee performance, organizational communication among other factors can play an important role (Femi, 2014; Rajhans, 2012).

In today's organizations, organizational communication has become far more complex, varied and become an important factor for overall organizational functioning and success (Mutuku, 2014). The way employees communicate is reflected in performance of the employees (Rajhans, 2012). In today's globalization and technological advancement, effective communication is a pre-requisite for organizational stability and success (Bhata & Balani, 2015). Therefore, in this global economy and business competition, effective communication is becoming more important now than ever before in an organization in order to increase employees performance (Nwata et al., 2016). According to Olamigoke (as cited in Nwata, et al., 2016), employee performance cannot be enhanced without effective communication or interactions with one another. As a result, there are manufacturing companies that improved employee performance through effective organizational communication. For instance, Vanaz Engineers Ltd. based at Pune, India implemented various effective organizational communication practices that contributed to increase employee performance through employee motivation (Rajhans, 2012). Similarly, if there is inadequate or ineffective organizational communication, there will be poor employee performance (Nwata, et al., 2016). Therefore, effective organizational communication has a role in improving employee performance in the manufacturing sector.

According to Nyende and Mugisha (2017), the contribution of the manufacturing businesses in Eritrea to the GDP has been going down and this affects the economy. The contribution of the manufacturing sectors of Eritrea to the overall GDP constitutes 5.9%, which is low and cannot sustain the economy. This means that the performance of the manufacturing businesses in Eritrea is low. Therefore, because the performance of the manufacturing businesses is the summation of the individual employee performance, the performance of employees of the manufacturing businesses in Eritrea is low and must be improved.

According to Abugre (2011), organizational communication is very essential in all dimensions of the organization's performance. Thus, when organizational communication in the manufacturing businesses in Eritrea is effective, then the performance of employees will increase. Consequently, the manufacturing businesses can play their role in stabilizing the economy Eritrea. Therefore, it was important to examine the Eritrea manufacturing businesses from organizational communication perspective. It was thus relevant to conduct a research on the direct influence of organizational communication on employee performance in selected large manufacturing businesses in Eritrea.

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of the study was to examine the influence of organizational communication on employee performance in selected large manufacturing businesses in Eritrea

1.4.2 Specific Objectives

The study will be guided by the following specific objectives:

1. To establish the influence of communication patterns on employee performance in selected large manufacturing businesses in Eritrea.

2. To examine the influence of communication structure on employee performance in selected large manufacturing businesses in Eritrea.
3. To determine the influence of communication medium on employee performance in selected large manufacturing business in Eritrea.
4. To investigate the influence of communication climate on employee performance in selected large manufacturing businesses in Eritrea.

1.5 Research Questions

The research seeks to answer the following questions:

1. What is the influence of communication patterns on employee performance in selected large manufacturing businesses in Eritrea?
2. What is the influence of communication structure on employee performance in selected large manufacturing businesses in Eritrea?
3. What is the influence of communication medium on employee performance in selected large manufacturing businesses in Eritrea?
4. What is the influence of communication climate on employee performance in selected large manufacturing businesses in Eritrea?

1.6 Justification of the Study

This study is about the influence of organizational communication on employee performance in selected large manufacturing businesses in Eritrea. It aimed of exaaminig the direct influence of communication on employee performance in the manufacturing sector. Communication is not only used as a tool to get information but also as a means of increasing productivity in the manufacturing businesses. This is because efficient and effective communication practices have become more important in all business organizations for greater employee performance (Rajhans, 2012). In addition, accurate, relevant, clear, and timely information is determinant for employee achievement in the manufacturing sectors. However, effective communication is

dependent on effective information flows in terms of patterns and directions (structure), communication medium used by the employee as well as the communication climate in which communication takes place. In this sense, this study would contribute to the theoretical concepts of communication as a field.

Organizational communication is becoming an important factor in the manufacturing businesses for improving employee performance (Kumar & Giri, 2009). However, according to Atambo and Momanyi (2016), effective communication leads to increasing employee performance while ineffective communication is detrimental for employees and leads to poor performance. This indicates that the challenge is to make organizational communication effective in order to increase employee performance in the manufacturing businesses. Therefore, this study will help the manufacturing businesses to overcome the challenges by pointing out that suitable communication climate, the use of appropriate medium, and improving the effectiveness of the communication patterns, and having effective structures to suit effective information flows are important in order to have effective organizational communication. Effective organizational communication enables employees to exchange and use information to perform or execute their tasks more efficiently and effectively. Therefore, it is important to conduct this study in order to address the challenges facing manufacturing businesses so that there will be effective communication and thus increasing employee performance.

In addition, according to Abugre (2011), the subject of organizational communication is gaining interest as it is very essential in all dimensions of the organization's performance. Therefore, this study will also benefit the scientific community. The study fills in the existing knowledge gap in terms of the direct influence of communication on employee performance and at the same time creates a new way of thinking that require further research. It will therefore help the academic aspects in the field of communication and will serve as a basis for the purpose of further research in the field of communication. Therefore, it is relevant to conduct this study since it contributes to

the theoretical concepts of communication as an academic and research field and to the manufacturing business in terms of adjusting their communication systems in the organization in order to improve and achieve the intended performance of employees and thus also increase and improve production.

1.7 Scope of the Study

This study dealt with the selected large manufacturing businesses in Eritrea in relation to organizational communication and employee performance. Therefore, the study area was in Eritrea and considered the large manufacturing businesses located in the central region of Eritrea. The reason for selecting Eritrea is to benefit country from the study in addressing the challenges facing the large manufacturing businesses in Eritrea in producing the required quantity and quality of products so that they will contribute more to the GDP and economy. In addition, the 17 (63%) out of the 27 large manufacturing businesses were located in the central region, that is 75% of employees of the manufacturing businesses in Eritrea were in this region. Also, these large manufacturing businesses in the central region are the highest contributors to the GDP and economy of Eritrea.

The researcher examined the direct influence of organizational communication on employee performance in these selected large manufacturing businesses in terms of achieving the desired efficiency and effectiveness in producing the intended products. Therefore, the study considered the communication patterns, communication structure, communication medium, and the communication climate as independent variables while employee performance as dependent variable. This study considered only communication among employees within the organization using of these identified variables and thus did not deal with external communication.

In relation to the theoretical scope, this study was basically dealing with organizational communication, thus it was important to consider theories in communication to guide

the study. Therefore, the theories that are applicable to guide this study were the human relation theory, the media richness theory, the social network theory, the structuration theory, and the theory of performance.

The research design for this study was the convergent parallel mixed methods design because the study considered both the quantitative and qualitative data. The finding of both the quantitative and qualitative analysis were triangulated when appropriate. Further, this research was dealing with selected large manufacturing businesses in Eritrea. Therefore, the target population of this study was employees of the selected large manufacturing businesses in Eritrea. The total population size was 4175 employees. For the quantitative aspects, a sample size of 365 employees of the selected large manufacturing businesses was considered. A proportionate stratified random sampling technique was used to select employees. The sample sizes for each selected large manufacturing business was determined proportionately. For the qualitative aspects (interview), a purposeful sampling technique was used. Considering the concepts of “information power” and “grounded theory methodology,” a sample size of 25 employees was considered for interviews in this study.

In regard to data collection, data was collected through questionnaires and interviews from employee of the selected large manufacturing businesses. The collected quantitative data was then analyzed using both descriptive (percentage) and inferential statistical analysis (correlation, regression and ANOVA) techniques. SPSS was used as a tool for the statistical analysis. The qualitative analysis was done based on the identified themes as summarized and narrated.

1.8 Limitations of the Study

The study was limited in terms of its scope, i.e., in terms of the geographical coverage and number of manufacturing businesses considered. Only large manufacturing businesses located in the central region of Eritrea were considered. In addition, the study

was limited contextually, i.e., this study considered only internal communication and not external communication. The other important limitation of this study is that the study used cross-sectional survey method, which is not helpful to determine the cause-effect relationships. It is thus only determines the association between the variables at the point in time. Furthermore, this study used only primary data collected directly from the respondents.

The study was again limited in the number of manufacturing businesses considered in Eritrea. From the 17 large manufacturing businesses located in the central region of Eritrea, only 14 manufacturing businesses were considered because ZAER Textile were not ready to cooperate, Natsinet Enterprise Textile was not function during the preliminarly assessment, and Saba Shoe factory was used for piloting. In addition, the researcher couldn't be able to collect data from three manufacturing businesses since two were not cooperative while one manufacturing businesses was not functioning at the time of data collection period. Therefore, the study was limited since data was collected from 11 large manufacturing businesses.

The study was also limited in terms of the challenges faced in conducting the research. The challenges were in terms of getting reference materials on similar studies in Eritrea. Specifically, the researcher couldn't be able to get enough research materials on similar empirical studies relating to communication medium and employee performance. Thus, the study was conducted on limited reference materials.

However, it is important to note that the use of both quantitative and qualitative methods helped the study to be more comprehensive and useful. The use of quantitative and qualitative methods enabled to collect the required data that can explain and address the research questions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter critically reviews literature that is pertinent to the study. It reviews literature that is related to the organizational communication and employee performance in business organizations and the studies done in this area. The chapter begins with discussing and reviewing in detail the theoretical framework that is relevant to the problems that are being investigated focusing on how the theories apply to the research problems. The chapter also presents the conceptual framework in terms of the independent and the dependent variables. Further, it discusses the empirical reviews, critiques of existing literature, the research gaps, and provide a summary of key issues in this chapter.

2.2 Theoretical Framework

This study is about the influence of organizational communication on employee performance. Therefore, the study was guided by the relevant communication theories. The theories that are identified and applicable to this study are the human relation theory, the media richness theory, the social network theory, structuration theory, and the theory of performance.

2.2.1 Human Relation Theory (HRT)

The human relations theory (HRT), according to Perry (as cited in Tirintetaake, 2017), was profound by Elton Mayo to prove that employees are more significant in productivity and not machines, and to address the problem that Taylors' "scientific management theory (SMT)" was faced. According to Chand (as cited in Tirintetaake, 2017), The SMT was introduced aiming of increasing productivity and reducing labor cost and thus, scientific management means knowing exactly what you want men to do

and then see they do it in the best and cheapest way. However, as Chand (as cited in Tirintetaake, 2017) described that HRT emphasizes that employees are human beings and should be treated as human beings, not as machines. HRT noted that employees are human and they should be treated as human beings, and work as a group by forming relationships among them. This means that employees are the main assets of an organization and are therefore hugely valuable to the organization's performance and success.

The HRT consists of certain features. The main ones, according to Tirintetaake (2017), are the individual employee, informal organizations, and participative management. Individual employee refers to employees, in terms of their skills, as the main assets of the organization and should be respected in their workplace and can be linked to high performance. In relation to informal organizations, according to Chand (as cited in Tirintetaake, 2017), this feature of HRT refers to the informal social aspects of employee. It considers the building of communication channels through the formation of groups and relationships among employees to strengthen their performance (Tirintetaake, 2017). Thus, as Banerjee (2012) pointed out that the formation of formal and informal groups as well as building communication channels leads to a relation-oriented rather than a task-oriented style of leadership. Thus, this feature indicated that the formation of formal and informal relationships among employees can facilitate communication.

With reference to participative management, the HRT theory noted that the involvement of individual employee in decision-making process, and as a result employee can have an input and understand what and how the decision could affect them in executing their tasks. According to Chand (as cited in Tirintetaake, 2017), the most crucial part for effective decision is the involvement of individual employees through their group and informal leaders and when employees become aware that they might be affected from the decision. Hence, this indicates that the HRT noted the two-way communication in

participative management and consequently employees can perform efficiently and effectively.

Considering these features, just like the name of the theory indicates, according to Eadie (2009), the ultimate results of the HRT is the most important factor influencing productivity is not a machine but the relationships among employees since the quality of relationships directly influences the ability of employees to perform tasks. At the same time, such relationship among employees enables them to share any information that is needed in performing their tasks. Therefore, the HRT assumes that communication among employees is one of the most important factors that lead to effective employee performance, which in return leads to effective organizational performance.

In addition, according to Wrench et al (as cited in Atambo & Momanyi, 2016), the human relations approach is important since the two-way communication is encouraged in an organization. It is also true that workers want to have their voice heard and provide input in their tasks. Therefore, the HRT can be applied practically in an organizational context by encouraging communication among employees that lead to improved performance of employees and the organization (Atambo & Momanyi, 2016). Therefore, HRT theory can be applied to this study because it encourages effective communication through the formation of groups and relationships (formal and informal relationships) among employees that leads to better performance. This theory is therefore relevant to this study.

2.2.2 Media Richness Theory (MRT)

Media Richness Theory (MRT) was introduced in 1984 by Richard L. Daft and Robert H. Lengel. It was developed based on the concept of information richness. According to Daft and Lengel (1986, p.560), “Information Richness is defined as the ability of information to change understanding within a time interval.” This implies that a communication that clarifies ambiguous issues and change understanding in a timely

manner is considered richer, whereas communication that takes a longer time to convey or change understanding is less rich. Hence, richness refers to the learning capacity of communication (Daft & Lengel, 1986). Therefore, according to Daft and Lengel (as cited in Dennis & Valacich, 1999), MRT is sometimes called Information Richness Theory.

MRT can also be defined as the ability of the media to convey information that would change understanding within a time interval. Daft and Lengel (as cited in Dennis & Valacich, 1999, p.1) stated that “MRT proposes that task performance will be improved when task needs are matched to a medium's ability to convey information.” This implies that MRT can provide a framework for describing a communication medium's ability to reproduce the information sent over it without loss or distortion.

According to MRT theory, the media used during communication do not have the same capacity to transmit information between the sender and receiver. Some are better than others. According to Daft, Lengel and Trevino (as cited in Dennis & Valacich, 1999), considering whether the information is used in situations of uncertainty or equivocality, certain media are better able to transmit information. Uncertainty exists when there is a framework for interpreting a message but there is a lack of information to process, whereas equivocality exists when there are multiple interpretations for the information with which it is interpreted. Hence, rich media makes it possible for the reduction of equivocality, whereas low in richness are less appropriate in resolving equivocal issues because they process low cues and restrict feedback. However, media of low richness are appropriate for well understood messages or are best suited to tasks of uncertainty (Daft & Lengel, 1986).

The MRT theory indicates that communication media vary in the capacity of richness to convey information. The main reasons for richness difference are the medium's capacity for immediate feedback, the number of cues and channels utilized personalization, and language variety (Daft & Lengel, 1986). Similarly, Dennis and Valacich (1999) noted

that media varies in terms of their ability to convey and change understanding. According to Dennis and Valacich, richer media are those with a greater language variety (the ability to convey natural language rather than just numeric information), a greater multiplicity of cues (the number of ways in which information could be communicated such as the tone of voice), a greater personalization (ability to personalize the message), and more rapid feedback. According to these criteria, Daft and Lengel (1986) pointed out that face-to-face is the richest medium followed by telephone, personal documents such as letter or memo, impersonal written documents such as report, and numeric documents. For instance, face-to-face channel is arguably the richest type of media because of its immediate feedback, and also because it provides multiple cues through body language, tone of voice, and the content of the message is expressed in natural language.

However, MRT theory not only applies to the traditional media, but also applies to the new media, such as the electronic media like email, social media, etc. Dennis and Kinney (1998) noted that the media richness theory is perhaps the most influential media theory for the new media (i.e. Information and Communication Technology). According to Dennis and Kinney (1998), initially, MRT did not consider the new media but they have been retroactively fit into the theory's framework because the theory refers to the capacity of a medium to transmit information between the sender and receiver.

Basically, according to Daft and Lengel (as cited in Dennis & Valacich, 1999) media richness theory was developed to theorize which media should prove most effective and under what situations. Similarly, Dennis and Kinney (1998) noted that MRT is a theory of media use, not media choice. However, Dennis & Kinney explained that the first empirical test of MRT by Daft, Lengel, and Trevino in 1987 was not about the effects of media use but about media choice and matched the predictions of MRT. Therefore, MRT is related to the media choice and use by employees in an organization.

Therefore, as organizations use a variety of communication media in relation to the organizational context, the media richness theory suggest that employees should use appropriate media in terms of the richness of the media and the message that need to be processed. In a sense, a rich media is preferable to non-routine tasks or for equivocality and less rich media to routine tasks where the message is well understood or for uncertainty. Thus, MRT is applicable to this study in the way that employees of manufacturing business use different media to communicate effectively by choosing the appropriate media (rich media). Therefore, MRT is relevant to communication medium, which is one of the variables in this study. Hence, it is relevant to consider and be guided by the media richness theory in this study.

2.2.3 Social Network Theory (SNT)

According to Halgin (2012, p.3), a network consists of a set of nodes (actors) linked with a set of ties of specified type (such as friendship). The nodes are individuals or collectives of individuals that are interconnected through a pattern of ties or shared endpoints. These patterns of ties that link nodes in a network create a particular structure. The nodes occupy positions within the structure. Therefore, a network can simply be defined as a structure of the interconnections of nodes along with the specific ties that connect them.

Having defined what a network means, according to Larsen and Eargle (2015), the social network theory refers to the social structure of relationships around a person, group, or organizations. It views the social relationships in terms of nodes and ties. Nodes are the individual actors within the networks, and ties are the relationships between the actors. The power of the social network theory stems from the assumption that the attributes of individuals are less important than their relationships and ties with other actors within the network. This is a different view from traditional sociological studies (Larsen & Eargle, 2015). This means that the ability of individuals to succeed rests much within the structure of their network.

Another alternative view of the social network theory, according to Haythornthwaite (1996), is that regular patterns of information exchange can be considered as social networks, in which actors as nodes and information exchange relationships as ties. In such a social network, the flow of information among the actors is structured by the information exchange relationship. Haythornthwaite (1996) explained that information exchange relationships indicates that the kinds of information being exchanged, with whom, and to what extent. This implies that individuals as actors will be exposed to particular kinds of information in the network. The patterns of exchange of information in networks indicate the flow of information around an environment and how actors position themselves to facilitate and control the information flow.

In relation to organizational communication, the SNT deals with the communication network of an organization. It considers the formal and informal communication patterns within an organization. These communication patterns, as Haythornthwaite (1996) noted, can be used to explain several organizational phenomena. For instance, the place employees have in the communication network (as described by their relationships) influences their exposure to and control over information. This means that, according to the theory, communication takes place within these communication networks among employees in an organization. Therefore, communication network here refers to interconnected individuals who are linked by patterned communication flows (formal or informal).

Moreover, Tayo and Olamigoke (as cited in Nwata et al., 2016) described that “human societies are characterized by a network of interactions.” This implies that there is no interaction between individuals without any form of communication. This further implies that the performance of employees cannot be enhanced without communication or interactions with one another because employees in an organization are linked through communication (Nwata et al., 2016). Employees in an organization would be isolated and will have nothing to do with one another if there is no communication,

which is not a good scenario. Indeed, employees do relate or interact with one another. It is this communication that facilitates the exchange of information among employees that eventually influence positively their performance. In other words, “organizational communication networks are possible remedies to actualize employees’ performance” (Nwata et al., 2016, p.90).

Haythornthwaite (1996, p.336) pointed out that “strong, close connections between network members promote free exchange of information among network members.” Therefore, the SNT theory is relevant to this study of organizational communication and employee performance. It relates to a variable of this study, such as the communication patterns, because it demands strong relationship among employees for the free flow of information in the manufacturing businesses.

2.2.4 Structuration Theory (ST)

Whittington (2015) described that structuration theory (ST) originated from series of books by Anthony Giddens, which are *New Rules of Sociological Method* (1976), *Central Problems of Social Theory* (1979), and *The Constitution of Society* (1984). Similarly, McPhee, Poole, and Iversont (2014) pointed out that the ST was rooted in the series work of Anthony Giddens (1976, 1979, 1984, 1987, 1990, and 1991). McPhee et al. (2014) further described that the basic principles of ST were formulated by Giddens work of 1979 and 1984. However, the most extended and systematic statements of the ST was outlined in the book of *The Constitution of Society* (1984) (Whittington, 2015). Therefore, in the 1980s, ST was first applied to organizational communication (McPhee et al., 2014).

According to McPhee et al. (as cited in Puntnam & Mumby, 2014), ST is a critical system theory that accounts for an underlying generative structure, rules and resources that are mobilized in action by agents (humans) to produce and reproduce a system (structuration) . “A system is an observable pattern of relationships among actors”

(Puntnam & Mumby, 2014, p.75). It is a system of human practices, where practices are patterns of activities that have meaning for participants (Wrench, Punyanunt-Carter & Mark, 2012). According to Puntnam and Mumby (2014), structures are the rules and resources on which actors depend on to carry out their practices and it defines the patterns that constitute systems. Rules are principles that guide activity, whereas resource is anything that facilitates activities that include material (budget, tools) or nonmaterial (information, knowledge, traditions) items. However, “structuration refers to the production and reproduction of a social system in interaction. It is the process through which structures are constituted. Production means that agents draw on rules/resources to act meaningfully; and reproduction implies that the acts maintain or transform those rules/resources” (Puntnam & Mumby, 2014, p.76).

In the ST theory, concepts of agency, structure, and structuration are important and have an intrinsic importance to practice. Giddens (as cited in Whittington, 2015) noted that the human agency conception affirms that people’s activity matters because practice makes a difference to outcomes, the notion of social structure allows for both constraint and enablement, and the concept of structuration brings together structure and agency to give them flow and continuity. Further, Wrench et al. (2012) noted that structure and agency are a duality. Humans create a structure through their actions, but at the same time, they reproduce the structure by acting within it. Therefore, “in the duality structuration, structure is both a medium of interaction and its outcome” (Puntnam & Mumby, 2014, p.76). A structure not only constrains action but also enables it, even as action produces and reproduces the structure. Thus, it is the process of structuration, which gives the theory its name. However, in ST, structure refers to the interrelationships between practices (Wrench et al., 2012).

McPhee et al. (as cited in Puntnam & Mumby, 2014) viewed an organization as a system. If so, based on ST as a system theory, organizational systems are composed of human practices including the practices that structure an organization’s climate. McPhee

and Poole (as cited in Littlejohn & Foss, 2008) noted that climate as the general collective description of the organization that shapes members expectations and feelings through which the organization perform. Therefore, members of the organizations enact climate as they go through their daily activities.

Climate is thus structurally a collective attitude that continually produced and reproduced by the organizations member's interaction. Therefore, climate is a product of ST. It is both the medium and outcome of interaction, but in turn affects and constraints practices (Littlejohn & Foss, 2008). In other words, members of an organization engage in social interactions without full awareness of how their actions impact the larger picture. Thus, individuals not only create a climate through their actions but their actions are in turn shaped by that climate through the processes of structuration (Wrench et al., 2012). This is the reason why ST can be defined as a process in which the unintended consequence of actions create norms, rules, roles and other social structure that contain or affect future action (Littlejohn & Foss, 2008). Therefore, this means that ST is highly related with the climate as it is produced and reproduced by the human practices.

ST theory has duality. Based on structure in action model that is developed by Bisel's in 2010, communication is a dually action and structural reproduction (Puntnam & Mumby, 2014). Therefore, in a similar argument like the one above, communication climate is the product of ST because employees in manufacturing business create a climate through their actions; their actions are in turn shaped by that climate through processes of structuration. Communication climate influences employee's communicative attitudes as open/positive climate foster interaction and information exchange, and closed/negative climate hinders it. The communication climate created by the employee's actions, norms, rules, roles and other social structure affects future action of employees that in turn affect their performances.

Therefore, ST is applicable to organizational communication climate because communication climate is produced and reproduced through the processes of

structuration. ST theory is thus relevant to guide this study because communication climate is one of the independent variables in this study.

2.2.5 Theory of Performance

The origin of the theory of performance is most associated with the work of Richard Schechner in 1970-1976 (Sidnell, 1991). According to Schechner (2003), performance is an inclusive term that includes performance in everyday life such as greetings, display of emotions, professional roles, sports, theaters, dances, ceremonies, and performance of great magnitude. However, the theory of performance in relation to performance in an organization is related or referred to the perceived relationship between different performance dimensions that include performance results and organizational performance, which is outcomes (Krausert, 2009). According to Krausert (2009), performance results or outputs are immediate and tangible consequences of behaviors whereas outcome is organizationally relevant consequences related to employee performance that can be influenced by other factors including competitiveness in markets.

The theory of performance explains that to perform is to produce valuable results through a complex series of actions that ingrate knowledge and skills (Elger, 2007). A performer is an individual or a group of people working in collaboration to produce the results (Elger, 2007). This implies that an individual employee performance in an organization is important because the employee is the performer. It can therefore be noted that employee performance refers to an individual's work achievement after applying the required knowledge and efforts on the job (Pradhan & Jena, 2017). Thus, the performance of an individual employee is related to their work related behaviors or actions that results to outputs and outcomes (Krausert, 2009; Bose, 2018).

Performance is a multi-dimensional concept that includes task performance and contextual performance (Sonnetag & Frese, 2002). Borman and Motwidlo (as cited in

Sonnentag & Frese, 2002) explained that task performance refers to an individual's proficiency in performing activities that contribute to the organization's technical core whereas contextual performance is related to activities that contribute to the organizational goals. According to Borman and Motwidlo, task performances are direct results in case of production workers and indirect in case of management and personnel workers but contextual performance relates to being cooperative, being reliable member, providing suggestions on how to improve work procedures, and so on. However, according to Campbell et al. (as cited in Sonnentag & Frese, 2002), behaviors or actions that can be scaled or measured are considered to constitute performance.

It can therefore be noted that the theory of performance is relevant to employee performance in the manufacturing sectors because employee performance produce a direct result (task performance) that can be measured in terms of productivity, that is, quantity and quality of products (Hikmah, 2015). Hence, this theory of performance is applicable in this study as the study considered employee performance as a dependent variable. Therefore, it is relevant to apply and be guided by the theory of performance in this study.

2.3 Conceptual Framework

A conceptual framework is a network of interlinked concepts where these interlinked concepts all together provides a comprehensive understanding of a phenomenon (Jabareen, 2009). This means that as Miles & Huberman (as cited in Ngulube, Mathipa & Gumbo, 2015) pointed out that a conceptual framework lays out the key factors, constructs, or variables, and presumes relationships among them. Van Der Walt (as cited in Ngulube, et al., 2015) also stated that a conceptual framework explains either graphically or in a narrative form outlining the main dimensions to be studied - the key factors, constructs, or variables, and presumes relationships.

The conceptual framework of this research study is presented in graphical and narrative forms to show the variables under study and their relationships. As depicted in Figure 2.1, the variables are in two categories: independent variables and dependent variable. The independent variables are communication patterns, communication structure, communication medium, and communication climate, and the dependent variable is employee performance.

Figure 2.1, therefore, illustrates the conceptual framework of this study in relation to the direct influence of organizational communication on employee performance in manufacturing businesses. It shows the direct influence of the independent variables on the dependent variable. Thus, it shows the direct influence of the communication patterns in terms of formal and informal communication; the communication structure in terms of vertical (downward and upward), horizontal, and diagonal communication; the communication medium in terms of oral communication, written/print, and electronic media; and the communication climate in terms of open and closed communication climate as independent variables on the dependent variable: employee performance, which is measured in terms of work efficiency and effectiveness. Work efficiency and effectiveness are further measured in terms of quantity and quality of products respectively.

Therefore, these independent variables constitute the organizational communication and each independent variable can influence employee performance in manufacturing businesses because these variables enable an employee to send and receive information related to tasks. Hence, an integrated organizational communication should constitute these four independent variables.

Independent Variables

Dependent Variable

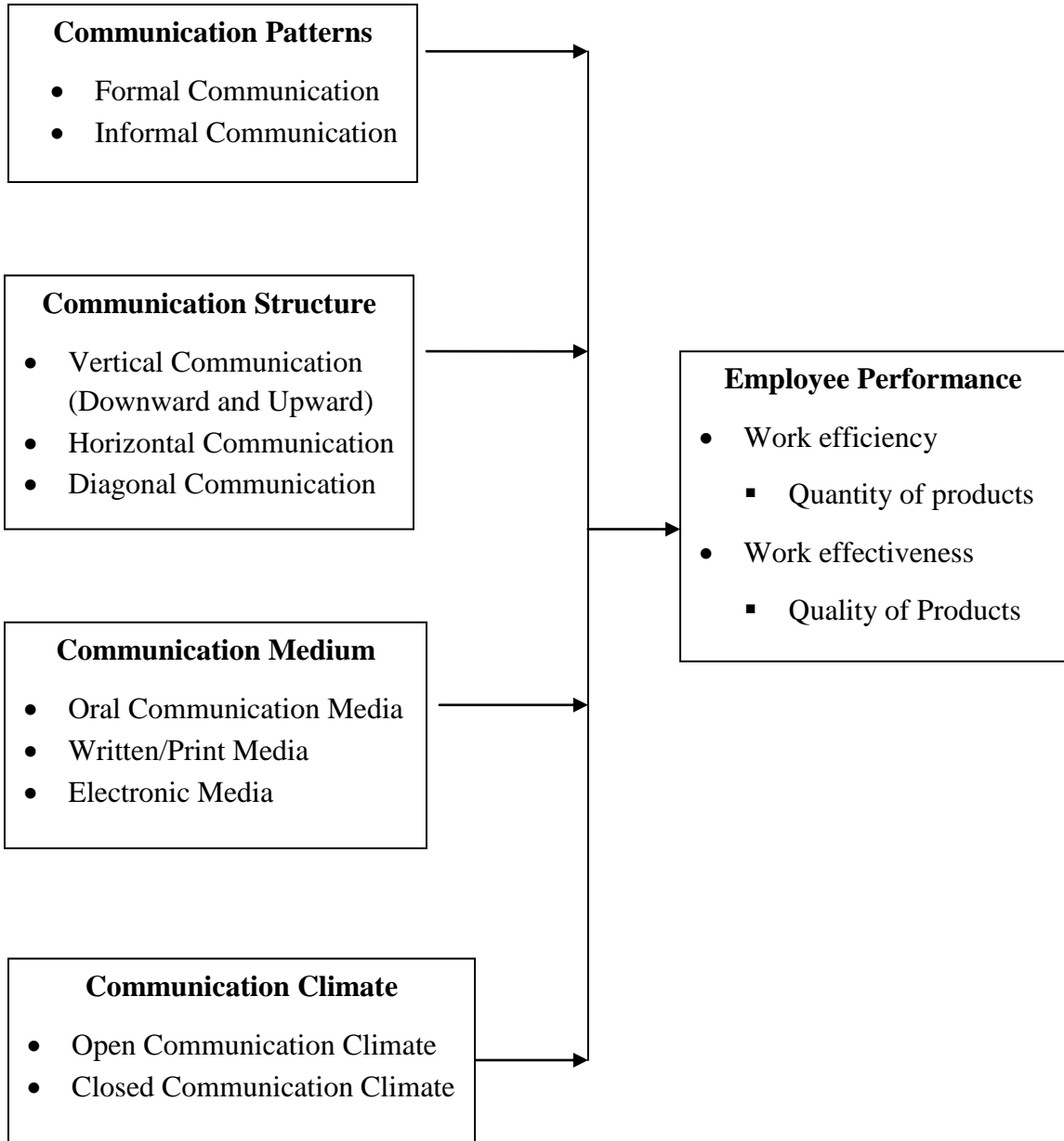


Figure 2.1 Conceptual framework

2.4 Review of Variables

From the conceptual framework of this study, the main variables that would be examined in this study are the communication patterns, communication structure, communication medium, communication climate, and the employee performance. The variables are discussed in detail below.

2.4.1 Communication Patterns

Organizational communication has crucial role among employees in manufacturing businesses. It includes activities of sending and receiving information or message through various layers of authority, using various message systems, and discussing various topics of interest (Shonubi & Akintaro, 2016). Thus, in organizational communication, there are patterns used to flow information, resources, and policies. Therefore, in order to achieve effective communication, manufacturing businesses need effective communication patterns for employees to communicate throughout the organizational structure. This way the organization improves the communication flow within the entire departmental area for smooth and better functioning of the business and also better employee performance. This indicates that communication patterns have their own importance in organizational communication and hence have an influence on employee's performance.

Communication pattern refers to the flow of information in the organization. It deals with how information flows in the organization for smooth and better functioning of the business. According to Chan Chun Ming (2010), communication patterns allow information to transmit through defined channels so that the information can reach intended receivers in a timely and efficient manner. In any organization, there are communication patterns through which information flows at the organization-wide level.

According to Shonubi and Akintaro (2016), the patterns of communication are formal and informal communication patterns that employees exchange or share information or

messages with each other in manufacturing businesses. Formal communication pattern is the official paths recognized by management. “It is official, organization-sanctioned episodes of information transmission” (Shonubi & Akintaro, 2016, p.1906). It follows the formal, established official lines of contact (Richmond et al., 2005). Typically, it occurs through defined reporting channels established by the organization’s hierarchy structure or management. In addition, according to Chan Chun Ming, (2010), formal communication can be described functionally in terms of the types of messages it carries. For instance, tasks or production messages are transmitted through the formal or official channels that involving task output, job instructions, and performance feedbacks (Chan Chun Ming, 2010). Formal communication is often pre-arranged and necessary for performing some tasks (Banihashemi, 2011). So, formal communication can help employees in communicating clearly. Ineffective or unclear communication is detrimental for employees since it leads to poor performance (Atambo & Momanyi, 2016). Therefore, formal communication can have an influence on employee performance in manufacturing business.

Informal communication, on the other hand, as Mishara (as cited in Chan Chun Ming, 2010) stated, is a major communication network in an organization. According to Subramanian (as cited in Ergen, 2010), it takes place between employees due to some relationship or perception of each other as a reliable or knowledgeable member and trust. Informal communication creates informal links or networks among employees. There is no formal structure in which information flows. This informal link can enable employees to make communication effective and powerful. Informal communication occurs when the employees are not able to communicate required information to higher authorities due to certain reasons or communication barriers. Thus, as Crampton et al. (as cited in Ergen, 2010) stated that informal communication takes place when the formal communication network has some inconsistencies and vulnerabilities in terms of the flow of information within the organization. These inconsistencies and vulnerabilities create opportunity for the informal communication to appear.

Informal communication involves communication that follows the "Grapevine" (Richmond et al. 2005). According to Subramanian (as cited in Ergen, 2010), informal communication is called Grapevine. The Grapevine, according to Mishara (as cited in Chan Chun Ming, 2010), is the product of social interaction. Crampton et al. (as cited in Ergen, 2010, p.7) described that "the Grapevine is linked with the intensity and importance of communication to employees; the degree of ambiguity and lack of clarity of the communication to employees; an organizational environment that is insecure or threatening; and with an organization climate where lack of trust exists among employees toward formal communications."

The Grapevine arises from social interactions of employees and is faster compared to formal communication because it occurs in a personal network. It allows more ideas to be generated as a sort of informal link between employees. It helps employees to engage in deeper exchange of ideas and information about their work. For instance, Albrech and Ropp (as cited in Verma, 2013, p.68) "discovered that workers were more likely to report talking about new ideas with those colleagues with whom they also discussed work and personal matters, rather than following prescribed channels based upon hierarchical relationship." This shows that informal communication can lead to effective communication and can have an impact on employee performance. This is because smooth flow of communication among employees may likely create and facilitate high performance by employees (Femi, 2014).

Therefore, communication patterns involve formal and informal communication among employees within the organization to get work done. It has its own effect on employee's performance (Rogers, 2013). Hence, it is important to consider communication patterns, in terms of formal and informal communication, as an independent variable in this study.

2.4.2 Communication Structure

The other important variable in this study is the communication structure (direction) in which information flows within an organization. As Kovacic & Luzar (2011) noted that communication networks have different network characteristics such as the structure. Each communication network has its own structure of ties that represent the patterned communication flows. The structure that interconnects employees affects performance and viability (Kovacic & Luzar, 2011). The organizational communication structure determines the flow of information within the organization. According to Driskill & Goldstein (as cited in Ergen, 2010), it is tied with the organizational structure that is the vehicle for accessing and communicating information and defines the nature of communication within the organization. Therefore, the communication structure of the organization has an influence on employee performance.

Although organizations adopt their own organizational structure that defines the communication structure within the organization, there are four important communication structures or directions in which communication among employees takes place. These are downward, upward, horizontal, and diagonal communication (Spaho, 2012). However, the widely adopted communication structures are downward, upward, and horizontal communication (Atambo & Momanyi, 2016). The downward and upward communications in organizations are also called vertical communication. However, diagonal communication is not widely used in an organization (Wilson, 1992).

Widhiastuti (2012) defined vertical communication as the exchanges of information through certain organizational hierarchies and influences the organization's members because there are involvements between employees, managers and employees in a formal organization. For instance, Widhiastuti explained that managers provide important information to employees through the communication structure of the organization. This flow of communication is usually referred as the downward communication. Similarly, employees communicate about their work related issues such

as work problems, things to be done, how to be done, and work report to the managers. This flow of communication can also be referred to as upward communication.

Nebo et al. (2015) noted that downward communication provides information from higher levels to lower levels. Thus, information flows down the chain of authority from top-to-down (Chan Chun Ming, 2010). It is designed to provide job rationale or directives to produce understanding of the task and its relation to other organizational tasks, to communicate about organizational procedures and practices, for feedback to the subordinate about performance, and to communicate to foster inculcation of organizational goals. Thus, this communication structure is a structure in which formal communication takes place between the various levels of management and lower level employees (Nebo et al., 2015).

Downward communication, as Larkin & Larkin (as cited in Verma, 2013) noted, is most effective if managers communicate directly with immediate supervisors and immediate supervisors communicated with their staff. Increasing the power of immediate supervisors leads to increased performance by employees. However, such flow of information from the top to lower employee might take time and may affect the performance of the lower level employees if they fail to receive information on time. Information has value only when it is received on time. Therefore, this indicates that downward communication can have an influence on employee performance.

On the other hand, upward communication is the communication between the lower level employees to top levels following hierarchal structure of authority. Housel & Davis (as cited in Ergen, 2010) defined it as the transmission of information from the lower levels to the top levels of an organization. Similarly, Zalabak (as cited in Chan Chun Ming, 2010) stated that upward communication is where information flows through vertical lines of authority but in an upward direction and thus the message is directed at the higher management levels. However, according to Ergen (2010, p.6), “upward

communication is a process, where employees' ideas, responses, critiques or plans are shared with their superiors and it involves listening.”

Jablin (as cited in Chan Chun Ming, 2010) indicated that lower level employees engage in upward communication through the formal structure when they report about their work to their immediate supervisors. This means that upward communication involves lower level employees in organizational communication. It promotes employees to provide information related to their task to upper levels with the expectation of responses that would help them to execute their given tasks in a better way. Therefore, involvement of employees through the sharing of information creates a strong potential to prompt different aspects of their performance (Ergen, 2010).

It is therefore noted that communication between management and employees in downward and upward communications involves task requirements of a formal structure, where the initiation of communication usually arises from the need to handle certain tasks (Chan Chun Ming, 2010). For instance, upward communication may be related to problems and exceptions to routine work in order to make the supervisors aware of difficulties, suggestions for improving task-related procedures, periodic reports of performance, or grievances (Verma, 2013). Goris et al. (as cited in Ergen, 2010) stated that vertical communications can affect employee performance. Therefore, communication between management levels and employees has an influence on employee performance.

Another important communication structure in an organization is the horizontal (lateral) communication. This communication is a communication between different functional units, divisions or departments within an organization. According to Nebo et al. (2015), horizontal (lateral) communication aims at linking related tasks, work units and divisions in the organization. The importance of horizontal communication increases with task specialization and diversity in organizational structure.

Verma (2013) noted that horizontal communication flow exists to enhance coordination so that work can be done properly. It permits a lateral flow of messages. It also enables employees of one unit to work with other units without having to follow rigidly vertical channels. Basically, the information that employees communicate is informational in order to tie activities within or across units and departments. Such a communication direction is important because several task accomplishments relates with issues in other departments. This indicates that horizontal communication is not only for coordination but also for the execution of tasks because the needed information is with other employee in another functional unit or department. Employees should get information from colleagues in another functional units or departments in order to execute tasks in hand. Therefore, horizontal communication can have an influence on the employee performance because sharing relevant and pertinent information leads to a successful execution of tasks.

In addition, Richmond et al. (2005) pointed out that in an organization, there is more horizontal communication on a daily basis than vertical communication. According to Richmond et al., it is because there are more employees than managers and employees feel more comfortable talking with employees at the same level than with employees at different hierarchical levels. It is easier to get the required information from colleagues than from upper level authorities. Therefore, horizontal communication enables employees to increase their understanding and knowledge, as well as their communication and socialization skills. This is where employees can establish the required interpersonal relationships that can likely assist employees to become better employees in the organization. This shows that horizontal communication can have a profound influence on employee performance in an organization.

Diagonal communication is also another communication structure in an organization. It refers to communication between managers and workers or among workers that are located in different functional divisions (Wilson 1992). It takes place between

employees that are in different organizational levels and are not in direct relationship in organizational hierarchy. However, it is rarely used in organizations (Spaho, 2012). Although, vertical and horizontal communication continues to be dominant in organizational communication, there could be communication forms that require diagonal communication (Wilson 1992). Therefore, diagonal communication can have an influence on employee performance.

Therefore, the communication structure that consists of vertical (downward and upward), horizontal, and diagonal communication interconnects employees and thus affects employee performance in an organization (Kovacic & Luzar, 2011). Therefore, communication structures of an organization can influence employee performance because they determine the flow of information within the organization. Hence, it is important to examine the communication structure as an independent variable to the dependent variable, which is employee performance in this study.

2.4.3 Communication Medium

Information is one of the important resources in an organization. Useful and timely information is critical for employees to make smart choices about how to organize their activities and execute their tasks (Eadie, 2009). Therefore, it must be communicated and shared effectively among employees in the organization. To communicate and share such information or message, an appropriate communication medium must be used. A medium is the physical means through which communication is created, transmitted, or stored (Yates & Orlikowski, 1992). The medium could be a telephone call, a letter or a memo, face to face, email, and so on.

Crescenzo and Men (as cited in Men & Hung-Baesecke, 2015) stated that employees of an organization use a wide array of tools for communication that range from conventional channels to web-based platforms. The conventional channels include print media (e.g. newsletters, magazines, and posters), face-to-face communication, e-mails,

and phone calls; the web-based platforms include intranet, blogs, instant messengers; and social media. According to Crescenzo and Men (as cited in Men & Hung-Baesecke, 2015), the widely used communication mediums in organizations are phone, face-to-face, meetings, memo/letter, publications (magazine, reports, manuals, etc.), bulletin board, intranet, email, and social media. These communication medium can be categorized into oral communication media (phone, face-to-face, meetings), written or print media (memo/letter, publications, bulletin board), and electronic media (email, intranet, and social media).

In order to have an effective communication among employees, an appropriate medium must be used. Welch (as cited in Men & Hung-Baesecke, 2015) stated that effective communication depends on suitable messages delivered in forms that are acceptable and functional to employees. In other words, the medium must be fit and have a capacity to transmit the message appropriately from the sender to receiver. This indicates that, employees are required to choose and use the right communication medium to make any given message understood and heard. Lengel and Daft (1988) pointed out that a communication medium can enhance or distort the intended message. Therefore, if employees do not use appropriate communication medium for the message during communication, the message cannot be understood by the receiver and may not use that message to perform tasks, and as a result it can affect the performance. Therefore, employees need to determine the appropriate communication medium to communicate a particular information or message.

According to Lengel and Daft (1998), communication media differs significantly in the capacity to deliver information or message because of the physical characteristics of a medium can limit the kind and amount of message that can be carried and delivered. The characteristics of a communication medium include the ability to handle multiple information cues simultaneously, ability to facilitate rapid feedback, and ability to establish personal focus (Lengel & Daft, 1988). Therefore, the information richness of a

medium should be matched to needs for effective communication (Lengle & Daft, 1988). According to Lengle & Daft, richness means the information carrying capacity of media to communication needs that is based on the matching characteristics.

In addition, the MRT explains why a communication richness of a medium is more or less effective (Canessa & Riolo, 2004). According to MRT, communication richness refers to the ability of a communication media to transfer the required information cues so that individuals can understand within a short time interval. This is because, for MRT, the effectiveness of communication relates to establishing an understanding of the information exchanged between sender and receiver that actually overcoming the problems of equivocality and ambiguity if exist. It is therefore true that media with information richness allow the fast, unambiguous and unequivocal exchange of information or message (Canessa & Riolo, 2004).

Ngwenyama and Lee (as cited in Canessa & Riolo, 2004), however, explained that the organizational context in which the medium is used can change the richness of any communication medium. Ngwenyama & Lee argue that the sender and the receiver are part of the the organizational context and therefore they not only derive the meaning of the message from the information provided but also interpret the information based on the information they have at their disposal in terms of the knowledge of the other person, of the situation at hand and of the organization. However, the richness of the communication medium is still important because it determines the effectiveness of the communication. This implies that from the capacity of the medium to transmit a message point of view, the richness of the communication medium matters.

From the organizational context point of view, Lengle and Daft (1988) noted that message can be classified on a continuum of routine to non-routine. In non-routine communication, there is no common frame of reference between the sender and receive and hence there is greater potential for misunderstanding. This is because it is characterized by time pressure, ambiguity, and surprise. In such context, it requires rich

exchange of information to overcome ambiguity. Contrary, routine communications are simple, straight forward, rational, logical, and there is no surprise. Therefore, in routine communication, there is no need of rich exchange of information to achieve mutual understanding between sender and receiver. In order to have successful communication, rich media should be used for non-routine message and lean media for routine message. According to Lengel and Daft (1988), communication failure occurs when a rich media is used to convey routine message and rich medium for non-routine message.

In addition, Yates and Orlikowski (1992) discussed that employees need to determine when and with what consequences a particular communication medium is selected and used as employees can use appropriate media for different types of communication under various circumstances. Employees need to select and use media based on a continuum of the media capacity to provide immediate feedback, to convey multiple cues, to support personalization, and to accommodate linguistic variety. Thus, employees should select media based on MRT.

Sproull and Kiesler (as cited in Canessa & Riolo, 2004, p.148) noted that “for MRT, face-to-face communication is the richest media because it provides immediate feedback so that interpretation can be checked and also permits the exchange of multiple cues through body language, tone of voice and natural language.” Similarly, Yates and Orlikowski (1992) pointed out that the continuum runs from face-to-face interaction at the rich end through telephone communication, electronic mail, and personally addressed written letters and memos to general bulletins and standardized quantitative reports at the lean end. “Media such as impersonal written documents provide fewer cues and restricted feedback. These media are low in richness and inappropriate for resolving equivocal issues” (Canessa & Riolo, 2004, p.148).

Similar to the MRT determination of media richness, Lengel and Daft (1988) also pointed out that because face-to-face has the capacity for direct experience, multiple information cues, immediate feedback, and personal focus and deep emotional understanding of a

message, it is the richest medium. Telephone & electronic media provides right feedback but lacks the body language cues. Telephone and Electronic media (e-mail) are moderate in richness continuum. Although, written media such as memos, reports, and notes, convey limited cues and are slow in feedback, they can be personally focused. Impersonal written media such bulletin are the leanest because they are providing no personal focus on a single receiver, limited information cues, and not enabling feedback. However, whether the media is rich in terms of ability to facilitate rapid feedback, ability to establish personal focus, etc., each medium has an information capacity based on its ability to facilitate multiple cues, feedback, and personal focus (Lengl & Daft, 1988). Moreover, although each communication situation poses a richness demand determined by whether routine or non-routine, effective communication is a matching process between the richness of the medium and the nature of the message. Therefore, MRT is still important for choosing an appropriate medium for communication among employees in the manufacturing businesses.

In relation to current developments in communication technologies, according to Men and Tsai (as cited in Men & Hung-Baesecke, 2015), social media is particularly becoming important for organizational communication because of its unique, interactive, empowering, communal, participatory, and relational features. Huang et al. (as cited in Men & Hung-Baesecke, 2015) further stated that social media allows employees to engage in conversations across hierarchical levels, functional units, and regions. In addition, Huang et al. noted that with the democratic spirit of social media, it facilitates communication (upward and horizontal communication) among employees. This is because social media encourages employees to articulate their opinions and concerns, alternative views, participate, and foster a culture of learning and collaboration.

In relation to media and employee performance, Lengl and Daft, (1998) stated that low performing and high performing can be characterized by the medium used in communication. Employees use an appropriate medium for the appropriate continuum

leads to effective communication and better performance. If not, there will be ineffective communication that leads to poor performance. Therefore, this means that communication medium can have an influence on employee performance in an organization. Hence, it is relevant to examine communication medium as an independent variable for the dependent variable employee performance in this study.

2.4.4 Communication Climate

Communication climate can be defined as the internal environment of information exchange among people through a communication networks (Buchholz, 2001). Putnam and Cheney (as cited in Lee, 2014) stated that communication climate illustrates to the atmosphere in an organization regarding accepted communication behavior. Goldhaber (as cited in Kamasak & Bulutlar, 2008) also defined communication climate as the perception of employees with regard to the quality of the mutual relations and the communication in an organization. Communication climate, according to Pace (as cited in Nordin, et al., 2014), conceptually consists of employees' perceptions of the information flow and the climate in which the communication occurs. Jones and James; Pruyn and Riel (as cited in Lee, 2014) argued that communication climate is a psychological term offering to how individuals interpret their working environment in terms of communicative components, such as receptivity and trustworthiness of information being disseminated in the organization. Therefore, as this study adopts, communication climate can be simply defined as an environment of information flow in which employees perceive communication and an atmosphere in which communication take place.

Communication climate, according to Jones and James (as cited in Lee, 2014), resides on group level as a sum of the shared individuals' perceptions and interpretations. According to Structuration Theory (ST), communication climate is produced and reproduced through the interaction of members of the organization. It develops out of interaction between features of an organization and the individual's perceptions of those

features (Ahsanul, 2013). Similarly, Abdussamad (2015) pointed out that it develops from interaction among attitudes of an organization and individual perception of those attitudes. It is the people way of interacting towards the aspects of an organization to create a communication climate to enable them to react variously toward the organization through communication process. Therefore, and in this sense, communication climate is different from organizational climate in that communication climate involves perceptions of messages and message-related events occurring in the organization (Ahsanul, 2013).

Communication climate of an organization is important because, according to Poole (as cited in Ahsanul, 2013), it links the organizational context to the concepts, feelings, and expectations of organization members and helps explain the behavior of the organizations members. Through knowing about the climate of an organization, employees can better understand what impels organization members to behave in particular ways when they communicate (Ahsanul, 2013). Then, the employees would behave accordingly during communication among each other in the organization.

Furthermore, the communication climate of an organization, according to Redding (as cited in Ahsanul, 2013), is a function of how activities that occur in the organization demonstrate to the organization members. In this case, the organization trusts employees and allows employee the freedom to take risks; supports and gives employees the required responsibility in executing their jobs; openly provides accurate and adequate information about the organization; alternatively listens to and gets reliable and accurate information from employees. This indicates that communication climate has certain attributes in which organization members consider during communication and affects their communication attitudes as well as the flow of information that in turn influences the performance of employees.

According to Hoevan and Fransen; Pruyn and Riel (as cited in Lee, 2014), communication climate, consists of openness, trustworthiness, and participation in

decision-making. Openness refers to the degree of receptivity of employees' opinion being accepted, whereas trustworthiness refers to the degree of trustworthiness of disseminated information. Participation in decision-making refers to the employee opinion being heard and taken seriously. However, Pace and Faules (as cited in Abdussamad, 2015), identified six factors that need to be considered in communication climate in an organization. These are: trust, honesty, openness, willingness to listen, collegial decision, and performance oriented.

Trust, according to Pace and Faules, is a condition where employees at every level encourage developing and maintaining the relationship within the organization, the trust, the faith, and the credibility supported by the statement and the action. However, honesty is a general condition that consists of honesty and frankness. It is important to have relationships among employees within the organization so that employees are able and free to communicate their ideas without considering whether they talk to their fellow employees, their followers, or their leader.

Pace and Faules described openness as being open with communication except for the classified information. Thus, members of an organization should be relatively easy to access and exchange information that directly relates to their tasks. However, being open is not enough unless there is willingness to listen among employees in an organization. Willingness to listen refers to the will of the parties that engage in communication to communicate. Thus, members of the organization should have a will of listening in order for communication to take place among employees, which is required for information to be shared. Communication has no value unless what you communicate is heard properly.

The other important factor is the collegial decision. According to Pace and Faules, it refers to the situation where all employees are involved in the decision making process. In order to produce a quality decision that enables employees to produce the intended products, it is important to consider and involve employees in all levels of decision making processes by giving them a chance or opportunity to communicate and to consult

with their immediate supervisors. However, participative decision making process is not enough unless employees have a performance target. Performance Target means that personnel in all level of organization should show commitment for high performing objectives, high productivity, high quality, low cost, as well as high focus should be shown to other members of organization.

Taking these factors (openness, trust, honest, willingness to listen and communicate) into consideration, communication climate can be seen generally in to two perspectives. These two perspectives are either in open or closed communication climate (Nordin et al., 2014).

2.4.4.1 Open Communication Climate

According to Smidts et al. (as cited in Hewitt, 2006), open communication climate is built upon strong relationships between the organization and its employees. It occurs where two-way communication is prevalent, which in turn is dependent on openness, mutual respect and trust. It also occurs where employees feel that they have a voice and that their views are taken seriously. In an open communication climate, according to Buchholz (2001), information flows freely and employees feel free to express opinions and offer suggestions to their superiors or colleagues. Also, employees talk freely among themselves about work related issues. In open climate, information flows and passes without distortion upward, downward, and horizontally throughout the organization. This increases the sense of belongingness and self-worth for each employee (Ergen, 2010).

Open communication, according to Rosenberg and Rosestein (as cited in Nordin, et al., 2014), enhances productivity as well as profitability towards an organization and helps employees to consider themselves as self enhancement in the organization, and hence influences employee's performance. Open communication climate has at least three distinct characteristics: it is supportive, participative, and trusting (Buchholz, 2001).

In supportive environments, employees communicate more readily and are considered as vital sources of information crucial to the organization's success (Buchholz, 2001). With supportive communication environments, employees can be encouraged to be active participants in communication and would engage in healthy exchange of information (Nordin, et al., 2014). In supportive environments, for instance, employees convey information to superiors without hesitation, confident that superiors will readily accept it, whether good or bad, favorable or unfavorable. Because supportive superiors are seen as non-threatening, perhaps even nurturing, employees will usually open up to them and share the required information (Buchholz, 2001).

In participative environment, employees feel that what they say counts for something. Employees share information related to their tasks with their colleagues or management in terms of, for instance, ways to improve the work processes, challenges that they face and share what they think to be the solution to overcome these challenges, etc. Participative environment creates an opportunity to employees to participate in decision making related to their specific tasks. Particularly, the best suggestions for improving production processes, for example, come from employees who work every day in the production process (Buchholz, 2001). Thus, employees share information if management regards them as legitimate participants in the organization. If employees know that they are valued participants, like when their suggestions are implemented, their questions answered, and their concerns recognized, they are more effective in communication and ready to participate in decision making processes related to their tasks (Buchholz, 2001). Consequently, employees implement the decision and can perform efficiently and effectively. Hence, according to Smidts, Pruyn and Riel (as cited in Lee, 2014), an open and participative communication climate can positively affect employees and encourage them to perform well since their participations are regarded as contributions to the organization.

In a trusting environment, trust among employees flourishes. Trust, according to Thomas et al. (as cited in Ergen 2010), is the embedded beliefs about the other party that are shaped through information and communication. However, according to Abdussamad (2015), trust is a condition where employees at every level encourage developing and maintaining the relationship within the organization, the trust, the faith, and the credibility supported by the statement and the action. Thus, employees involved in information exchange must tell the truth as they perceive it. They must also ensure that information is correct and credible. Credibility is any employee's greatest asset. A reputation for carelessness, lying, deceit, or manipulation undercuts all future messages. The result of credibility is trust and it underpins all human relationships. Employees have to believe their information sources. Repeated flow of contradictory information can destroy the integrity of communication among employees in the organization (Buchholz, 2001). Consequently, it would be so difficult to obtain the needed information to execute the tasks. Thus, trusted communication environment is needed in order to have effective communication among employees in an organization. Above all, for the communication climate to remain open the information must be true and the source trusted. Belief in the source's ability to convey accurate information and to follow through with appropriate action is thus essential in maintaining open communication and maintaining a great relationship among employees (Buchholz, 2001).

According to Neves and Eisenberger (as cited in Nebo et al., 2015), employees who have open lines of communication are more likely to build effective work relationships among themselves. As a result, employees performance can be enhanced which will lead to more contribution and increase organizational productivity in terms of quantity and quality of products.

2.4.4.2 Closed Communication Climate

In closed communication climate, information is blocked and there is no free flow of information (Buchholz, 2001). In this environment, the basic characteristics of open

communication climate, and the six factors of communication climate are no existent. Instead, closed communication environment is characterized by defensive and barriers to open communication environment.

According to Buchholz (2001), open communication climate is derived from the nature of the people participating in the information transactions. However, a barrier to open communication ultimately spring from an individual's unfavorable past experiences. Buchholz further noted that our nature and background shape our values, beliefs, opinions, attitudes, and expectations. This is because our sense of self-worth and dignity evolve from our nature and background. However, people often erect barriers to defend from attack.

In relation to defensive barriers, employees, for example, whose egos cannot tolerate criticism, simply will not share information that exposes them to personal critique and if such employees somehow rise to supervisory or management levels, they are usually comfortable only in giving unquestioned orders and directives, intending to routine, and in operating within thoroughly controlled, self-protective, situations (Buchholz, 2001).

Defensive climate/environment may be marked by the need to close down communication because information sharing poses some kind of short-term, tactical disadvantage or discomfort. In protecting themselves, employees may put everyone at risk by withholding information crucial to performing a specific task. Besides, self-defense ultimately inhibits honest exchange of information (Buchholz, 2001). In other words, as Becker, Halbesleben and O'Hair (as cited in Eadie, 2009) stated that defensive communication involves a self-perceived flaw that an individual refuses to admit to another person, sensitivity to that flaw, and an attack by another person that focuses on the flaw.

Further, in defensive communication climates, employees have the tendency to abstain from communicating their needs, as they become very cautious in making statements,

and may have low level of motivation to communicate (Nordin et al., 2014). Consequently, it influences employees negatively and may not perform as required because of lack of required information to execute their tasks.

Based on the above discussion, the six factors identified by Pace and Faules can be incorporated into the two perspectives of communication climate (open and closed communication climate). If there is openness, trust, honesty, collegial decision, willingness to communicate or listen, and commitment to high performance among employees of an organization, then it can be said that there is open communication climate, otherwise there will be closed communication climate because defensive and barriers to open communication are prevalent. Therefore, it is quite acceptable to look at the communication climate of manufacturing businesses from these two perspectives.

Therefore, communication climate is paramount in manufacturing businesses because it contributes to the success of those businesses. The communication climate of manufacturing businesses may influence the atmosphere in the organization which either encourages or hinders horizontal, upward or downward communication among the employees (Nordin et al., 2014). Because communication climate, according to Muchinsky (as cited in Lee, 2014), is formed based on the context constructed with a sum of employees interpretations, it affects the employees. Moreover, communication climate significantly influences performance of the organization, because climate affects the effort of an organization member (Ahsanul, 2013). Abdussamad (2015) also concluded that employee performance can be significantly influenced by the organizational communication climate.

Hence, considering the above arguments, communication climate can influence employee performance because they determine the free flow and exchange of information within the organization as well as the accuracy and credibility of the information that would be exchanged among employees in the manufacturing businesses. As a result, open communication climate enhances employee performance

whereas closed communication climate weakens employee performance because it closes the free flow and exchange of information within the organization. Therefore, it is important to look at the communication climate as an independent variable influencing employee performance in this study.

2.4.5 Employee Performance

According to Balyan (as cited in Nwata et al., 2016), organizations are set up to accomplish specific goals. For these goals to be accomplished the performance of employees becomes crucial. According to the HRT, employees are the main assets of an organization because they play a great role in organizational performance. Organizational performance can't be achieved without ensuring the individual employee performance. Ruth and Balyan (as cited in Nwata, et al., 2016) suggested that one of the goals of business owners is to make profits, and the success of organization rests on the performance of employees as poor performance is damaging to organization's achievement. Also, Gabriel (as cited in Nwata et al., 2016) stated that the achievement of organization depends on how well or badly employees do their job in the organization. An organization that understands the effect of their employees well will be in position to harness employees output and the rate at which they produce. In addition, Hikmah (2015) emphasis that the performance of an organization is the accumulation of the performance of all organization units, that is, the summation of everyone's performance. Therefore, employee performance is crucial for an organization to achieve the desired performance.

According to Abdussamad (2015), the term performance is derived from the job performance or actual performance. It means work achievement or the real achievement achieved by someone. Beirut (as cited in Nebo et al., 2015) noted that performance is about doing the work and about the results achieved. Hasibuan (as cited in Abdussamad, 2015) noted that performance is a result of work achieved by someone in implementing the tasks that has been given to him/her based on his/her competency, experience,

commitment, and time. Thus, performance refers to a level of achievement of specific task (Hikmah, 2015).

The theory of performance also explains that, to perform is to produce valuable results through a complex series of actions that integrate knowledge and skills (Elger, 2007). A performer is an individual or a group of people working in collaboration to produce the results (Elger, 2007). This implies that an individual employee performance in an organization is important because the employee is the performer. It can thus be noted that employee performance refers to an individual's work achievement after applying the required efforts on the job (Pradhan & Jena, 2017). Therefore, the performance of an individual employee is related to their work related behaviors or actions that results to outputs and outcomes (Krausert, 2009; Bose, 2018). According to Krausert (2009) performance results or outputs are immediate and tangible consequences of behaviors whereas outcome is organizationally relevant consequences related to employee performance that can be influenced by other factors including competitiveness in markets.

However, the Research Team of Development of Accountability System for Performance Government (as cited in Hikmah, 2015) explained that performance is the degree of effectiveness and efficiency and ability in the achievement of the objectives by the management and the divisions that exist within an organization. In line with this, Prabu (as cited in Hikmah, 2015) described performance as the result of the quality and quantity of work achieved by an employee in carrying out his duties in accordance with the responsibilities assigned to him. Therefore, employee performance can be seen as a level of achievement of specific task in terms of efficiency and effectiveness. However, according to Campbell et al. (as cited in Sonnentag & Frese, 2002, p.4), "only actions that can be scaled or measured are considered to constitute performance." This implies that employee performance should be subject to performance evaluation or measurement.

Performance measurement, according to Upadhya, Munir, and Blount (as cited in Nebo et al., 2015), is the process of collecting, analyzing, and reporting information on the performance of an individual, group, organization, system, or component. It can involve a review of processes, strategies, approaches, and parameters to track performance against intended targets. For instance, O'Boyle and Hassan, (as cited in Nebo et al., 2015), measured performance on the bases of capabilities in carrying out obligations by employee in an organization. Hakala (2008) also identified 16 indicators of performance to measure employee performance. These are: Quantity, Quality, Timeliness, Cost-Effectiveness, Creativity, Absenteeism/Tardiness, Adherence to Policy, Gossip and Other Personal Habits, Personal Appearance/Grooming, Manager Appraisal, Self-Appraisal, Peer Appraisal, Team Appraisal, Assessment Center, Full-Circle Appraisal, and MBO (Management by Objectives). Bernardin & Russell (as cited in Abdussamad, 2015) proposed six points of performance evaluation or measurement, namely: quality, quantity, timelines, cost effectiveness, need for supervisor, and interpersonal impact. However, according to Nebo et al. (2015), performance level is a function of the efficiency and effectiveness of enterprise operations, and therefore, measurement of performance is the process of quantifying the efficiency and effectiveness of an organization. Bounds et al.; and Robbins (as cited in Bartuseviciene & Sakalyte, 2013) also noted that common measures of employee performance are efficiency and effectiveness. Thus, performance is the degree of efficiency and effectiveness (Hikmah, 2015). In addition, the research team of Development of Accountability System for Performance Government and Prabu (as cited in Hikmah, 2015) noted that performance is the result of quantity and quality of work achieved by an employee.

Efficiency, according to Chavan (as cited in Bartuseviciene & Sakalyte, 2013), relates to the optimal use of resources to achieve the desired output. Low (as cited in Bartuseviciene & Sakalyte, 2013) also pointed out that efficiency measures relationship between inputs and outputs or how successfully the inputs have been transformed into outputs. Thus, efficiency can be characterized by the quantity of the products produced.

Whereas effectiveness, according to Low (as cited in Bartusevicienė & Sakalyte, 2013), measures the degree to which a business achieves its goals or the way outputs interact with the economic and social environment. It takes into account quality, creation of value added, employee satisfaction, and output interaction with the social and economic environment. However, the quality of the product is determinant since the other elements such as creation of value added, employee satisfaction, and output interaction depend on the quality of the product. Thus, effectiveness can be characterized by the quality of the products.

Because effectiveness and efficiency are exclusive, yet, at the same time, they influence each other, it is important to ensure the success in both areas (Bartuseviciene & Sakalyte, 2013). Therefore, employee performance can be measured by efficiency and effectiveness in manufacturing businesses since both indicators determine the achievement of employees. Consequently, it is reasonable to consider efficiency and effectiveness, which are characterized by the quantity and quality of products respectively, as indicators of employee performance.

Employee performance, however, can't be achieved without effective communication among employees in the organization. Nwata et al. (2016) described that effective communication is important for better employee performance. Tayo and Olamigoke (as cited in Nwata et al., 2016) also explained that there is no way performance of employees could be enhanced without communication or interactions with one another as communication permits people or employees in an organization to give and receive information. Communication enables a constant sharing of experiences, thoughts and opinions. It provides means for employees to express their ideas and knowledge. In addition, Akosi (as cited in Nwata et al., 2016) pointed out that whether it is a face-to-face interaction or a professionally written or e-mail exchange, a meaningful information requires setting up a connection that leaves a strong thought that can lead to better employees performance. This means that communication is important for sharing

meaningful information for improved performance in an organization. It is therefore important to consider employee performance as dependent variable in this study.

2.5 Empirical Review of Literature Relevant to the Study

The literature available on communication in general and organizational communication in particular shows the importance of communication on organizational success. In addition to the literature review, it is also important to review some empirical studies conducted in relation to communication and performance as a basis for this study. Essentially, a number of empirical studies have been conducted on organizational communication and performance in various ways but still it remains an area of great research interest. Some of the relevant studies that have been reviewed are identified and discussed as follows:

2.5.1 Empirical Review Related to Organizational Communication and Performance

Femi (2014), in his research on The Impact of Communication on Workers' Performance in Selected Organisations in Lagos State, Nigeria, examined the significant relationship between communication and workers' performance, productivity & commitment. The findings revealed that a relationship exists between effective communication and workers' performance, productivity and commitment. The researcher used a descriptive research design and collected data through questionnaire with sample population of 120 respondents.

Bery et al. (2014) also conducted a research on the Effects of Employee Communication on Organisation Performance in Kenya's Horticultural Sector with the aim of exploring the effect of employee communication on organization performance in Kenya's horticultural sector. The findings show that employee communication is a major determinant of organizational performance in the horticultural sector in Kenya. The study was carried out in flower farms in Kenya. It targeted the employees in all flower

farms in Kenya which were the 14 flower farms registered in the KFC directory (2013) and based in Naivasha. The researchers used cross sectional survey research design and stratified sampling technique and a total of 2460 respondents were considered. Data was collected through questionnaires and analyzed using both quantitative and qualitative data analysis techniques. Quantitative data was analyzed using descriptive statistics while qualitative data was analyzed thematically. They conducted the research using three independent variables, i.e. employee communication, employee involvement and the human resources procedures.

Another study was done by Rajhans (2012) on Effective Organizational Communication: A Key to Employee Motivation and Performance. The researcher explored the interrelationship between communication and motivation & its overall impact on employee performance. The study was conducted through a comprehensive review and critical analysis of the research and literature focused upon the objectives of the study. However, the researcher enumerates the results of a study of organizational communication and motivational practices followed at a large manufacturing company, Vanaz Engineers Ltd., based in Pune, India. The methodology used for this manufacturing company was interviews of the employees of Vanaz Engineers Ltd. and communication efforts recording sheets given to them. The interviews and the communication efforts sheets were completed by 10% of the company population, randomly selected according to each department's population base. The study revealed Vanaz Engineers Ltd. implemented various effective organizational communication practices which contributed a lot to motivate its employees and increase their performance and loyalty towards the organization. In the study, employee motivation was the mediating variable to the organizational communication and performance.

Another study done by Udegbe (2012) examined The Impact of Business Communication on Organizational Performance in Nigerian Companies (manufacturing and service companies) using a contextualized and literature based research instrument

to measure the application of the investigated “constructs”. The variables that were considered are exchanging opinion, encouragement of two-way communication, providing feedback, consideration of medium of communication, and amongst others, support effective business communication and contribute to improved job satisfaction, profitability and public credibility. They used survey method and data was collected from 100 small and large manufacturing and service companies operating in Lagos State of Nigeria. Data was analyzed using descriptive statistics, percentages and t-test analysis. According to the findings, business communication generally affects organizational performance to a reasonable extent in Nigerian companies.

In line with the above studies, Nebo et al. (2015) examined The Role of Effective Communication on Organizational Performance: A Study of Nnamdi Azikiwe University, Awka. The survey research method was adopted for the study and the study relied more on secondary and primary data. The population of the research work was drawn from the Academic and Non-academic staff of UNIZIK. The population was made up of 170 non-academic and 130 Academic Staff. The sample size of 166 was determined using Taro Yamane technique and selected through stratified random sampling. Chi-square (x^2) was used to analyze the hypotheses. The researcher considered two important aspects of organizational communication: communication structure and channels, and the three Es: Economy, Efficiency & Effectiveness to measure organizational performance. The research findings indicated that there is a significant relationship between effective communication and employee performance in UNZIK

Shonubi & Akintaro (2016) also studied the Impact of Effective Communication on Organizational Performance based on a series of empirical studies of communication and organizational performance. The findings validated the synerginous relationship between communication approaches and efficient organizational performance. Although,

the study was not empirical itself, but based on previous empirical studies, they had tried to consider the important aspects of organizational communication.

2.5.2 Empirical Review Related to Communication Patterns and Employee Performance

Owusu-Boateng and Jeduah (2014) studied the Effects of Organizational Communication on Employee Performance on Agricultural Development Bank, Tamale considering the communication flows (formal & informal as well as top-down & upward) in the organizations. The study considered the three branches in the Tamale Metropolis: Tamale Main, Aboabo and Kaladan. Using a combination of both simple random sampling and stratified sampling, 36 employees were selected from the banks. Questionnaires and interviews were used to collect data from employees of the bank, and data was analyzed using both quantitative and qualitative methods. The research findings indicate that there is a correlation between effective communication and performance of employees. The results further showed that formal, top-down pattern of communication is predominantly used in the bank.

Additionally, Bhatia and Balani (2015) studied Effective Internal Communication: A Crucial Factor Affecting Employee Performance. They investigated the relationship between internal communication and employee performance in public sector organizations in Bangalore city, Karnataka, India, by considering the formal and informal communication as well as upward and downward communication. Data for the study was collected using questionnaire as a research instrument with sample population of 40 respondents. The result of the study reveals that a significant relationship exists between internal communication and employee performance.

2.5.3 Empirical Review Related to Communication Structure and Employee Performance

Nwata et al. (2016) investigated empirically the association between Internal Organizational Communication and Employees' Performance in Selected Banks in Port

Harcourt. The researcher examined the effect of internal organizational communication through communication dimensions (downward communication and upward communication) on employee performance. The study used descriptive and inferential statistical methods. Data was generated from a sample of 315 respondents. The results showed a significant effect of the dimensions of internal organizational communication (downward communication and upward communication) on the measures of employee performance (employee efficiency and employees effectiveness).

Ali (2016) also investigated The Influence of Internal Communication Channels on Employees Performance in Non-Profit Organizations in Somalia. The study focused on the effect of downward, upward and peer-to-peer communication on employee performance. The design of study was a descriptive survey research design. The study considered a population size of 300 employees at Help Leads to Hope organization in Somalia. The sample size of the study was 136 employees, who were selected using a stratified random sampling technique. Data was analysed using descriptive and correlation statistics. The study concluded that downward and peer-to-peer communication had significant and positive association with employee performance. The study further concluded that upward communication was poor and it had no significant association with employee performance.

Another relevant study was done by Atambo and Momanyi (2016) to explore the Effects of Internal Communication on Employee Performance: A Case Study of Kenya Power and Lighting Company, South Nyanza Region, Kenya. The specific objectives of the study were to establish the effects of downward communication, upward communication and horizontal communication on employee performance. The study targeted a population of 256 employees in the South Nyanza Region, in which a sample of 30% of the population was taken using stratified random sampling. Data was collected using questionnaires and analyzed using computer based Statistical Package for Social Sciences (SPSS). The findings indicate that effective communication through these

communication structures or directions has an effect on performance. Thus, the research concluded that effective communication can enhance employee performance.

A similar study had also been done by Hikmah (2015) on the Effect of Organizational Communication towards Employees' Performance of the Badan Pendidikan Dan Pelatihan in Makassar City, Indonesia. The findings indicated that the organizational communication in Badan Pendidikan dan Pelatihan in Makassar City is in good condition and affects employees' performance satisfactorily. This was noted from the use of effective bottom communication, effective upward communication, and effective horizontal communication. The researcher used descriptive and qualitative method. Quantitative and qualitative data was collected. The researcher used primary data, which was observed and recorded, and secondary data from relevant documents. The population of this research was all the 44 employees in Badan Pendidikan dan Pelatihan in Makassar city.

2.5.4 Empirical Review Related to Communication Climate and Employee Performance

Ahsanul (2013) studied the Role of Communication Climate in Organizational Effectiveness. The study noted that climate in general and communication climate in particular serve as a strong mediating factors between elements of the work system and different measures of organizational effectiveness such as productivity, quality, satisfaction, and vitality. From the findings, the researcher concluded that communication climate significantly influences productivity of the organization. This is because climate affects the effort of an organization member and it contributes to the potential effects on restructuring, reorganizing, and revitalizing the basic elements of organization.

Another related study with communication climate was done by Abdussamad (2015) on The Influence of Communication Climate on the Employees' Performance at Government Agencies in Gorontalo City (an Indonesian case study). It aimed at finding

out to what extent the influence of communication climate had on the employees' performance at Industry, Trade, Cooperation, Small and Medium Enterprise and Investment Agency of Gorontalo city. The researcher used survey method and analyzed the data using correlation and regression analysis. To analyze the communication climate of an organization, the researcher used six main factors that are identified by Pace and Faules (2000). These are: trust, collegial decision, honesty, openness, willingness to listen, and performance oriented. The research revealed that there was a significant influence of organizational communication climate towards employee performance at the agencies.

Kamasak and Bulutlar (2008) also examined The Impact of Communication Climate and Job Satisfaction in Employees' External Prestige Perceptions. While conducting this study, data was collected from a sample of 375 employees and analyzed using the three stages multiple regression method to test the mediating effect of job satisfaction, and hierarchical regression analysis to test the moderating effect of communication climate. The results indicated that job satisfaction mediated the relationship between communication climate and PEP, but communication climate did not have a moderating effect on PEP.

2.6 Critique of Existing Literature Relevant to the Study

The empirical research reviewed above show that communication in general and organizational communication in particular has a role in organizational and employee performance. Studies conducted by Bery et al. (2014), Femi (2014), Rajhans (2012), Udegbe (2012), and Nebo et al. (2015) revealed that there is a relationship between communication and organizational performance. However, many of those studies were done based on the notion of organizational communication effect and the impact on performance.

In addition, most of the reviewed research study had been conducted by using appropriate research methodology in terms of sampling techniques and analysis of data in relation to their proposed hypothesis even though all of them had not used the same statistical analysis techniques. Some used only quantitative data such as Nebo et al. (2015). The researcher Nebo et al. (2015) used Chi-square for analyzing the quantitative data but Udegbe (2012) used t-test statistical analysis techniques for the quantitative data. Other researchers such as Bery et al. (2014) used both descriptive and qualitative analysis. The researcher Bery et al. (2014) used descriptive statistics for the quantitative data and thematic technique of content analysis to analyze the qualitative data.

However, almost all of the reviewed empirical studies had been done in non-manufacturing businesses. No study has been done considering organizational communication and employee performance in the manufacturing businesses of Eritrea. For instance, Nwata et al. (2016), Owusu-Boateng and Jeduah (2014), Atambo and Momanyi (2016), Bhatia & Balani (2015), and Hikmah (2015) conducted their study on non-manufacturing businesses but Udegbe (2012) conducted the study by considering both the manufacturing and service companies in Nigeria while Bery et al. (2014) examined the Kenyan horticulture sector.

In relation to the specific communication patterns, the reviewed studies have not adequately addressed the effect or impact of formal and informal communication on employee's performance in terms of work efficiency and effectiveness. Bhatia and Balani (2015), for instance, considered the formal and informal communication in their study on public sector organizations. The relationship between communication and employee performance was not based on specific indicators of employee performance in terms of work efficiency and effectiveness.

The upward, downward, and horizontal communication relationship with employee performance was also not well established by considering the relevant elements. Nwata et al. (2016) had examined only the upward and downward communication as

independent variables to employee performance although they considered the efficiency and effectiveness as performance indicators. Nwata et al. did not include the horizontal and diagonal communication. Similarly, Owusu-Boateng and Jeduah (2014) only considered the upward and downward communication. However, Hikmah (2015) considered the upward, downward, and horizontal communication but did not show their relationship to employee performance in terms of work effectiveness and efficiency. Therefore, the relationship between communication structure and employees performance has not been properly addressed by considering all the relevant elements or aspects of the communication structure.

In regard to communication climate, the studies reviewed did not address the relationship between organizational communication and employee performance in relation to the specific indicators of employee performance such as work efficiency and effectiveness. A study by Ahsanul (2013) revealed that there is a relationship between communication climate and productivity in terms of efforts by employees. This means that Ahsanul (2013) did not consider the two important indicators of employee performance (efficiency and effectiveness). A similar study also done on communication climate by Abdussamad (2015) considered the six factors identified by Pace & Faules (2000) in relation to employee performance at government agencies. However, Abdussamad (2015) did not consider the two specific employee performance indicators, efficiency and effectiveness.

In regard to communication medium, almost all of the studies that have been reviewed did not consider the effect or impact or influence of communication medium on employee performance in business organization. However, Nebo et al. (2015) considered communication structure and channels and the three Es: Economy, Efficiency and Effectiveness. But the study was done on academic institutions and all the channels were not examined. Therefore, a research examining the influence of organizational

communication on employee performance in selected large manufacturing businesses in Eritrea was important to be conducted.

In general, most of the reviewed studies did not specifically use work efficiency and effectiveness as indicators of employee performance and the studies were done on non-manufacturing businesses. Even though a study by Rajhans (2012) was done on manufacturing business, it showed the relationship between organizational communication and employee performance through certain mediating factors such as employee motivation. Therefore, the reviewed studies did not show the direct effect or influence of organizational communication on employee performance in manufacturing businesses. In order to conclude that organizational communication has an influence on employee performance in manufacturing businesses, the critiques that have been identified above had to be addressed empirically just like this study was expected to address.

2.7 Research Gaps

Many of the reviewed studies have been carried out in relation to organizational communication and performance such as studies conducted by Femi (2014), Udegbe (2012) and Bery et al. (2014). However, as indicated in the critiques, most of the studies such as studies conducted by Nwata et al. (2016), Owusu-Boateng and Jeduah (2014), Atambo and Momanyi (2016), Bhatia and Balani (2015), and Hikmah (2015) had been done in non-manufacturing businesses. The organizational communication aspects such as the communication patterns, communication structure, and communication climate have not been addressed adequately in relation to efficiency and effectiveness of employee performance. As per the reviewed empirical studies, none of the studies dealt with the influence, effect or impact of communication medium on employee performance. Above all, the reviewed empirical studies did not show the direct effect or impact or influence of organizational communication on employee performance in the manufacturing sectors in general and in the manufacturing sectors of Eritrea in

particular. For instance, studies done by Rajhans (2012) used “employee motivation” as a mediating variable, and Bhatia and Balani (2015) considered the formal and informal communication in their study on public sector organizations. As such, the researcher identified these research gaps. Thus, there is a research gap in terms of the direct influence of organizational communication on employee performance in the manufacturing sector considering work efficiency (quantity of products) and effectiveness (quality of products). Nwata et al. (2016) noted that communication has an effect on employee performance in organizations. In addition, there is a gap in terms of lack of empirical studies on the influence of communication medium on employee performance. The MRT noted that task performance is improved when appropriate media is used to deliver the information. Therefore, this study intended to bridge these research gaps by examining the direct influences of organizational communication on employee performance in selected large manufacturing businesses in Eritrea.

2.8 Summary

The chapter presented the literature review in relation to organizational communication and employee performance. It discussed the relevant theories that guided this study. The theories are the human relation theory, the media richness theory, the social network theory, structuration theory and the theory of performance. The HRT theory noted that employees are human and should be treated as human beings. The HRT theory also noted that employees should work as a group by forming relationships (formal or informal relationships) among themselves. The MRT suggests that employees should use appropriate media in terms of the richness of the media and the message that need to be processed because organizations use a variety of communication media in relation to the organizational context. The SNT theory also shown that strong and close connections (relationships) between network employees promote free exchange of information among network members that help them to achieve their tasks. Based on the ST, communication is a dually action and structural reproduction and hence

communication climate is the product of ST as employees in manufacturing business create a climate through their actions; their actions are in return shaped by that climate through processes of structuration. Lastly, the theory of performance noted that employees in the manufacturing sectors produce a direct result (task performance) that can be measured in terms of productivity.

The chapter also presented and discussed the conceptual framework of this study and discussed the variables in detail. The variables that were considered and reviewed are communication patterns, communication structure, communication medium, and communication climate as independent variables as well as employee performance as dependent variable. The communications patterns are characterized by formal and informal communication whereas communication structure is characterized by vertical communication (downward and upward Communication), horizontal communication and diagonal communication. The communication medium is also characterized by oral communication, written/print, and electronic media whereas the communication climate is characterized by open and closed communication climate. The employee performance is characterized by productivity (quantity and quality of products).

Lastly, the chapter reviewed the previous empirical studies conducted in relation to this study and some critiques were identified and discussed. The reviewed empirical researches show that communication in general and organizational communication in particular has a role in organizational and employee performance. However, almost all of the reviewed empirical studies had been done in non-manufacturing businesses and no study had been done considering manufacturing businesses from Eritrea. In addition, most of the reviewed studies did not specifically use work efficiency and effectiveness as indicators of employee performance. However, few studies were done on manufacturing business but only shown the relationship between organizational communication and employee performance through mediating variables such as employee motivation. Thus, the reviewed studies did not show the direct effect or

influence of organizational communication on employee performance in manufacturing businesses. In addition, none of the reviewed studie had shown empirically the influence of communication medium on employee performance. Therefore, it was essential to conduct this study considering the theories and variables identified.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In order to ensure validity and reliability as well as credibility and dependability of a research product, it is important to define the research procedures or methodologies that a researcher has followed. Therefore, this chapter discusses the methodology of the research that was utilized or followed in this study. It discusses the research design, the target population, sampling and sampling techniques, data collection procedures and instruments, piloting, as well as data presentation and analysis.

3.2 Research Design

According to Creswell (2014), a research design is a type of inquiry within qualitative, quantitative, and mixed method approaches that provide specific direction for procedures in a research. It shows all the major components of the research project and how they are organized to work together in answering the research questions (Kombo & Tromp, 2011). Its main purpose is to protect the study from various threats to validity and reliability as well as threats to credibility and dependability in case of qualitative analysis (Fischer et al., 2008). It is therefore important to identify the research design.

The research design for this study was the convergent parallel mixed methods design. It is a form of mixed method design that refers to the simultaneous independent data collection and analysis to the quantitative and qualitative data in which results are merged to provide a more complete understanding of a phenomenon (Sweeney, 2016). It is the use of concurrent timing to conduct the quantitative and qualitative studies during the same phase of the research processes. Thus, the researcher converges or merges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem (Creswell, 2014). This means that triangulation research method was used for this study. Triangulation was used to gain the advantages of both the qualitative

and the quantitative approach because each method offers specific advantages as well as disadvantages. Above all, the purpose of Triangulation in specific contexts is to obtain confirmation of findings through convergence of different perspectives (Yeasmin & Rahman, 2012). The triangulation of these methods was done at the point of discussion of the findings. Side-by-side triangulation approach was adopted. Thus, the quantitative findings were first presented and then followed with the qualitative findings and the theoretical aspects as required either to prove or disprove the findings.

Although this study leaned more on quantitative method, it also considered some aspects of qualitative method in order to neutralize the weaknesses of quantitative method and be able to conduct a comprehensive research. In addition, it was important to consider the qualitative method because not only to ensure validity and reliability but also credibility and dependability of the research in addressing the research problems. Therefore, this study involved both the qualitative and quantitative data. Thus, this study adopted the convergent mixed method design that involved and obtained both qualitative and quantitative data. Therefore, the convergent parallel mixed methods design was relevant as a research design for this study.

3.3 Target Population

In statistics, a population refers to groups of people or objects that have similar characteristics from which a sample is drawn. A research population is nothing but a population that is subject for investigation. Bobbie (2001) defined research population as groups of people or objects or texts with similar characteristics that a researcher wishes to investigate. Therefore, the unit of analysis for this study was the individual employee of the selected large manufacturing businesses in Eritrea. Thus, the target population of this study was employees of the selected large manufacturing businesses in Eritrea with a total population size of 4175 employees as indicated in Table 3.1.

According to the manufacturing establishment of the Ministry of Trade and Industry, There are 27 large manufacturing businesses in Eritrea and from this number 17 of the large manufacturing businesses are in the central region, Asmara (see Appendix 3). However, 2 of the large manufacturing businesses in Asmara, ZAER Textile and Natsinet Enterprise Textile, were not involved in this study. This is because during the preliminary assessment, ZAER Textile was not cooperative while Natsinet Enterprise Textile was not functioning. In addition, Saba Shoe Factory, which was selected randomly, was used for piloting. Therefore, as indicated in Table 3.1, this study considered only 14 large manufacturing businesses that are based in the central region of Eritrea.

Table 3.1 List of the selected large manufacturing businesses

Se. No.	Name of Manufacturing Business	No. of Employees
1	Sembel Metal & Wood Works	977
2	Baroco Eritrea	756
3	Asmara Brewery Corporation	464
4	Red Sea Bottlers	261
5	Eritrea Textile	243
6	Dahlak Shoe	219
7	Sabur Printing Services	217
8	Asmara Meat & Dairy Products	216
9	Keih Bahri Food Products	196
10	Margran PLC	180
11	Wina House Hold Utensils	126
12	Space 2001 Eritrea	111
13	Arag Wood & metal Work	105
14	Hawashait Garment	104
	Total	4175

Source: Ministry of Trade and Industry, Eritrea (See Appendix 3)

3.4 Sampling Frame

Sampling frame is a list of people or item that form a population from which a sample is drawn. According to Sekaran (2003), sampling frame is a list of all members of the

population from which a representative sample is drawn for the purpose of research. Hence, this research adopted a single-stage sampling frame or design. A single-stage sampling design is one in which the researcher has access to names in the population and can sample the people (or other elements) directly (Creswell, 2014). Therefore, for the purpose of this study, a list of large manufacturing businesses in Eritrea was required and was obtained from the Ministry of Trade and Industry, Eritrea (see appendix 3) from which the large manufacturing businesses for the study were obtained as indicated in Table 3.1. Then, from each of these selected large manufacturing businesses, lists of employees for each department of the manufacturing businesses were obtained from which then samples of employees for each department were drawn proportionately and randomly.

3.5 Sampling and Sampling Techniques

According to Kothari (2004), sampling is a process by which a relatively small number of individuals, objects or events are selected in order to infer the findings about the entire population. However, since the research design of this study was convergent parallel mixed methods design, the sample sizes for both the qualitative (interview) and quantitative data collection process was not the same. The sample size for the qualitative aspect was smaller than that for the quantitative aspect. This is because the intent of data collection for qualitative data was to locate and obtain information from a small sample but also to gather extensive information from this sample, whereas in quantitative research, a large sample size was needed in order to conduct meaningful statistical tests (Creswell, 2014).

3.5.1 Sampling and Sampling Techniques for Quantitative

For the quantitative aspect of this study, first, it was important to determine the total sample size of the study. The total sample size was determined using the statistical formula for determining sample size from a population. This was calculated by using Taro Yamane, which is a simplified formula to calculate a sample size (Israel, 1992).

The formula ensures that the sample size is the true representation of the population.
The formula is:

$$n = N / [1+N(e)^2]$$

Where, n = total sample size of the study
 N = total population size of the study
 e = sampling error (margin of error)

Sampling error is the range in which the true value of the population is estimated to be and is often expressed in percentage points (Israel, 1992). Hence, this study considered 5% of sampling error with 95% of confidence level in which samples have the true population value.

Since the total population size (N) of this study was 4175 employees and considering a sampling error (e) of 5%, the total sample size (n) of this study was:.

$$\begin{aligned}n &= N / [1+N(e)^2] \\n &= 4175 / [1+4175(0.05)^2] \\n &= 365\end{aligned}$$

Therefore, a sample size of 365 employees of the selected large manufacturing businesses in Eritrea was used for the quantitative aspects of this study. Once the total sample size of the study was determined, the sample sizes of employees for each of the selected large manufacturing businesses were determined proportionately using the following formula:

$$n_i = [N_i / N] \times n$$

Where, n_i = sample size in the i^{th} stratum ($i=1, \dots, k$)
 N_i = population size of the i^{th} stratum
 N = total population size of the study
 n = total sample size of the study

Since the total population size (N) was 4175 employees and the total sample size (n) was 365 employees, then the sample sizes for each selected large manufacturing businesses were determined proportionately as indicated in Table 3.2.

Table 3.2 Sample sizes of employees for each manufacturing business

Se. No.	Name of Manufacturing Business	No. of Employees N_i	Proportion N_i / N	Sample size n_i = [N_i / N] x n
1	Sembel Metal & Wood Works	977	0.23	85
2	Baroco Eritrea	756	0.18	66
3	Asmara Brewery Corporation	464	0.11	41
4	Red Sea Bottlers	261	0.06	23
5	Eritrea Textile	243	0.06	21
6	Dahlak Shoe	219	0.05	19
7	Sabur Printing Services	217	0.05	19
8	Asmara Meat & Dairy Products	216	0.05	19
9	Keih Bahri Food Products	196	0.05	17
10	Margran PLC	180	0.04	16
11	Wina House Hold Utensils	126	0.03	11
12	Space 2001 Eritrea	111	0.03	10
13	Arag Wood & metal Work	105	0.03	9
14	Hawashait Garment	104	0.02	9
	Total	4175		365.00

The sampling technique used for the quantitative aspect of this study was the probability sampling technique, which is the proportionate stratified random sampling technique. In probability sampling, every member of the study population has a known and equal probability of being selected for the research sample (Creswell, 2014). Therefore, as the employees were sampled from their respective manufacturing businesses, the proportionate stratified random sampling technique was used because the technique ensures a representative sample of the population under study is obtained.

Also, in proportionate stratified random sampling, sets of strata were identified and their proportion of population corresponding to each stratum was determined. Then a sample

was drawn randomly from each stratum so that proportions in the sample matched exactly the proportions in overall population (Brase & Brase, 2009). Thus, the proportionate stratified random sampling technique was applied because samples of employees from each stratum of the selected large manufacturing businesses were drawn proportionately and randomly. Therefore, since the departments of the respective manufacturing businesses were the strata of this study from which employees were randomly selected, the sample sizes for each department of the selected manufacturing businesses were determined proportionately as indicated in Table 3.3. However, Table 3.3 does not show the list of departments for Baroco Eritrea, Red Sea Bottlers, and Hawashait Garments. This is because Baroco Eritrea and Red Sea Bottlers were not cooperative whereas Hawashait Garments was not functioning during the data collection.

3.5.2 Sampling and Sampling Techniques for Qualitative

For the qualitative aspect (interview), a sample of employees from the selected manufacturing businesses was taken using a non-probability sampling method, which is purposive sampling method. This method was used to select the membership of the sample based on research goals. This sampling method is based on the judgment of the researcher as to who will provide the best information to succeed with the objectives of the study (Etikan & Bala, 2017). Hence, the researcher selected employees for the interview based on their experiences in the manufacturing business. Employees with the highest work experience from their departments and job levels were selected for the interview.

The sample size for the interview was determined using the concept of “information power” and “saturation.” According to Malterud, Siersma, and Guassora (2015, p.1754) “information power indicates that the larger information the sample holds, the lower sample size is needed, and vice versa. The size of a sample with sufficient information power depends on study aim, sample specificity, use of established theory, quality of

Table 3.3 Sample sizes of employees for each strata (department)

Se. No.	Manufacturing Business	Departments	No. of Employees	Sample size
1	Sembel Metal & Wood Works	Metal work	400	35
		Wood work	322	28
		Hangars	255	22
	Total		977	85
2	Baroco Eritrea	----	756	66
3	Asmara Brewery Corporation	Liquor production	210	18
		Brewery production	264	23
	Total		464	41
4	Red Sea Bottlers	----	261	23
5	Eritrea Textile	Yarn production	57	5
		Fabric production	69	6
		Garment production	117	10
	Total		243	21
6	Dahlak Shoe	Leather shoes production	92	8
		Canvas shoes production	57	5
		Plastic shoes production	70	6
	Total		219	19
7	Sabur Printing Services	Printing department	92	8
		Binding department	125	11
	Total		217	19
8	Asmara Meat & Diary Products	Meat production	114	10
		Dairy production	102	9
	Total		216	19
9	Keih Bahri Food Products	Flour production	126	11
		Wheat germ production	70	6
	Total		196	17
10	Margran PLC	Granite production	80	7
		Marble production	100	9
	Total		180	16
11	Wina House Hold Utensils	Aleminum department	80	7
		Plastic department	46	4
	Total		126	11
12	Space 2001 Eritrea	Earth blocks production	69	6
		Tiles production	42	4
	Total		111	10
13	Arag Wood & metal Work	Wood work	46	4
		Metal work	59	5
	Total		105	9
14	Hawashait Garment	----	104	9
Overall Total			4175	365

dialogue, and analysis strategy.” Similarly, Saturation refers to the collection of new data that does not shed any new information on the issue under investigation (Mason, 2010). According to Creswell (as cited in Mason, 2010), grounded theory methodology suggests that a sample size of 20-30 is enough to reach saturation. Therefore, based on the concepts of “Information Power” and grounded theory methodology, this study considered a total sample size of 25 employees of the selected large manufacturing businesses in Eritrea for the interview.

3.6 Data Collection Procedures

This research was based on convergent parallel mixed design. This means that data was collected in both forms of quantitative and qualitative data. Creswell (2014) stated that the key idea with mixed design is to collect both forms of data using the same or parallel variables, constructs, or concepts. Hence, this study collected the data for both forms of quantitative and qualitative data using the same constructs or variables. In addition, according to Creswell (2014), qualitative data was obtained through open-ended questions without predetermined responses while quantitative data was obtained through closed-ended responses.

In order to proceed with the data collection, however, it was important to permission from the selected large manufacturing businesses in Eritrea. For this purpose, the researcher obtained a supporting letter from the office of the National Commission for Higher Education, Eritrea. The researcher then submitted the letter to the selected large manufacturing businesses and communicated with their respective managers requesting for permission to collect data from employees of their respective manufacturing businesses. The main challenge was to get permission to access employees and it was not easy to convince the managers. However, most of the manufacturing businesses gave permission. Only two large manufacturing businesses did not grant permission to collect data while one large manufacturing business was not functioning at the time of data

collection. Therefore, the researcher was able to collect data from 11 large manufacturing businesses.

In relation to participants, mixed method researchers include the sample of qualitative participants in the larger quantitative sample, because ultimately researchers make a comparison between the two databases and the more they are similar, the better the comparison (Creswell, 2014). However, although the participants for both the quantitative and qualitative aspects were from these selected large manufacturing businesses, none of the sampled employees participated in both methods of data collection (questionnaire and interview). This was done in order to avoid any influence on the results by participating in both methods of data collection.

Both quantitative and qualitative data were collected in specified period of time, which was on June 2018 - September 2018. As Creswell (2014) described that data collection begun with a broad cross-sectional survey in order to generalize results to a population and then focused on qualitative open-ended interviews from participants to help explain the initial quantitative survey.

In this data collection period, once permission to data collection was granted, the researcher and the respective coordinators or officers of the selected large manufacturing businesses determined the specific dates and time in which the employees would complete the questionnaire and to conduct the interviews. The specific procedures for each quantitative and qualitative data collection are described in the following sub-sections.

3.6.1 Data Collection Procedure for the Quantitative

For the survey, the selected employees of the respective manufacturing businesses were gathered in a hall at their work place at the specified date and time. The researcher explained the purpose of the research and affirmed that the data collected would be kept safely and would be remained confidential as was also stated in the attached

questionnaire. The questionnaires were then distributed to the candidates and the completed questionnaires were collected immediately. Since the questionnaire was prepared in both English and Tigrinya (Eritrea national language) languages, the respondents completed the questionnaire using the language convenient to them. Through this strategy, the survey was conducted smoothly as initially planned.

3.6.2 Data Collection Procedure for the Qualitative

For the qualitative data collection, the respective manufacturing businesses provided an office space on the specific dates and time that were determined ahead by the researcher, coordinator, and the interviewees. The interviews were then conducted on the purposefully selected employees of the manufacturing businesses from the various levels at the specified date and time. The interview was done on face-to-face with one candidate at a time. The conversation was recorded using recorder with the consent of the participants and notes were taken as a backup by the researcher. The interview guide was prepared in English language but Tigrinya language was used during the interviews in order to make the conversation convenient, understandable and smooth. The translation from English to Tigrinya was done ahead of the interview and it was done by the researcher because Tigrinya is his native language. The interviews were therefore conducted smoothly on an average of 40 minutes per interview.

3.7 Data Collection Instruments

This research was based on convergent parallel mixed design. Hence, both quantitative and qualitative data were collected using printed questionnaire (see Appendix 1) in a specified period of time and using interview guides (see Appendix 2) for qualitative data. Therefore, the instruments for data collection were questionnaire and interview (a voice recorder and back-up notes were used). The questionnaire was used to collect quantitative data from employees of the selected large manufacturing businesses. Similarly, a few employees of the selected large manufacturing businesses were considered for interview. In addition, using these instruments, data were collected from

employees in different levels and skills so long as they were selected in the sample. All employees had equal probability of being selected in the sample. However, the level of the employees was given the required attention for interview in order to get the necessary data that reflects all perspectives.

The questionnaire was basically focused on the independent and dependent variables of this study. The questionnaire was designed carefully so as to yield valid information using questions that were close-ended. Most of the questions in the questionnaire were prepared using Likert Scale (strongly agree, agree, neutral, disagree, and strongly disagree). The questions were prepared by the researcher considering the objectives, the conceptual framework, and the literature reviews in this study. The required attention was also given to the questionnaire to ensure validity of the questionnaires. Validity refers to the meaningfulness of the questionnaire. According to Bolarinwa (2018), validity refers to the degree to which the questionnaire, as an instrument of measurement, measures what it is supposed to measure. Therefore, to ensure validity, the questionnaire was designed in a way that individual questions were relevant, appropriate, intelligible, precise, and unbiased. In addition, the questionnaire was prepared in English language and Tigrinya (Eritrea national language) because some employees could experience difficulties in understanding English. The translation from English to Tigrinya language was done by the researcher because Tigrinya is his native language. However, the researcher referred English-Tigrinya Dictionary by Rahman (2007) for the technical words as required. Simple and plain language was also used. The arrangement of the questions in terms of the conceptual flows and the layout of the questionnaire in terms of formatting were also considered. The questionnaire was designed on anonymous data collection procedure, i.e., name of the respondents were not asked.

In addition to validity, reliability of a questionnaire was also important. According to Bolarinwa (2015) and Improvement Skills Consulting Ltd. (2009), reliability is a

measure of how a questionnaire produces a consistent result when repeated and how the items in the the questionnaire measure the same thing. It can be measured using Test-Retest (repeatable) or using Internal Consistency Measures (such as Cronbach's Alpha reliability coefficient or Split-half analysis) as this determines how well items contained in the questionnaire measure the "same thing." According to Field (2006), in test-retest reliability measure, a person, considering other things being equal, should get the same score in a questionnaire when the person completes it at two different times. However, according Bolarinwa (2015), Internal Consistency Measures relate to the degree to which the items in the questionnaire measure the same thing. Although internal consistency can be estimated using Cronbach's Alpha reliability coefficient or Split-half analysis, Cronbach's Alpha is the most widely used to measure reliability (Bolarinwa, 2015). Therefore, this study used Cronbach's Alpha reliability coefficient to measure reliability of the questionnaire since it is appropriate for the reliability measure of the instrument in Likert-type items (Gliem & Gliem, 2003).

In relation to the interview, the interview was designed using confidential data collection procedure. This means that respondents' name and other personal data were kept confidential. The interview utilized unstructured and open-ended interview method. The interview was conducted on individual face-to-face basis. The questions for the interviews were designed carefully to ensure internal validity of the interviews just like the questionnaires. The interview proceedings were recorded in a voice recorder with the consent of the participants. In addition, back-up notes were taken as interviews progressed. The notes were then checked and compared when the transcriptions were made.

3.8 Pilot Study

In order to ensure reliability and validity of the data as well as whether the research instrument was adequately designed, it was important to conduct a pilot study before undertaking the actual study. Piloting was conducted to ensure the effectiveness and

viability of the questionnaire. It was helpful in assessing the simplicity of the questions asked, the relevance, and appropriateness of the questions for the target population. Piloting also helped to ensure the reliability of the questionnaire as the results in Table 4.5 show that the questionnaire had met the reliability requirement.

According to Wimmer and Dominick (2011), for piloting, a small sample size should be taken in order to determine whether the study approach is correct and help to refine the questions in the questionnaire. In addition, Wimmer and Dominick (2011, p.200) argue that “self-administered questionnaire should be pre-tested with the type of respondents who will participate in the actual study.” In line with this, Perneger, Courvoisier, Hudelson, and Ageron (2014) recommended that 30 participants are a reasonable size for pre-tests of questionnaires.

A pilot test for the questionnaire of this study was therefore done using employees with similar characteristics to respondents who participated in the actual study. The pilot study was done from April 2018 – May 2018. It was done on 30 employees of Saba Shoe Factory, which is located in the central region. This manufacturing business was selected randomly from the 15 large manufacturing businesses located in the central region. Employees of Saba Shoe Factory were therefore not part of the final sample for the actual study.

While conducting the pilot test, the researcher noted the complaints on language and the need for re-stating some statements since the questionnaire was prepared in both English and Tigrinya languages. Accordingly, changes were made to simplify the language used and adjusting the said statements in the questionnaire so that participants were able to understand the questions with ease. Moreover, based on the pilot study carried out, the design of the questionnaire was proved to be fine in terms of relevance, appropriateness, and simplicity. The pilot study was helpful in improving the questionnaire as a research instrument for the actual study. Importantly, the pilot study ensured the validity of the questionnaire.

3.9 Ethical Considerations

This research dealt with organizational communication and employee performance in selected large manufacturing businesses in Eritrea. Therefore, data was collected from employees of the manufacturing businesses using questionnaires and interviews. However, in order to collect data, the researcher had obtained authorization and supporting letter from the National Commission for Higher Education in Eritrea (see appendix 5). The, researcher then requested the managers of the selected manufacturing businesses for permission to collect data from their respective employees.

Once access to data collection was granted, the researcher informed participants about the purposes, procedures and benefits of the research. The participants were informed that the data collected through the questionnaire and interview would remain confidential and would not be given to anyone else for any other purpose. They were also informed that the data collected would only be used for the intended purposes of the research and that the researcher would not make any changes to the data collected. The collected data was therefore used for analysis without any alterations. Participants in the interview were requested for permission for audio recording of the interviews. They were informed that the audio recording would be deleted later on once the research was done and the recorded data would be useful anymore.

3.10 Data Presentation and Analysis

The data collected was related to both quantitative and qualitative data. To begin with, the data collected was first checked for accuracy, consistency and completeness to ensure that the data collected was as originally intended. Then, once the quantitative data were entered into SPSS for analysis, the quantitative data results are presented in tables whereas the qualitative data results are presented in summary and narrative forms.

The quantitative data was collected using questionnaires in which most of the questions were prepared in a Likert scale (strongly agree, agree, neutral, disagree, and strongly

disagree). For the purpose of statistical analysis for the quantitative data, SPSS was used. Since the data was in Likert type, a coding scheme was designed (for instance, 0=strongly agree, 1=agree, 2=neutral, 3=disagree, and 4=strongly disagree) and then data was entered accordingly into SPSS. Once the data was entered into SPSS and checked for accuracy and completeness, the quantitative data was analyzed using descriptive and inferential statistics.

Descriptive statistics enable researchers to summarize and organize data in an effective and meaningful way and provide tools for describing collections of statistical observations as a result reducing information to an understandable form (Nachmias & Nachmias, 2006). Thus, for the purpose of descriptive analysis, percentage was used. However, to infer the variables from the sample to the population being studied, inferential statistics was used (Creswell, 2014). For the inferential analysis, correlation, regression, ANOVA and t-statistics were used.

For the correlation analysis between the independent variables (communication pattern, communication structure, communication medium and communication climate) and dependent variable (employee performance), Pearson correlation coefficient (r) was used. The value of Pearson correlation coefficient (r) ranges between -1 and 1, and it can be expressed mathematically as $-1 \leq r \leq 1$, where $r=1$ indicates strong positive relationship, $r= -1$ indicates strong negative relationship, and $r=0$ indicates there is no relationship between the independent and dependent variables.

In respect to the regression analysis, regression coefficients and models were used to further determine the influence of the independent variables on the dependent variable as indicated in the conceptual framework (see Figure 2.1) of this study. The study adopted the following general regression models to analyze the relationships of the independent and dependent variables.

The simple linear regression model is expressed as:

$$Y = \beta_0 + \beta_1 X_1 + \epsilon \dots\dots\dots \text{Model 1}$$

Where;

Y = Dependent variable

X_i = Independent variable

β₀ = Constant (Co-efficient of intercept)

β_i = Regression coefficients of the independent variable

ε = Error term

and the multi-linear regression model is expressed as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots + \beta_n X_n + \epsilon \dots\dots\dots \text{Model 2}$$

Where;

Y = Dependent variable

X_i = Independent variables, where i=1, 2, ..., n

β₀ = Constant (Co-efficient of intercept)

β_i = Regression coefficients of the independent variables, where i=1, 2, ..., n

ε = Error term

In order to determine, the linear relationship between individual independent variable and the dependent variable, the simple linear regression model, which is Model 1, was used. For the multi-linear relationship, the multi-linear regression model was adopted, which is Model 2.

In addition to the correlation and regression analysis, ANOVA was also used in order to test the hypothesis of the regression models and to determine the relationships between the independent variables and the dependent variable. ANOVA was used to determine the relationship between the independent variables as well as to determine whether the goodness of fit of the regression model fits the data. In line with this, the t-statistics

values were used in order to determine the most important contributor of the independent variables on the dependent variable in the multi-linear relationship.

In respect to the qualitative aspect of this study, the qualitative data was collected from interviews of the employees of the selected large manufacturing businesses. The qualitative data was analyzed using qualitative data analysis method. The qualitative data from the interview was transcribed and organized according to the contents (themes) in relation to the interview questions. Based on the themes identified, the key points of the data was identified, summarized and narrated. Then, the summarized and narrated data was objectively interpreted in relation to the objectives of the study.

Once both quantitative and qualitative data were analyzed separately, both types of data were merged together in the discussion of the findings since this study adopted a convergent mixed-parallel method. Thus, the triangulation method was adopted. Although there are several ways or approaches used to merge both types of data, side-by-side approach was adopted in this study. Thus, the researcher first reported the quantitative statistical findings and then discussed the qualitative findings that either confirm or disconfirm the statistical results (Creswell, 2014).

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents and discusses the findings of the study that examined the influence of organizational communication on employee performance in selected large manufacturing business in Eritrea. The findings are examined with regard to the study objectives in order to comprehensively answer the research questions. This chapter begins with discussing the response rate and the socio-demographic information of the respondents. It then presents the reliability analysis and the test of assumptions related to the parametric statistics used for the inferential analysis in this study. It also discusses the findings of the descriptive statistics of the items in the questionnaire relating to particular objectives of the study followed by the inferential statistical analysis of the particular objectives of the study. Since the research design of this study was a convergent parallel mixed method, the findings of both the quantitative and qualitative are triangulated. Thus, both the quantitative and qualitative findings of the study are discussed and integrated topic by topic to comprehensively elaborate the findings relating to the study objectives.

4.2 Response Rate

As shown in Table 4.1, 14 large manufacturing businesses in Eritrea were initially selected for the study purposes and a total sample size of 365 employees were considered for the quantitative aspect of this study. However, two manufacturing businesses (Baraco Eritrea and Red Sea Bottlers) were not cooperative and the researcher was not given permission to collect data from their manufacturing businesses. In addition, one manufacturing business (Hawashait Garment), despite its willingness to cooperate, was not functioning at the time of data collection period. Therefore, data was collected only from the 11 manufacturing businesses with a total of 267 respondents for the quantitative aspects. According to Baruch (1999), the reasonable acceptable response

rate that can contribute to the validity of the study is 60% +/-20. This implies that 80% and above is considered high response rate and below 40% is poor response rate. 60% and above is acceptable response rate. Therefore, as Table 4.1 shows, 267 questionnaires were sufficiently completed as the response rate. Thus, considering that the sample size was 365 employees, the response rate was 73.15%, which is a good response rate to addresses the research objectives.

Table 4. 1 Response rate of the respondents for the quantitative data

Manufacturing Business	Population Size	Sample Size	Response Rate	Percentage (%)
Sembel Metal & Wood Works	977	85	85	23.29
Baroco Eritrea	756	66	-	-
Asmara Brewery Corporation	464	41	41	11.23
Red Sea Bottlers	261	23	-	-
Eritrea Textile	243	21	21	5.75
Dahlak Shoe	219	19	19	5.21
Sabur Printing Services	217	19	19	5.21
Asmara Meat & Diary Products	216	19	19	5.21
Keih Bahri Food Products	196	17	17	4.66
Margran PLC	180	16	16	4.38
Wina House Hold Utensils	126	11	11	3.01
Space 2001 Eritrea	111	10	10	2.74
Arag Wood & metal Work	105	9	9	2.47
Hawashait Garment	104	9	-	-
Total	4175	365	267	73.15

For the qualitative aspect of the study, the interview was supposed to be conducted on 25 employees of the selected 14 large manufacturing businesses from different levels of job ranking (lower level, unit head, department head, and upper levels) on an individual based interview. However, the researcher was not able to collect data from three

manufacturing businesses as described above and thus only 21 employees, who were selected purposefully, were interviewed from the selected 11 large manufacturing businesses. Therefore, the response rate for the interview was 84%. In addition, Table 4.2 presents the distribution of employees for the interview in their respective manufacturing businesses. The distribution of employees for the interview was assigned by considering the size of the respective manufacturing businesses.

Table 4.2 Distribution of Respondents for the Interview

Manufacturing Business	Sample Size	Percentage (%)
Sembel Metal & Wood Works	5	23.8
Asmara Brewery Corporation	2	9.5
Eritrea Textile	2	9.5
Dahlak Shoe	2	9.5
Sabur Printing Services	3	14.2
Asmara Meat & Dairy Products	1	4.8
Keih Bahri Food Products	2	9.5
Margran PLC	1	4.8
Wina House Hold Utensils	1	4.8
Space 2001 Eritrea	1	4.8
Arag Wood & metal Work	1	4.8
Total	21	100

4.3 Demographic Information of the Respondents

The demographic information of the respondents provides data regarding the participants in a research study. It helps to understand how individuals are represented in the sample of the target population. Therefore, the demographic information in terms of gender, age, educational level, work experiences, and job level of the respondents is presented in Table 4.3. The proportions of each demographic item on Table 4.3 indicate that there is sufficient enough representations in the sample that would help to address the research questions.

Table 4.3 Demographic Information of the Respondents

	Demographic Category	Frequency	Percentage (%)
Gender	Male	198	74.2
	Female	69	25.8
	Total	267	100
Age	18 - 30	87	32.6
	31 - 40	72	27.0
	41 – 50	46	17.2
	51 – 60	34	12.7
	61 - 70	28	10.5
	Total	267	100
Educational Level	Elementary level (Grade 1 – 6)	16	6.0
	Junior level (Grade 7 – 8)	31	11.6
	Secondary level (Grade 9 – 12)	105	39.3
	Certificate Level	78	29.2
	Diploma level	31	11.6
	Degree level	6	2.2
	Total	267	100
Work Experience	1 – 10	133	49.8
	11 – 20	61	22.9
	21 – 30	39	14.6
	31 – 40	21	7.8
	41 & above	13	4.9
	Total	267	100
Job Level	Lower Level	210	78.7
	Unit Head	32	11.9
	Department Head	23	8.6
	Operational Manager	1	0.4
	General Manager	1	0.4
	Total	267	100

For the qualitative aspect (interview) of the study, Table 4.4 presents the distribution of job levels or ranking of the employees that were interviewed. Therefore, Table 4.4 shows that the interview was done on employees at various levels with sufficient proportions in order to get the qualitative data that was needed to address the research questions.

Table 4.4 Job ranking of the respondents for the interview

Job Ranking	Frequency	Percentage (%)
Lower level employees	6	28.6
Unit head	5	23.8
Head department	6	28.6
Upper level	4	19
Total	21	100

4.4 Reliability Analysis

In order to determine the accuracy and consistency of the records from which the descriptive and inferential analysis would be conducted for the research variables, it became important to conduct a reliability analysis. Reliability refers to “the degree to which the results obtained by a measurement and procedure can be replicated and importantly contributes to the validity of a questionnaire” (Bolarinwa, 2015, p.1). Therefore, a reliability analysis helped to ensure the possible validity of the decisions that would be made based on the test scores. The most commonly and widely used measure of reliability analysis is Cronbach’s alpha (Bolarinwa, 2015). Moreover, Cronbach’s alpha is appropriate for the reliability analysis of an instrument in Likert-type items (Gliem & Gliem, 2003). The acceptable Cronbach’s alpha value is above 0.6 (George & Mallery, 2003).

Therefore, a Cronbach’s alpha was used for the reliability analysis of the instrument of this study. A Cronbach’s alpha was calculated for each of the independent variables of this study as indicated in Table 4.5. The findings in Table 4.5 show that there is a good

internal consistency (reliability) of the items in the likert-scale because all Cronbach's Alpha values for each of the independent and dependent variables are above the minimal acceptable value (0.60). Therefore, it was reliable to conduct a statistical analysis based on the data collected through the questionnaire.

Table 4.5 Cronbach's Alpha values

Variable Construct	Number of Items	Cronbach's Alpha
Communication pattern	20	0.770
Communication structure	27	0.849
Communication medium	9	0.774
Communication climate	15	0.712
Employee performance	15	0.843

4.5 Test of Assumptions

In order to infer statistically from the research findings, first and foremost, it was important to conduct some tests of assumptions before conducting any data analysis. Testing assumptions would help the researcher to confidently and concretely carry out the data analysis and would be able to infer precisely from the findings. Therefore, the test assumptions that were considered in this study are test of sampling adequacy, test of normality, test of linearity, homoscedasticity and multi-collinearity diagnostics.

4.5.1 Sampling Adequacy Test

Before conducting data analysis and interpreting the findings, it was important to conduct sampling adequacy tests. According to Burton and Mazerolle (2011), sampling adequacy helps the researcher to get information regarding the grouping of survey items into interpretable factors that can better explain or describe the variables under investigation. Sampling adequacy examines the correlation among the grouping items in the survey. Therefore, examining sampling adequacy can help to determine whether the survey items have some sort of relationship to one another (Burton & Mazerolle, 2011). Hence, sampling adequacy must be tested.

Sampling adequacy can be tested by using Kaiser-Meyer-Olkin (KMO). A KMO correlation value above 0.60 - 0.70 is considered sampling adequacy (Burton & Mazerolle, 2011). However, the correlation matrix needs to be tested further for significance in order to determine the suitability of the data for analysis and interpreting the findings of the constructs. This is because if there is no relationship among the items in the survey, the data would not be suitable for analysis (Taherdoost, Sahibuddin, & Jalaliyoon, 2014; Burton & Mazerolle, 2011). For this purpose, Bartlett's test of Sphericity can be used as it provides a chi-square output. The chi-square output must be significant, i.e. $P < 0.05$, to indicate that there is relationship among the items in the survey (Williams, Onsmann, & Brown, 2010; Burton & Mazerolle, 2011).

Therefore, Kaiser-Meyer-Olkin (KMO and Bartlett's Test of Sphericity was conducted for this study in order to ensure the sampling adequacy and suitability of the data for analysis as indicated in Table 4.6. The findings in Table 4.6 confirmed that there is a sampling adequacy since KMO is 0.691 and there is a significant relationship among the items in the survey since $P=0.000 < 0.05$. Once this was confirmed, it was suitable to move forward with the statistical analysis of the research study under investigation.

Table 4. 6 Sampling Adequacy Test - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.691
Bartlett's Test of Sphericity	Approx. Chi-Square	173.129
	df	6
	Sig.	.000

4.5.2 Test of Normality for all Variables

Nearly all the parametric statistical measures, such as T-test, ANOVA, correlation and regression, assume that the sample data distribution follows normality (Razali & Wah, 2011; Mordkoff, 2016). However, some sample data maintain normality and others may not. Therefore, it is important to check whether the data of the variables follow normal

distribution or not because it determines how data are described and analyzed (Sainani, 2012). If the data analysis is conducted while the assumption of normality is violated, then the interpretation and inferences that have been made could not be reliable (Razali & Wah, 2011). This implies that researchers need to test the sampled data for normality prior to the statistical data analysis.

According to Razali and Wah (2011), the assumption of normality can be checked using three common ways. These are: the graphic methods (histogram, the normal quantile-quantile plot (Q-Q plot), box plot, and stem-and-leaf plot), the numerical method (Skewness and Kurtosis) and formal normality test (Kolmogorov-Smirnov test, Shapiro-Wilk test, etc). However, Razali and Wah (2011, p.21) stated that “the graphical methods are still not sufficient to provide evidence that the normal assumption holds even though they can serve as a useful tool in checking normality for sample of “n” independent observations.” Consequently, formal methods should be applied and performed to test normality before making any conclusions about the normality of the data.

Therefore, normality test was conducted using the formal normality tests: Kolmogorov-Smirnov test and Shapiro-Wilk test as indicated in Table 4.7. However, the Shapiro-Wilk test was considered to determine normality of the variables since it is more powerful for all types of sample size and distributions than Kolmogorov-Smirnov test (Razali & Wah, 2011). According to Mordkoff (2016), if the resulting p-value is under 0.05 (i.e. $p < 0.05$), then there is significant evidence that the sample is not normal. Therefore, according to the findings in Table 4.7, the independent variables: communication medium with $p=0.000 < 0.05$ and communication climate with $p=0.003 < 0.05$ are not normal.

Table 4.7 Kolmogorov-Smirnov and Shapiro-Wilk tests of normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Communication Pattern	.075	267	.001	.990	267	.063
Communication Structure	.059	267	.024	.995	267	.584
Communication Medium	.111	267	.000	.953	267	.000
Communication Climate	.067	267	.005	.983	267	.003
Employee performance	.052	267	.076	.990	267	.080

According to Shapiro-Wilk test of normality, communication medium and communication climate were found not normal. Therefore, the researcher decided to determine further the skewness and kurtosis of these variables. This is because skewness and kurtosis helps to check normality of a variable under investigation with a numerical value. Thus, they check the degrees of skewness as well as the degrees of peak and tail of the variable distribution.

Park (2008) noted that a variable with skewness and kurtosis values of 0 and 3 (excess kurtosis = 0) respectively would be considered as normal; Skewness > 0 indicates the variable is skewed to the right and skewness < 0 indicates the variable is skewed to the left; kurtosis > 3 (excess kurtosis > 0) indicates the variable distribution has high peak and thin tail, and kurtosis < 3 (excess kurtosis < 0) indicates the variable distribution has low peak and thick tail. This implies that when the absolute values of both the skewness and excess kurtosis approach to 0, then the data distribution is approximately normal. However, as a measurement of normality for a data distribution, skewness is more important than kurtosis. This is because normality is nothing but symmetry of a data distribution (Pett, 2015). Therefore, as a rule of thumb, according to Park (2008), if skewness is < -1 or >1, it is highly skewed; if -1 < skewness < -0.5 or 0.5 < skewness < 1, it is moderately skewed; and if -0.5 < skewness < 0.5, it is approximately normal.

Table 4. 8 Statistics of Skewness and Kurtosis for all variables

	N	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
Communication Pattern	267	-.187	.149	.345	.297
Communication Structure	267	.061	.149	.007	.297
Communication Medium	267	.838	.149	.919	.297
Communication Climate	267	.225	.149	1.245	.297
Employee performance	267	.079	.149	-.510	.297
Valid N (listwise)	267				

The skewness and kurtosis test for all the independent variables were conducted as indicated in Table 4.8. The findings in Table 4.8 show that the absolute values of skewness and excess kurtosis for communication pattern were -0.187 & 0.345 respectively; for communication structure were 0.061 and 0.007 respectively; and for employees performance were .079 and .510 respectively. Hence, since the skewness and excess kurtosis values for the communication pattern, communication structure and employee performance approaches to zero, they are approximately normal. For the communication climate, although the excess kurtosis value was 1.245 which indicates high peak and thin tail, the skewness value was 0.225, which is less than 0.5 and approaches to zero. It was therefore reasonable to assume that the data distribution for the communication climate followed approximately a normal distribution. However, for the communication medium, since the skewness and excess kurtosis values were 0.838 and 0.919 respectively in which case both values approach to 1, the variable is approximately skewed to the right with high peak and thin tail. Hence, the data distribution for the variable, communication medium is not normal.

Since both Shapiro-Wilk test and skewness test of normality for communication medium indicate that it is not normal, it was important to transform the data variable of the communication medium using transformation tools. Such transformation tools help to meet the assumption requirement of normality and thus to bring the data distribution of

the variable to be normal (Curran-Everett, 2018). Although different types of data transformation tools, such as Log 10, square root, inverse, etc., are available, the researcher used the Log10 (Logarithm of 10) transformation option because “the Log transformation is, arguably, the most widely used tool to transform a skewed data in order to approximately conform normality” (Feng et al., 2014, p.106). According to Curran-Everett (2018), the Log transformation can help the sample data better meet the assumption of normality and thus satisfy assumptions of some statistical analysis. However, since some sample data do not approximate the Log-normal distribution, the transformed data may not be necessary normal or reduce skewness. Even in some case, the transformed data might be more skewed than the original data. Therefore, the transformed data must again be subjected to test of normality.

After the data variables for communication medium was transformed using Log10, Kolmogorov-Smirnov and Shapiro-Wilk tests were conducted to test normality for the new set of data variable as indicated in Table 4.9. According to the findings in Table 4.9, the Log transformed data distribution for the communication medium was normal since the Shapiro-Wilk test indicates that $p=0.07 > 0.05$.

Table 4.9 Kolmogorov-Smirnov and Shapiro-Wilk tests for the transformed data

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Communication Medium Log	.071	267	.002	.990	267	.070

The skewness and kurtosis tests were conducted in order to check the normality of the Log transformed data as indicated in Table 4.10. The findings in Table 4.10 indicate that the Log transformed data satisfied the normality assumptions since the absolute values of Skewness and excess kurtosis were 0.009 and 0.091 respectively in which both values approach to a value of 0. Thus, the Log-transformed data for communication medium met the normality requirement.

Table 4. 10 Skewness and Kurtosis tests for the Log transformed data

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Communication Medium Log	267	.009	.149	-.091	.297
Valid N (listwise)	267				

The findings of all the normality tests above ensured that the data distributions are normal. Therefore, it was possible to move forward to conduct the statistical data analysis using the parametric measurements of statistics - correlation, regression, ANOVA, and t-test.

4.5.3 Tests of Normality, Linearity and Homoscedasticity for Multi-Regression

The assumption of normality for multi-regression refers to whether the data of the predictor variables are normally distributed. According to Razali and Wah (2011), the assumption of normality can be checked by the graphic methods (histogram). Therefore, the normality of the independent variables for multi-regression can be checked by visualizing the histogram. If the histogram is a symmetrical bell-shaped graph, then it is normal. Therefore, by visualizing the histogram on Figure 4.1, the assumption of normality for the multi-regression satisfied because the graph is approximately symmetrical bell-shaped graph.

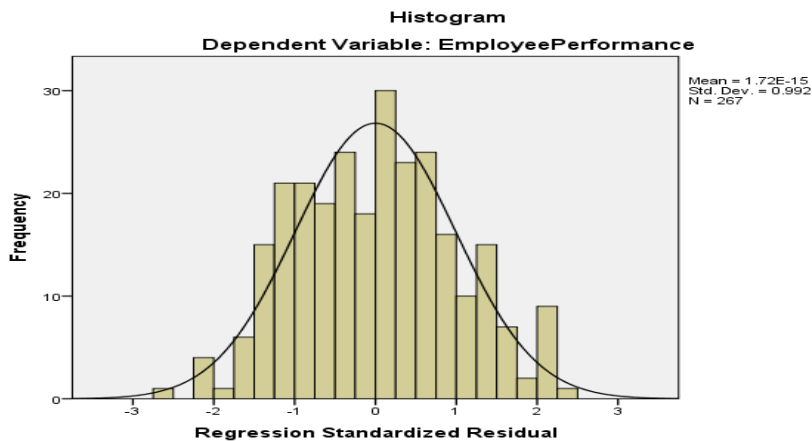


Figure 4.1 Histogram for normality

The assumption of linearity refers to the straight-line relationship between the predictor variables and the outcome variable. This linearity can be checked simply by visual examination of the residual plots, that is, the plots of standardized residuals as a function of the standardized predictor values (Osborne and Waters, 2002). Therefore, the assumption of linearity was examined based on the standardized residual plots on Figure 4.2. Accordingly, the researcher visualized that the residual plots were scattered around the straight-line. Hence, linearity of the independent variables was satisfied.

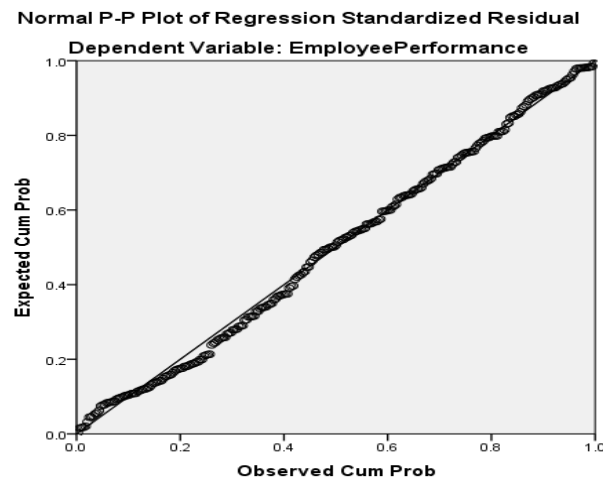


Figure 4.2 Standardized residual plot for linearity

The other assumption that was considered was homoscedasticity. According to Knaub, (2007), “homoscedasticity refers to the variances of the predictions determined by regression remains constant.” Thus, it explains a situation in which the residuals (error terms) remain constant or distributed consistently across all the predictors values (Statistics Solutions, 2011; Keith, 2015). Homoscedasticity can also be examined in the same way linearity is examined. It is examined using residual plots. Thus, if the residuals (errors) are scattered around zero, they provide even distribution. Therefore, the researcher examined homoscedasticity by visualizing the standardized residual plots on Figure 4.3. Accordingly, the residuals were scattered and evenly distributed around zero (the horizontal-line). Hence, there was a homoscedasticity.

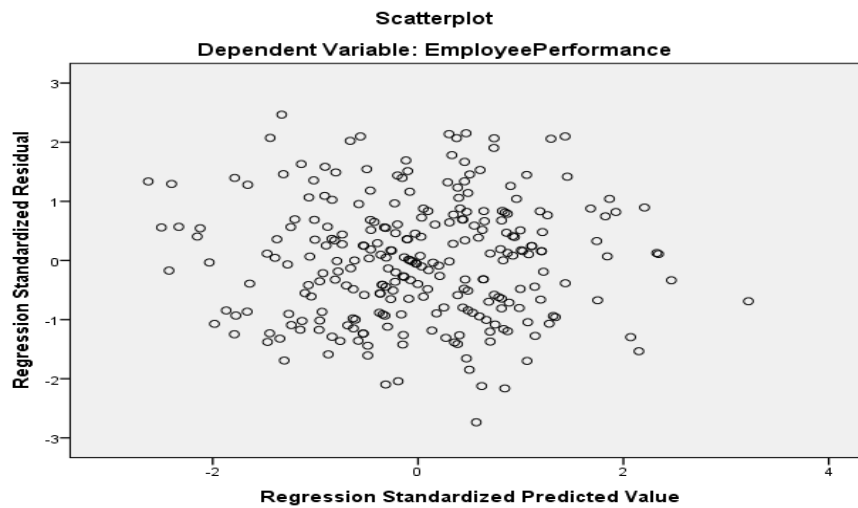


Figure 4.3 Standardized residual plot for homoscedasticity

4.5.4 Test of Multicollinearity among the Independent Variables

Testing for multicollinearity of the predictors in a regression model is important because it has an adverse impact on the regression analysis (Vatcheva, Lee, McCormick, & Rahbar, 2016). Collinearity among the predictors increases estimates of variance, i.e. inflation of variance parameter when it is not, that ultimately yield in high R^2 (coefficient of determination of the regression) while there is low parametric significances and hence the results in the parameter will be incorrect and less precise (Mela & Kopalley, 2002). Therefore, it was important to conduct multicollinearity test among the predictors (independent variables) in order to ensure that the regression model fits to predict the dependent variable.

According to Midi, Sarkar and Rana, (2010), multicollinearity can be diagnosed using tolerance value (TV) and variance inflation factor (VIF). Tolerance measures the collinearity of predictors based on the regression coefficient of determination, i.e. $TV = 1 - R^2$, and VIF is the reciprocal of tolerance, i.e. $VIF = 1/TV$. VIF measures the variance inflation of the parameter estimates due to the multicollinearity of predictors (Vatcheva1, et al., 2016). Therefore, it is important to determine the values of tolerance and VIF to check the existence of the multicollinearity among predictors. Although there

are no formal cutoff values for tolerance and VIF, Midi et al. (2010) suggests that a tolerance value less than 0.1 indicates that there is a serious collinearity and less than 0.2 indicates a potential collinearity. Similarly, a VIF value greater than 10 indicates the presence of collinearity.

In addition to Tolerance and VIF, condition index (CI) can be also used to check collinearity among predictors. If the condition index is 15, there is a concern of multicollinearity and if CI greater than 30, it indicates that a presence of a serious multicollinearity (Midi et al., 2010). This implies that if the condition index is less than 15, then there is no collinearity among the predictor variables and hence the regression model would be adequately fit to predict the dependent variable. Therefore, in order to diagnose multicollinearity among the predictors, the tolerance, VIF, and condition index should be examined. Therefore, this study examined these three diagnostic tools to test multicollinearity among the independent variables as indicated in Table 4.11 and Table 4.12.

Table 4.11 Collinearity Statistics – Tolerance and VIF

Model	Collinearity Statistics	
	Tolerance	VIF
1	Communication Pattern	.831
	Communication Structure	.648
	Communication Medium Log	.765
	Communication Climate	.747

a. Dependent Variable: Employee Performance

According to the findings in Table 4.11, all the tolerance values are greater than 0.2 and the VIF values are less than 10. Therefore, there is no collinearity among the independent variables. In addition, the findings in Table 4.12 indicate that all the condition index values are less than 15. This implies that there is no collinearity among the predictor variables. Therefore, all the three multicollinearity diagnostic tools:

tolerance, VIF, and condition index, confirmed that there is no collinearity among the predictor variables.

Table 4. 12 Collinearity Diagnostics – Condition index

Dimension	Eigen value	Condition Index	(Constant)	Variance Proportions			
				Comm. Patterns	Comm. Structure	Comm. Medium Log	Comm. Climate
1	4.759	1.000	.00	.00	.00	.00	.00
2	.094	7.107	.02	.31	.00	.63	.01
3	.065	8.573	.02	.32	.01	.34	.50
4	.044	10.435	.20	.05	.95	.03	.05
5	.038	11.164	.76	.32	.04	.00	.44

a. Dependent Variable: Employee Performance

In conclusion, all the tests of assumptions confirmed that there was adequacy of sampling, reliability, and normality of each independent variable. Similarly, the assumptions of normality, linearity and homoscedasticity for the overall predictor variables were satisfied. In addition, all the tests of multi-collinearity (tolerance, VIF, and condition index) confirmed that there was no collinearity among the predictors (independent variables). It was therefore relevant to conduct the statistical tests of analysis using the parametric statistaics (linear and mutli-linear correlation and regression, and ANOVA to test the hypothesis of this study. Thus, the statistical findings of this study are reliable and valid.

4.6 Analysis of Study Variables

In order to address research objectives, the quantitative data that was collected using the questionnaire was analyzed statistically. Descriptive and inferential statistical analyses were used to analyze and present the data for each variable under the study objectives. Then, the statistical findings were merged with their respective interview results as well as with the theoretical concepts to elaborate the overall findings of the study.

4.6.1 Communication Patterns

The first objective of the study to be investigated was the influence of communication patterns on employee performance in selected large manufacturing businesses in Eritrea. Therefore, it was important first to determine if employees of the manufacturing businesses communicated using the communication patterns (formal and informal patterns of communication) to achieve their performance in terms of producing the required quantities and qualities of products. This would help describe the importance of formal and informal communication as well as their level of effectiveness for effective information exchange. It would also describe the relationship between communication patterns (formal and informal communication) and employee performance. Lastly, the inferential statistics of correlation, regression and ANOVA analysis are discussed to determine the influence of communication patterns on employee performance.

4.6.1.1 Communication Patterns and Their Importance

According to the Social Network Theory, employees in an organization are connected with certain communication networks in which a regular pattern of information flows. Thus, information is exchanged between employees in an organization through communication patterns (formally and informally). Table 4.13 shows that a total of 61% (strongly agree 21.3% and agree 39.7) of employees confirmed that they communicate both formally and informally, 20.3% neutral (neither agree nor disagree), and a total of 18.7 % of employees disagree and strongly disagree. Therefore, employees of the selected large manufacturing businesses confirmed that they communicate formally and informally. Also, the interview findings confirmed that employees of the selected manufacturing businesses accept and use both communication patterns for the exchange of information. The interviewees said that formal communication is used for serious issues that require documentation and to make communication clear and formal. It was applied in written as well as in formal meetings. They also confirmed that informal communication was used frequently since the nature of the work demanded it. It was

applied more at the execution levels in which employees would be forced to communicate informally in order to avoid further misunderstanding. For instance, they said that job assignments flow in a formal way following the management structure. For the execution of the job assignments, employees also communicate in an informal way in order to accelerate the accomplishments of the jobs. Therefore, both communication patterns were used by employees of the manufacturing businesses.

Table 4. 13 Communication patterns and their importance

	Communicating formally and informally		Importance of formal and informal communication	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	57	21.3	102	38.2
Agree	106	39.7	115	43.1
Neutral	54	20.3	19	7.1
Disagree	40	15.0	21	7.9
Strongly Disagree	10	3.7	10	3.7
Total	267	100	267	100

In terms of the importance of communicating formally and informally when executing tasks, employees of the selected large manufacturing businesses confirmed that formal and informal communication are important for information exchange that would enable them to execute the given tasks. Table 4.13 shows that 81.3% (strongly agree 38.2% and agree 43.1%) of employees confirmed the importance of communicating formally and informally when executing tasks, 7.1% neutral (neither agree nor disagree), and a total of 11.6 % of employees disagree and strongly disagree. These findings were also supported by the interview findings. The interviewee confirmed that the communication patterns (formal and informal) were important in the manufacturing businesses. They explained that the work processes in the manufacturing businesses are based on chains that demand communication in order to do the tasks. No one can work alone since the work processes involve interrelated activities and a number of employees were involved

in carrying out those activities. They said that “for us, formal and informal communications are the means for understanding the work activities and solving problems so that job would be done properly.” They further explained that, for any work to be done, coordination is required, which in turn requires communication. For instance, formal communication was used for job orders to be clear and official. Such formal document would be used as a point of reference for production and resolving any differences in understanding of the tasks given. In addition, the interviewed employees said that “informal communication is our daily tool for the execution of tasks since it involves immediate feedback. It speeds up the exchange of information and accelerates the work processes. Even work plans need to be communicated formally and informally in terms of doing this today and this next so that everyone would be ready to do the job according to the plan.” Therefore, both communication patterns are important in the manufacturing businesses to exchange information so that the job would be done.

The above findings agreed with what Rogers (2013) and Chan Chun Mig (2010) said. Rogers stated that employees in an organization communicate formally and informally to get work done. Similarly, Chan Chun Mig noted that employee’s exchange or share information with each other using communication patterns, which are the formal and informal patterns. Thus, communication patterns are used and are important in an organization since they have their own effect on employee performance. Therefore, it can be concluded that formal and informal communications are important to the selected large manufacturing businesses in Eritrea.

4.6.1.2 Formal Communication and Information Exchange

Employee’s exchange or share information through a formal pattern of communication in manufacturing businesses (Shonubi & Akintaro, 2016). However, it was important to determine whether formal communication enabled employees to exchange important, accurate, clear and timely information or not. The descriptive findings indicate that a huge majority of employees of the selected large manufacturing businesses confirmed

that formal communication enabled them to communicate important, accurate, clear and timely information within their manufacturing businesses. The findings in Table 4.14 illustrates that, in terms of important, accurate and clear information exchange, a total of 92.5% of the employees strongly agree (56.9%) and agree (35.6%), 3.4% neutral (neither agree nor disagree), and a total of 4.1 % of the employees disagree and strongly disagree. In terms of timely information exchange, a total of 80.9% of the employees strongly agree (37.8%) and agree (43.1%), 11.6% neutral (neither agree nor disagree), and a total of 7.5 % of the employees disagree and strongly disagree. Hence, formal communication enabled employees of the manufacturing businesses to exchange important, accurate, clear and timely information among themselves.

The interview findings also confirmed the findings on Table 4.14. The interviewees affirmed that formal communication enabled them to communicate important, accurate, clear and timely information so long as communication is related to the immediate work processes. The interviewees noted that they prefer formal communication since it is clear, accurate and trustworthy. Als, it is official and produces recorded documents that would be used as a reference for further activities and to resolve any disputes that might happen. It also helps to avoid any misunderstanding. Therefore, it enabled employees to exchange important, accurate, clear and timely information in the selected large manufacturing businesses in Eritrea.

Table 4. 14 Formal communication and information exchange

	Exchanging important, accurate & clear information		Exchanging timely information	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	152	56.9	101	37.8
Agree	95	35.6	115	43.1
Neutral	9	3.4	31	11.6
Disagree	9	3.4	19	7.1
Strongly Disagree	2	0.7	1	0.4
Total	267	100	267	100

4.6.1.3 Effectiveness of Formal Communication

The researcher was interested in determining whether formal communication was effective in the selected manufacturing businesses or not because ineffective communication is detrimental for employees and leads to poor performance (Atambo & Momanyi, 2016). Therefore, in terms of the effectiveness of formal communication in exchanging the required and needed information to perform tasks, a majority of employees of the selected large manufacturing businesses in Eritrea confirmed that formal communication was effective. Thus, Table 4.15 shows that a total of 56.2% of the employees strongly agree (22.5%) and agree (33.7%), 20.6% neutral (neither agree nor disagree), and a total of 23.2% of the employees disagree and strongly disagree.

Similarly, the qualitative findings confirmed that formal communication was effective. The employees explained that formal communication is an official communication used to communicate the required information formally. It is clear and understandable in most cases. They further explained that if there is any delay in the information exchange, particularly if it is related to production processes, it might affect production. The employee might be then held responsible. Therefore, employees prefer to communicate effectively in a formal communication since they do not want to be held responsible. Thus, formal communication enabled them to exchange information accurately, clearly and timely. Therefore, formal communication was effective in the selected large manufacturing businesses in Eritrea.

Table 4. 15 Effectiveness of formal communication

	Frequency	Percentage (%)
Strongly Agree	60	22.5
Agree	90	33.7
Neutral	55	20.6
Disagree	35	13.1
Strongly Disagree	27	10.1
Total	267	100

4.6.1.4 Formal Communication and Employee Performance

It was further important to determine whether formal communication had enabled employees to perform as required in terms of productivity (quantity and quality of products). Therefore, as indicated on Table 4.16, a majority of the employees of the selected large manufacturing businesses confirmed that formal communication had enabled employees to perform as required. In terms of producing the required quantity of products, the findings in Table 4.16 indicates that a total of 89.5% of the employees strongly agree and agree, 7.5% neutral (neither agree nor disagree), and 3% of the employees disagree and strongly disagree. Similarly, in relation to the production of quality products, the findings in Table 4.16 shows that a majority of employees confirmed that formal communication enabled them to produce the required quality of products. Thus, according to Table 4.16, a total of 89.2% of the employees strongly agree and agree, 5.7% neutral (neither agree nor disagree), and a total of 5.2% of the employees disagree and strongly disagree. Therefore, formal communication was effective and helped employees of the selected large manufacturing businesses in Eritrea to produce the required quantity and quality of products. Thus, formal communication enabled employees to perform as required.

Table 4. 16 Formal communication and employee performance

	Quantity of products		Quality of products	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	142	53.2	134	50.2
Agree	97	36.3	104	39.0
Neutral	20	7.5	15	5.7
Disagree	6	2.3	12	4.5
Strongly Disagree	2	0.7	2	0.7
Total	267	100	267	100

Furthermore, employees of the manufacturing businesses were asked whether ineffective formal communication (if experienced) influenced on their performance negatively in terms of producing the required quantity and quality of products. The research findings in Table 4.17 indicate that the majority of employees confirmed that ineffective formal communication had negative influence on their performance in terms of producing the required quantity and quality of products. In terms of producing the required quantity of products, Table 4.17 reveals that 63.3% of the employees strongly agree and agree, 14.2% neutral (neither agree nor disagree), and a total of 22.5 % of the employees disagree and strongly disagree. In relation to production of quality products, Table 4.17 reveals that a total of 59.6% of the employees strongly agree and agree, 16.1% neutral (neither agree nor disagree), and a total of 24.3% of the employees disagree and strongly disagree. This implies that if formal communication is not effective, it influences the performance of employees negatively in the manufacturing businesses.

Table 4. 17 Ineffective formal communication and employee performance

	Quantity of products		Quality of products	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	58	21.7	55	20.6
Agree	111	41.6	104	39.0
Neutral	38	14.2	43	16.1
Disagree	45	16.9	43	16.1
Strongly Disagree	15	5.6	22	8.2
Total	267	100	268	100

The interview findings in relation to formal communication and employee performance supported the findings in Table 4.16 and Table 4.17. The interviewed employees explained that formal communication was the most important communication in their manufacturing businesses since it enabled them to exchange the job order clearly and in an official manner. This formal document determines the kind of products that would be produced in the manufacturing businesses based on the customer demands in terms of

the quantity and quality required for the products. For instance, one employee explained that “I actually work in the quality assurance unit. In this case, I need to communicate with employees in the production unit formally and take samples to check for quality. Then, I give them feedback formally whether to proceed with production or make certain adjustments. In such activities, I need and they need records to what we communicated so that the required quality would be produced.” The interviewed employees further explained that the formal document helps them to understand how many products need to be produced in a specific time. Therefore, since formal communication is clear, official and understandable in most times, it has offers support for production. However, they said that if the formal communication is not clear, obviously it then affects negatively the production activities since it demands further explanation either formally or informally in which case it delays the work processes. Thus, they confirmed that formal communication had influence on their performances.

The above findings confirmed the assertion that effective communication leads to effective performance and, at the same time, ineffective communication is detrimental for employees and leads them to poor performance (Atambo & Momanyi, 2016). Further, the findings are consistent with the findings of Owusu-Boateng and Jeduah (2014) and Bhatia and Balani (2015) that effective internal communication (formal and informal) affects employee performance.

4.6.1.5 Informal Communication and Information Exchange

Similar to formal communication, employees also exchange or share information through informal pattern of communication in manufacturing businesses (Shonubi & Akintaro, 2016). It was, therefore, important to determine whether informal communication was supporting employees in information exchange in terms of exchanging important, accurate, clear and timely information or not in the selected large manufacturing businesses in Eritrea. The findings in Table 4.18 indicate that employees of the manufacturing businesses confirmed that informal communication did not enable

them to exchange important, accurate, clear and timely information to do their job. In terms of exchanging important information, Table 4.18 reveals that a total of 33.7% of the employees strongly agree and agree, 20.6% neutral (neither agree nor disagree), and a total of 45.7% of the employees disagree and strongly disagree. Similarly, the majority of employees of the selected large manufacturing businesses confirmed that informal communication did not enable them to exchange accurate, clear and timely information to do their job. Table 4.18 illustrates that a total of 35.6% of the employees strongly agree and agree, 12% neutral (neither agree nor disagree), and a total of 52.4% of the employees disagree and strongly disagree.

Table 4. 18 Informal communication and information exchange

	Exchanging important information		Exchanging accurate, clear and timely information	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	30	11.2	41	15.4
Agree	60	22.5	54	20.2
Neutral	55	20.6	32	12.0
Disagree	84	31.5	102	38.2
Strongly Disagree	38	14.2	38	14.2
Total	267	100	267	100

The above findings were also confirmed by the interview results. The qualitative findings indicate that “although informal communication supports information exchange, it was not preferable in our manufacturing businesses.” They explained the reason by saying that, “for instance, it leads someone to bypass the management structure and leads to some conflicts that might affect productivity. Even in some instances, they mislead you and deny what they said before, particularly if something went wrong; they alter the previous instructions that completely affect productivity, it is even difficult to get the right information since they lacked openness in communication.

Consequently, we have reservation on informal communication particularly to serious issues.” Therefore, to avoid such misunderstandings and problems, they prefer and encourage formal communication than informal. They said that “we prefer formal communication more for production since it is clear and official. We then communicate only informally to supplement the formal communication and to non serious issues during the executions of tasks.” Another employee said that “we work in a command-based management systems. We just do what we are told to do. Thus, it is difficult to say that informal communication was suitable for effective information exchange in our manufacturing businesses considering the circumstance we have. We were solely relying on formal communication than informal communication for the required information exchange, particularly for serious matters that were related to the execution of tasks.”

Although the findings by Albrech and Ropp (as cited in Verma, 2013, p.68) indicate that “workers were more likely to report talking about new ideas with those colleagues with whom they also discussed work and personal matters, rather than following prescribed channels based upon hierarchical relationship,” it was not the case in the selected manufacturing businesses in Eritrea. Instead, the interview findings of this study indicate that employees of the selected large manufacturing businesses in Eritrea prefer to communicate in a formal pattern than informal pattern considering the existing communication environment and management.

4.6.1.6 Effectiveness of Informal Communication

Although the findings in section 4.6.1.5 indicate that informal communication was not suitable for information exchange in the selected large manufacturing businesses in Eritrea, the researcher wanted to confirm these results by determining the effectiveness of informal communication. In terms of the effectiveness of informal communication in exchanging the required and needed information to perform tasks, a majority of employees confirmed that informal communication was not effective in the selected large manufacturing businesses. Thus, the findings in Table 4.19 indicates that a total of

25.8% of the employees strongly agree and agree, 14.6% neutral (neither agree nor disagree), and a total of 59.6% of the employees disagree and strongly disagree.

These results were again confirmed by the qualitative findings. The qualitative findings confirmed that informal communication was not preferable and was not considered suitable for effective information exchange particularly relating to serious issues for the execution of tasks. They further explained that informal communication led them to misunderstandings and conflicts. Also, they said that “it is difficult to share the right information informally since we lacked openness in communication.” Thus, they said that informal communication was not effective in their manufacturing businesses.

Table 4. 19 Effectiveness of informal communication

	Frequency	Percentage (%)
Strongly Agree	17	6.4
Agree	52	19.4
Neutral	39	14.6
Disagree	103	38.6
Strongly Disagree	56	21.0
Total	267	100

4.6.1.7 Informal Communication and Employee Performance

Effective informal communication can have an effect on employee performance since smooth flow of communication among employees may likely create and facilitate high performance by employees (Femi, 2014). Similarly, ineffective communication is detrimental for employees and leads them to poor performance (Atambo & Momanyi, 2016). These assertions were confirmed by employees of the selected large manufacturing businesses in Eritrea.

Table 4. 20 Informal communication and employee performance

	Quantity of products		Quality of products	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	24	9.0	26	9.7
Agree	44	16.5	43	16.1
Neutral	33	12.3	37	13.9
Disagree	101	37.9	97	36.3
Strongly Disagree	65	24.3	64	24.0
Total	267	100	267	100

According to the findings in sections 4.6.1.5 and 4.6.1.6, informal communication was not suitable and thus it was not effective. Consequently, the findings in Table 4.20 show that informal communication does not support employees to perform as required in terms of producing the required quantity and quality of products. In terms of producing the required quantity of products, the findings in Table 4.20 reveals that a total of 25.5% of the employees strongly agree and agree, 12.3% neutral (neither agree nor disagree), and a total of 62.2 % of the employees disagree and strongly disagree. Similarly, in relation to the production of the required quality of products, the findings in to Table 4.20 indicate that a total of 25.8% of the employees strongly agree and agree, 13.9% neutral (neither agree nor disagree), and a total of 60.3% of the employees disagree and strongly disagree.

From the qualitative findings discussed in sections 4.6.1.5 and 4.6.1.6 above, informal communication was not suitable and effective in information exchange, particularly for serious matters related to the executions of tasks, in the selected large manufacturing businesses in Eritrea. Further, the interviewed employees confirmed that informal communication was not more preferable and supportive to their performance. They said that although informal communication has a role in employee performance, it was not effective and thus it was not seen to support employee performance in the selected large manufacturing businesses.

4.6.1.8 Employees Preference on Communication Patterns

The researcher was further interested in determining which of the communication patterns would be preferred more by employees of the selected manufacturing businesses for effective communication. According to Table 4.21, a majority of employees of the selected large manufacturing businesses in Eritrea confirmed that they prefer formal communication for effective exchange of information and ideas so that they can produce the required quantity and quality of products. Thus, Table 4.21 shows that a total of 65.5% of the employees prefer formal communication, 9% prefer informal communication, and 25.5% prefer both formal and informal communication.

The findings in Table 4.21 were also confirmed by the qualitative findings. Majority of the interviewed employees said that formal communication is more clear and official. Formal communication minimizes the existence of misunderstanding and conflicts. Informal communication, however, lacks openness and thus difficult to get the right information in their manufacturing businesses. Most employees were communicating with caution and held important information. Thus, the employees prefer formal communication than informal communication in the selected manufacturing businesses.

Table 4. 21 Employee preference on communication patterns

	Frequency	Percentage (%)
Formal communication	175	65.5
Informal Communication	24	9.0
Both (Formal and Informal)	68	25.5
Total	267	100

The findings on employee preference on communication patterns were consistent with the findings on the effectiveness of formal and informal communication above. The findings indicated that formal communication was effective and supportive to employee performance in the selected large manufacturing businesses in Eritrea but was not the

case for informal communication. Therefore, it was logical for employees of the selected manufacturing businesses in Eritrea to prefer formal communication than informal communication considering the existing communication environment and management. This finding is consistent with findings of Owusu-Boateng and Jeduah (2014) in which they found that formal communication was predominantly used.

4.6.1.9 Correlation Analysis for Formal Communication and Employee Performance

A correlation analysis was conducted in order to determine the relationship between formal communication and employee performance. The findings of the analysis as indicated in Table 4.22 reveal that there is a significant positive relationship between formal communication and employee performance since the correlation coefficient is 0.198 ($r=0.198$, $p=0.001<0.05$). However, the relationship is weak since the value of $r=0.198$ approaches to zero at which there is no correlation.

Table 4. 22 Correlation analysis for formal communication and employee performance

		Formal communication	Employee performance
Formal Communication	Pearson Correlation	1	.198**
	Sig. (2-tailed)		.001
	N	267	267
Employee Performance	Pearson Correlation	.198**	1
	Sig. (2-tailed)	.001	
	N	267	267

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

4.6.1.10 Regression Analysis for Formal Communication and Employee Performance

A regression analysis was also conducted in order to determine the regression model for formal communication and employee performance. The model was also tested to determine whether formal communication significantly predicts employees performance.

According to Table 4.23, the adjusted R^2 is 0.036. This implies that 3.6% of employee performance would be explained by formal communication and the remaining 96.4% of employee performance was due to other factors that were not included in this model.

Table 4. 23 Regression model summary for formal communication

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.198 ^a	.039	.036	.53357

a. Predictors: (Constant), Formal Communication

Further, according to the findings in Table 4.24, the regression model is statistically significant since $p=0.001<0.05$. Thus, the model fits to predict the dependent variable (employee performance). Therefore, the model can be expressed as $Y=0.965+0.211X$, where Y = Employee performance and X = Formal communication. This indicates that increase in the effectiveness of formal communication leads to increase in employee performance by 0.211. This implies that formal communication did have influence on employee performance.

Table 4. 24 Regression analysis coefficients for formal communication

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.965	.068		14.192	.000
	Formal Communication	.211	.064	.198	3.295	.001

a. Dependent Variable: Employee Performance

4.6.1.11 ANOVA for Formal Communication

An analysis of variance (ANOVA) for formal communication was conducted in order to determine how useful the independent variable influences or is better at predicting the dependent variable (Sawyer, 2009; Field, 2013). Therefore, the findings in Table 4.25 indicate that the regression model is significantly fitted to predict the dependent variable

since $F_{1,265,0.05}=3.88 < 10.86$ with $p=0.001 < 0.05$. Hence, formal communication did have influence on employee performance.

Table 4. 25 ANOVA analysis for formal communication

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.092	1	3.092	10.860	.001 ^b
	Residual	75.445	265	.285		
	Total	78.537	266			

a. Dependent Variable: Employee Performance

b. Predictors: (Constant), Formal Communication

4.6.1.12 Correlation analysis for informal communication and employee performance

The results of the correlation analysis in Table 4.26 indicate that there is a relationship between informal communication and employee performance since the Pearson correlation coefficient is $0.115 > 0$. However, the correlation is weak since $r=0.115$ approaches zero at which there is no correlation. In addition, $p=0.061 > 0.05$, which indicates that correlation is not significant. This implies that although there is relationship between informal communication and employee performance, the relationship is not significant in the selected large manufacturing businesses in Eritrea.

Table 4. 26 Correlation analysis for informal communication and employee performance

		Informal communication	Employee performance
Informal Communication	Pearson Correlation	1	.115
	Sig. (2-tailed)		.061
	N	267	267
Employee Performance	Pearson Correlation	.115	1
	Sig. (2-tailed)	.061	
	N	267	267

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

4.6.1.13 Regression Analysis for Informal Communication and Employee Performance

The regression analysis also reveals the same result as the correlation analysis (no significant relationship). The result in Table 4.27 indicates that the adjusted R^2 is 0.009. This implies that only 0.9% of employee performance would be explained by the informal communication. The remaining 99.1% is due to other factors that were not included in this model.

Table 4. 27 Regression model summary for informal communication

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.115 ^a	.013	.009	.54079

a. Predictors: (Constant), Informal Communication

Further, according to the findings in Table 4.28, even if the correlation is not significant since $p=0.061>0.05$, the model can be expressed as $Y=0.99+0.088X$, where Y =Employee performance and X =Informal communication. However, this regression model should be tested using ANOVA in order to determine whether the model adequately predicts the dependent variable.

Table 4. 28 Regression analysis coefficients for informal communication

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.990	.096		10.267	.000
	Informal Communication	.088	.047	.115	1.884	.061

a. Dependent Variable: Employee Performance

4.6.1.14 ANOVA for Informal Communication

An ANOVA analysis was further conducted to determine whether informal communication had influence on employee performance in the selected large manufacturing businesses in Eritrea. According to the findings in Table 4.29, informal communication is not statistically significant to influence employee performance since $F_{1,265;0.05}=3.88>3.55$ with $p=0.061>0.05$. This implies that the regression model is not adequate to predict the dependent variable. Hence, informal communication did not have a significant influence on employee performance.

Table 4. 29 ANOVA analysis for informal communication

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.038	1	1.038	3.550	.061 ^b
	Residual	77.499	265	.292		
	Total	78.537	266			

a. Dependent Variable: Employee Performance

b. Predictors: (Constant), Informal Communication

4.6.1.15 Correlation analysis for communication patterns and employees performance

A correlation analysis was conducted to determine whether there is a relationship between communication patterns and employees performance. As Table 4.30 shows that the Pearson correlation coefficient (r) was 0.178 with p -value of 0.004 ($r=0.178$, $p=0.004$). Therefore, there is a statistically significant relationship between communication pattern and employee performance because $p<0.05$. However, although there is a positive relationship, the relationship is not strong since $r=0.178$ is far from $r=1$ at which there is a strong relationship. This finding is consistent with findings of Owusu-Boateng & Jeduah (2014) and Bhatia & Balani (2015) that internal communication (formal and informal) had correlated with employee performance.

Table 4. 30 Correlation analysis for communication patterns and employees performance

		Communication patterns	Employee performance
Communication Patterns	Pearson Correlation	1	.178**
	Sig. (2-tailed)		.004
	N	267	267
Employee Performance	Pearson Correlation	.178**	1
	Sig. (2-tailed)	.004	
	N	267	267

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

4.6.1.16 Regression analysis for communication patterns and employee performance

A linear regression analysis was used to test if the communication patterns significantly predicts employees performance. The findings of the regression analysis in Table 4.31 indicates that there is a relationship between communication pattern and employee performance in which the adjusted R^2 is 0.028. This implies that only 2.8% of the employee performance can be explained by the communication patterns. The remaining 97.2% of the employees performance are due to other factors which are not included in this model.

Table 4. 31 Regression model summary for communication patterns

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.178 ^a	.032	.028	.53573

a. Predictors: (Constant), Communication Patterns

In addition, Table 4.32 illustrates that the test of beta coefficient reveals that communication patterns significantly predicts employees performance since $P=0.004 < 0.05$. Therefore, the model can be defined as $Y=0.866+0.199X$, where Y =Employee performance and X =Communication patterns. This indicates that increase in the effectiveness of the communication patterns leads to increase in the performance

of employees by 0.199. This means that communication patterns did have influence on employees performance.

Table 4. 32 Regression analysis coefficients for communication patterns

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.866	.106		8.207	.000
	Communication patterns	.199	.068	.178	2.940	.004

a. Dependent Variable: Employee Performance

4.6.1.17 ANOVA for Communication Patterns

An analysis of variance (ANOVA) was conducted in order to determine the influence of the independent variable on the dependent variable or to determine how better the independent variable is at predicting the dependent variable (Sawyer, 2009; Field, 2013). Therefore, the findings in Table 4.33 indicate that the relationship between communication pattern and employee performance is statistically significant since $F_{1,265;0.05}=3.88 < 8.643$ with $p=0.004 < 0.05$. Thus, the regression model is significantly fit to predict the dependent variable. Hence, it can be concluded that communication patterns have influence on employee performance in the selected large manufacturing businesses in Eritrea.

Table 4. 33 ANOVA analysis for communication patterns

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.481	1	2.481	8.643	.004 ^b
	Residual	76.056	265	.287		
	Total	78.537	266			

a. Dependent Variable: Employee Performance

b. Predictors: (Constant), Communication Pattern

4.6.2 Communication Structure

The second objective of the study to be investigated was the influence of communication structures on employee performance in the selected large manufacturing businesses in Eritrea. Therefore, it was important to determine if employees of the manufacturing businesses communicate through the existing communication structures (in terms of downward, upward, horizontal, and diagonal communication). It was also important to determine the effectiveness of these specific communication structures from the descriptive statistical analysis perspectives. The inferential statistics was also done in order to determine the relationship of communication structure and employee performance. These statistical findings were merged with their respective interview results in order to elaborate the overall findings of the study.

4.6.2.1 Communicating through existing Communication Structure

According to the Social Network Theory, employees in an organization are connected with certain communication networks in which a regular pattern of information flows. Therefore, it was important to determine whether there existed communication structures in the selected manufacturing businesses and if they were clear and well structured. The findings in Table 4.34 indicate that a total of 46.4% of employees of the selected large manufacturing businesses confirmed that there was a clear and well structured communication structure. Thus, Table 4.34 shows that a total of 46.4% of the employees strongly agree and agree, 19.9% neutral (neither agree nor disagree), and a total of 33.7% of the employees disagree and strongly disagree. In addition, the findings in Table 4.34 indicate that a majority of employees of the selected manufacturing businesses confirmed that they communicate through the existed communication structures. Thus, Table 4.34 shows that a total of 55.1% of the employees strongly agree and agree, 23.2% neutral (neither agree nor disagree), and a total of 21.7% of the employees disagree and strongly disagree. Therefore, employees of the selected large

manufacturing businesses confirmed the existence of clear and well structured communication structure and communicate accordingly.

The findings in Table 4.34 were also confirmed by the qualitative findings. The interview findings indicate that the communication structure of the selected large manufacturing businesses is simply the management structure of the manufacturing businesses and communicate through such structure. However, the interview findings further indicate that it is normal to find some employees communicate not according to the communication structure due to lack of understanding about the management structure or may be disrespecting the structure deliberately or may be due to the nature of the work or may be due to other reasons. The majority of the interviewed employees confirmed that employees of the selected large manufacturing businesses communicate according to the communication structure as far as it is necessary to communicate either formally or informally.

Table 4. 34 Existence of communication structure & communicating through the structure

	Clear and well structured communication structure		Communicating through communication structure	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	48	18.0	55	20.6
Agree	76	28.4	92	34.5
Neutral	53	19.9	62	23.2
Disagree	56	21.0	43	16.1
Strongly Disagree	34	12.7	15	5.6
Total	267	100	267	100

The above findings are consistent with the theoretical concepts of the existence of communication structure in organizations in which employees communicate

accordingly. Indeed, organizations adopt their own organizational structure that defines the communication structure within the organization that should be adopted by employees for communication (Atambo & Momanyi, 2016; Ali, 2016). It was therefore relevant that employees of the selected large manufacturing businesses in Eritrea adopt and communicate according to their respective communication structures.

4.6.2.2 Vertical Communication (Downward and Upward Communication)

Once it was determined that employees of the selected manufacturing businesses communicate according to the existing communication structures, it was important to discuss the specific communication structures. Thus, it was important to determine whether employees of the manufacturing businesses communicate vertically and whether vertical communication (two-way communication) was encouraged. According to Table 4.35, a majority of employees of the selected large manufacturing businesses confirmed that they do communicate vertically. Table 4.35 indicates that a total of 50.2% of the employees strongly agree and agree, 15% neutral (neither agree nor disagree), and a total of 34.8% of the employees disagree & strongly disagree.

In addition, Table 4.35 shows that 40.4% of employees of the selected large manufacturing businesses confirmed that two-way communication was encouraged. Thus, Table 4.35 indicates that a total of 40.4% of the employees strongly agree and agree, 26.6% neutral (neither agree nor disagree), and a total of 33% of the employees disagree and strongly disagree. This is consistent with one of the features of the human relations theory, which is the participative management. It is also consistent with Wrench et al. (as cited in Atambo & Momanyi, 2016) and Ali (2016) that it is important to encourage two-way communication (downward and upward) for improved employee performance.

Although the findings in Table 4.35 indicate that 40.4% of employees of the selected large manufacturing businesses confirmed that two-way communication was encouraged, the interview findings reveal that upward communication was not really

encouraged. The interviewed employees explained that vertical communication should be part of the procedure for communication to ensure productivity. For instance, job order and other relevant information come downward and formally from upper levels. At the same time, the lower level employees should communicate with upper levels on issues related to tasks (e.g., the feasibility of the order, resources they need, new ideas, and so on). However, the respondents said that this was not the usual case in relation to upward communication. Upward communication was also not encouraged. Employees did not want to communicate innovative ideas and suggestions to upper levels except through routine reports. This is because of lack of responses from upper levels that discourage employees to communicate upwards in terms of new idea and suggestions. This is consistent with the theoretical explanations of Ali (2016) and Wrench et al. (as cited in Atambo & Momanyi, 2016) that there are many ways in which two-way communication may not be encouraged in organizations or employees may not be motivated specifically to communicate upwards due to lack of appropriate responses by upper level management.

Table 4. 35 Vertical communication

	Communicating vertically		Encouraging vertical communication	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	61	22.8	45	16.9
Agree	73	27.4	63	23.5
Neutral	40	15.0	71	26.6
Disagree	56	20.9	55	20.6
Strongly Disagree	37	13.9	33	12.4
Total	267	100	267	100

4.6.2.3 Effectiveness of Vertical Communication

The findings in section 4.6.2.2 confirmed that employees of the selected large manufacturing businesses communicate vertically. However, it was important to determine the effectiveness of the downward and upward communication in the selected large manufacturing businesses. In relation to downward communication, the findings in Table 4.36 indicate that a majority of employees of the selected large manufacturing businesses confirmed that downward communication was effective to them. Thus, Table 4.36 indicates that a total of 48.3% of the employees strongly agree and agree, 23.2% neutral (neither agree nor disagree), and a total of 28.5% of the employees disagree and strongly disagree. Similarly, in relation to upward communication, Table 4.36 indicates that 39.7% of employees of the selected large manufacturing businesses confirmed that upward communication was effective to them. Thus, Table 4.36 shows that a total of 39.7% of the employees strongly agree and agree, 26.6% neutral (neither agree nor disagree), and a total of 33.7% of the employees disagree and strongly disagree.

Although the findings in Table 4.36 indicate that vertical communication was effective with minimal margins, the qualitative findings confirmed that only not direction of communication is effective in the manufacturing businesses. They explained that in most manufacturing businesses, downward communication was effective but upward communication was not very effective. Upward communication was noted to be poor. Thus, according to the interview findings, there was communication from upper level to lower level following the communication structure in terms of job order and other relevant information but it was weak upward since responses from upper level was weak. As a result, lower level employees did not want or were not encouraged to communicate upwards in terms of forwarding their new ideas and suggestions except providing reports. Therefore, upward communication was not effective for employees of the selected large manufacturing businesses in Eritrea.

Table 4. 36 Effectiveness of downward and upward communication

	Downward communication		Upward communication	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	47	17.6	41	15.4
Agree	82	30.7	65	24.3
Neutral	62	23.2	71	26.6
Disagree	55	20.6	67	25.1
Strongly Disagree	21	7.9	23	8.6
Total	267	100	267	100

4.6.2.4 Vertical Communication and Employee Performance

Once the effectiveness of vertical communication was determined in section 4.6.2.3, it was important to further determine whether vertical communication enabled employees to produce the required quantity and quality of products. In relation to downward communication, the findings in Table 4.37 indicate that a majority of the employees confirmed that downward communication enabled them to produce the required quantity and quality of products with total representation of 70.4% and 68.5% respectively. Thus, for quantity of products, Table 4.37 indicates that a total of 70.4% of the employees strongly agree and agree, 15% neutral (neither agree nor disagree), and a total of 14.6% of the employees disagree and strongly disagree. Similarly, for quality of products, Table 4.37 indicates that a total of 68.5% of the employees strongly agree and agree, 15.4% neutral (neither agree nor disagree), and a total of 16.1% of the employees disagree and strongly disagree.

Table 4. 37 Downward communication and employee performance

	Quantity of products		Quality of products	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	74	27.7	66	24.7
Agree	114	42.7	117	43.8
Neutral	40	15.0	41	15.4
Disagree	31	11.6	31	11.6
Strongly Disagree	8	3.0	12	4.5
Total	267	100.0	267	100.0

In relation to upward communication, the findings in Table 4.38 indicate that a majority of the employees confirmed that upward communication enabled them to produce the required quantity and quality of products with total representations of 64.4% and 60.6% respectively. Thus, for quantity of products, Table 4.38 indicates that a total of 64.4% of the employees strongly agree and agree, 19.5% neutral (neither agree nor disagree), and a total of 16.1% of the employees disagree and strongly disagree. Similarly, for quality of products, Table 4.38 indicates that a total of 60.6% of the employees strongly agree and agree, 22.1% neutral (neither agree nor disagree), and a total of 17.3% of the employees disagree and strongly disagree.

These findings are consistent with the findings of Atambo and Momanyi (2016) that both downward and upward communication had influence on employee performance. The findings are also consistent with the findings of Ali (2016) that effective communication channels influence employee performance positively and ineffective or weak channels will not have any positive effect on employee performance. Therefore, it can be concluded that downward and upward communication have influence on employee performance in the selected large manufacturing businesses in Eritrea.

Table 4. 38 Upward communication and employee performance

	Quantity of products		Quality of products	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	62	23.2	68	25.4
Agree	110	41.2	94	35.2
Neutral	52	19.5	59	22.1
Disagree	30	11.2	33	12.4
Strongly Disagree	13	4.9	13	4.9
Total	268	100.0	268	100.0

4.6.2.5 Horizontal Communication

Horizontal communication is a communication between different departments or units within the organization. It exists to enhance information flow and coordination so that work can be done properly (Verma, 2013). Therefore, the researcher was interested to determine whether horizontal communication is supported and whether employees communicate horizontally in the selected large manufacturing businesses in Eritrea. Table 4.39 indicates that a majority of employees of the selected large manufacturing businesses confirmed that the manufacturing businesses were supporting horizontal communication, 50.2%, and employees communicated horizontally, 58.8%. In relation to supporting horizontal communication, Table 4.39 shows that a total of 50.2% of the employees strongly agree and agree, 24% neutral (neither agree nor disagree), and a total of 25.8% of the employees disagree and strongly disagree. In relation to communicating horizontally, Table 4.39 shows that a total of 58.8% of the employees strongly agree and agree, 16.5% neutral (neither agree nor disagree), and a total of 24.7% of the employees disagree and strongly disagree.

The qualitative findings are also consistent with the findings in Table 4.39. The interview findings confirmed that horizontal communication was quite crucial since the work processes dictates they communicate horizontally. The management encouraged or

supported them to communicate horizontally. For instance, one employee explained that in these manufacturing businesses, there are different departments such as cutting, weaving, assembly, and finishing. These departments communicate within and across departments (horizontally). The work process forced them to communicate effectively since the work processes are sequential and need to be coordinated even though they are categorized under different units or departments. Another employee similarly also explained that there are three sub-departments within the production departments. These are: brew house, fermentation, and filtration. These three sub-departments communicate with the quality assurance sub-department (laboratory) if they need some assistance. They also communicate among the three departments since their work is sequential or follow chain and thus the work needs to be coordinated. Generally, the majority of the interviewed employees confirmed that horizontal communication was supported and employees did communicate accordingly.

Table 4. 39 Supporting and communicating horizontally

	Supporting horizontal communication		Communicating horizontally	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	41	15.4	43	16.1
Agree	93	34.8	114	42.7
Neutral	64	24.0	44	16.5
Disagree	47	17.6	44	16.5
Strongly Disagree	22	8.2	22	8.2
Total	267	100	267	100

4.6.2.6 Effectiveness of Horizontal Communication

In relation to the effectiveness of horizontal communication, although 39.3% of employees of the selected large manufacturing businesses confirmed that horizontal communication was effective, it is only higher with the margin of 1.8%. Thus, Table

4.40 shows that a total of 39.3% of the employees strongly agree and agree, 23.2% neutral (neither agree nor disagree), and a total of 37.5% of the employees disagree and strongly disagree.

However, the interview findings confirmed that horizontal communication was effective. The interviewed employees explained that the work processes in these manufacturing businesses are in chains that demand horizontal communication between units or departments and need to coordinate work processes. If they do not communicate horizontally, then there would be an immediate problem in the process of work. It was therefore noted that horizontal communication was mandatory and must be effective. essentially, there is much more horizontal communication in organizations on a daily basis because employees at the same level feel more comfortable talking with each other than with people at different authority levels (Richmond et al., 2005). Therefore, considering the descriptive results and the interview findings, horizontal communication was fairly effective in the selected large manufacturing businesses in Eritrea.

Table 4. 40 Effectiveness of horizontal communication

	Frequency	Percentage (%)
Strongly Agree	38	14.2
Agree	67	25.1
Neutral	62	23.2
Disagree	66	24.8
Strongly Disagree	34	12.7
Total	267	100

4.6.2.7 Horizontal Communication and Employee Performance

Once the effectiveness of horizontal communication was determined, it was important to further determine whether horizontal communication enabled employees to produce the required quantity and quality of products. The findings in Table 4.41 indicate that a

majority of the employees confirmed that horizontal communication enabled them to produce the required quantity and quality of products with total representations of 67.4% and 67% respectively.

For quantity of products, Table 4.41 indicates that a total of 67.4% of the employees strongly agree and agree, 17.6% neutral (neither agree nor disagree), and a total of 15% of the employees disagree and strongly disagree. Similarly, for quality of products, Table 4.41 indicates that a total of 67% of the employees strongly agree and agree, 18.8% neutral (neither agree nor disagree), and a total of 14.2% of the employees disagree & strongly disagree. These findings are consistent with the findings of Atambo & Momanyi (2016) that horizontal communication was vital for employee performance. Therefore, horizontal communication enabled employee to perform as required in the selected large manufacturing businesses in Eritrea.

Table 4. 41 Horizontal communication and employee performance

	Quantity of products		Quality of products	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	54	20.2	54	20.2
Agree	126	47.2	125	46.8
Neutral	47	17.6	50	18.8
Disagree	34	12.8	31	11.6
Strongly Disagree	6	2.2	7	2.6
Total	267	100.0	267	100.0

4.6.2.8 Diagonal Communication

Diagonal communication is a communication between employees or departments that do not have a direct relationship in the management structure of an organization. It was therefore important to confirm whether employees of the selected large manufacturing businesses in Eritrea communicate diagonally. According to the findings in Table 4.42, a

majority of employees with a total representation of 55.1% confirmed that they did not communicate diagonally. Thus, Table 4.42 shows that a total of 23.2% of the employees strongly agree and agree, 21.7% neutral (neither agree nor disagree), and a total of 55.1% of the employees disagree and strongly disagree.

The interview findings were also consistent with the findings in Table 4.42. Thus, the interviewed employees confirmed that diagonal communication was not widely used in their manufacturing businesses and thus happened very rarely. These findings further agreed with what Wilson (1992) theoretically stated that diagonal communication is another communication structure in an organization that is not widely used.

Table 4. 42 Communicating diagonally

	Frequency	Percentage (%)
Strongly Agree	14	5.2
Agree	48	18.0
Neutral	58	21.7
Disagree	100	37.5
Strongly Disagree	47	17.6
Total	267	100

4.6.2.9 Effectiveness of Diagonal Communication

Although diagonal communication was not used widely in the selected manufacturing businesses in Eritrea as confirmed in Table 4.43, the researcher wanted to determine the effectiveness of diagonal communication. The findings indicate that a majority of employees of the selected large manufacturing businesses with a total representation of 64.2% confirmed that diagonal communication was not effective. Thus, Table 4.43 shows that a total of 15.7% of the employees strongly agree and agree, 20.1% neutral (neither agree nor disagree), and a total of 64.2% of the employees disagree and strongly disagree.

Table 4. 43 Effectiveness of diagonal communication

	Frequency	Percentage (%)
Strongly Agree	10	3.7
Agree	32	12.0
Neutral	54	20.3
Disagree	117	43.8
Strongly Disagree	54	20.2
Total	267	100

4.6.2.10 Diagonal Communication and Employee Performance

Although the findings in sections 4.6.2.8 and 4.6.2.9 respectively confirmed that diagonal communication was rarely used and was not effective, the researcher also examined whether diagonal communication enabled employees to perform as required in terms of producing the required quantity and quality of products. The findings in Table 4.44 indicate that a majority of the employees confirmed that diagonal communication did not enable them to produce the required quantity and quality of products. Thus, for quantity of products, Table 4.44 indicates that a total of 28.5% of the employees strongly agree and agree, 22.5% neutral (neither agree nor disagree), and a total of 49% of the employees disagree and strongly disagree.

Similarly, for quality of products, Table 4.44 indicates that a total of 27% of the employees strongly agree and agree, 22.4% neutral (neither agree nor disagree), and a total of 50.6% of the employees disagree & strongly disagree. This is due to the fact that diagonal communication is not widely used in the selected manufacturing businesses in Eritrea.

Table 4. 44 Diagonal communication and employee performance

	Quantity of products		Quality of products	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Strongly Agree	23	8.6	18	6.7
Agree	53	19.9	54	20.3
Neutral	60	22.5	60	22.4
Disagree	89	33.3	101	37.9
Strongly Disagree	42	15.7	34	12.7
Total	267	100.0	267	100.0

4.6.2.11 Regularly Used Communication Structure

In relation to the communication structure, the researcher was interested to determine which communication structure was used regularly in the selected large manufacturing businesses in relation to the production of the required quantity and quality of products. According to Table 4.45, employees with a representation of 31.5 % confirmed that they use all types of communication structures, 29.6% downward, 25.5% upward, 11.9% horizontal, 1.5% diagonal communication. Therefore, employees of the selected large manufacturing businesses in Eritrea used all types of the communication structure regularly. However, based on the findings in section 4.6.2.8, diagonal communication was not used widely in the selected large manufacturing businesses. These findings imply that employees of the selected large manufacturing businesses in Eritrea use vertical and horizontal communication structures regularly.

Table 4. 45 Regularly used communication structure

	Frequency	Percentage (%)
Downward	79	29.6
Upward	68	25.5
Horizontal	32	11.9
Diagonal	4	1.5
All	84	31.5
Total	267	100

4.6.2.12 Correlation analysis for communication structure and employees performance

A correlation analysis was conducted to determine whether there is a relationship between communication structure and employees performance. As Table 4.46 shows, the Pearson correlation coefficient (r) is 0.492 with p -value of 0.000 ($r=0.492$, $p=0.000$). Therefore, there is a statistically significant relationship between communication structure and employees performance because $p<0.05$. Thus, there is a positive relationship but the relationship is not strong since $r=0.492$ does not approach to $r=1$ at which a relationship is strong.

Table 4. 46 Correlation analysis for communication structure and employee performance

		Communication Structure	Employee Performance
Communication structure	Pearson Correlation	1	.492**
	Sig. (2-tailed)		.000
	N	267	267
Employee performance	Pearson Correlation	.492**	1
	Sig. (2-tailed)	.000	
	N	267	267

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

4.6.2.13 Regression analysis for communication structure and employee performance

A linear regression analysis was used to test whether the communication structure significantly predicts employee performance. The findings of the regression analysis in Table 4.47 indicates that there is a relationship between communication structure and employee performance in which the adjusted R^2 is 0.24. This means that only 24% of the employees performance can be explained by the communication structure. The remaining 76% of the employees performance are due to other factors which are not included in this model.

Table 4. 47 Regression analysis model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.492 ^a	.243	.240	.47380

a. Predictors: (Constant), Communication Structure

Further, Table 4.48 illustrates that the test of beta coefficient reveals that communication structure significantly predicted employees performance since $P=0.000<0.05$. Thus, the model is statistically significant. Therefore, the model can be defined as $Y=0.282+0.523X$, where Y =Employee performance and X =Communication structure. This indicates that an increase in the effectiveness of the communication structure leads to an increase the performance of employees by 0.523.

Table 4. 48 Regression analysis coefficients for communication structure

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.282	.100		2.827	.005
	Communication Structure	.523	.057	.492	9.211	.000

a. Dependent Variable: Employee Performance

4.6.2.14 ANOVA analysis for communication structure and employee performance

An analysis of variance (ANOVA) was conducted in order to determine the influence of communication structure on employee performance. According to the findings in Table 4.49, there is statistically significant relationship between communication structure and employee performance since $F_{1,265;0.05}=3.88<84.846$ with $p=0.000<0.05$. Thus, the regression model is significantly fit or adequate to predict employee performance. Hence, it can be concluded that communication structure has influence on employee performance in the selected large manufacturing businesses in Eritrea.

Table 4. 49 ANOVA analysis for communication structure

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	19.047	1	19.047	84.846	.000 ^b
1 Residual	59.490	265	.224		
Total	78.537	266			

a. Dependent Variable: Employee Performance

b. Predictors: (Constant), Communication Structure

The above inferential analysis (correlation, regression and ANOVA) confirmed that there was a relationship between communication structure and employees performance. Thus, it was confirmed that communication structure has influence on employee performance. This finding was also confirmed by the qualitative findings. The interview findings show that communication structure was the base for information exchange related to their tasks. Information was the source for our productivity. Without communication and flow of information, jobs cannot be done. They need to know with whom they should communicate to, to get the required information. In this case, the communication structure was important since it was clearly setting out the direction of communication. It determined the flow of information in the businesses. The interviewees confirmed that it helps them to get the needed information on time from the respective individuals and offices to do the job. Thus, it helps them to communicate in different directions and get the information that they need in time so as to execute tasks accordingly. As a result, they produce the required products in terms of quantity and quality. Therefore, it had a role in their performance. However, they said that “there were instances where following such structure would obstruct getting the needed information because of the individual behaviors and interests in the management structure, lack of or delay of responses by individuals or concerned officers, and so on. Such obstructions had affected performance negatively. Therefore, communication structure has influence on employee performance.

According to the inferential analysis and the interview findings above, there is a relationship between communication structure and employee performance. These findings agreed with the findings of Nwata et al. (2016), Atambo and Momanyi (2016), and Hikmah (2015) that there is a significant association between communication structure and employee performance. It can therefore be concluded that there is a relationship between communication structure and employee performance in the selected large manufacturing businesses in Eritrea. Therefore, communication structure has influence on employee performance in the selected large manufacturing businesses in Eritrea.

4.6.3 Communication Medium

The third objective of the study to be investigated was the influence of communication medium on employee performance in the selected large manufacturing businesses in Eritrea. It was important first to determine which communication medium was used by employees of the selected large manufacturing businesses in Eritrea for communication. It was also important to determine the effectiveness of the medium used in enabling employees to have effective information exchange so that employees would achieve their intended performances in terms of producing the required quantities and qualities of products. Therefore, for these purposes, descriptive statistical analysis was performed. In addition, the inferential statistics was done in order to determine the relationship between communication medium and employee performance. These descriptive and inferential findings were also merged with the interview findings as required in order to elaborate on the findings of the study.

4.6.3.1 Communication Medium Used

According to Crescenzo and Men (as cited in Men & Hung-Baesecke, 2015), employees of an organization use a wide array of communication tools to communicate, ranging from conventional channels (oral and written/print) to web-based platforms (electronic media). However, the descriptive statistics in Table 4.50 and the qualitative findings

revealed that employees of the selected large manufacturing businesses used oral and print media only. They did not use electronic media or internet based technologies that constitute email, intranets and social media since the technology was not available to employees of the manufacturing businesses in Eritrea.

In relation to oral communication media, Table 4.50 indicates that a total 58.8% of the employees confirmed that they used oral medium (37.5% always and 21.3% very often). However, some employees had confirmed that they used oral medium sometimes and rarely with representations of 28.8% and 12% respectively. Only one employee (0.4%) confirmed that he had never used oral media for communication in the workplace. For written or print media, Table 4.50 also indicates that a total of 26.6% of the employees confirmed that they used written media (11.2% always and 15.4% very often), 22.5% sometimes, 22.5% rarely, and 28.4% of the employees never used written media. However, in relation to electronic media, the findings in Table 4.50 indicate that all employees (100%) confirmed that they didn't use electronic media for communication at all in their manufacturing businesses. These findings revealed that oral media was widely used followed by written media but electronic media was not used at all by employees of the selected manufacturing businesses.

The above findings were consistent with the interview findings. The interviewed employees confirmed that they used both the oral and written communication medium but never used electronic media since the technology was not available. They used oral for the purpose of further explanations and exchange of ideas or information that involves immediate feedback (face-to-face, telephone and meetings) but written was used for formal communication (for instance, report, important information, job direction or job order).

Table 4. 50 Communication medium used by employees

	Oral Media		Written Media		Electronic Media	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Always	100	37.5	30	11.2	-	-
Very often	57	21.3	41	15.4	-	-
Sometimes	77	28.8	60	22.5	-	-
Rarely	32	12.0	60	22.5	-	-
Never used	1	0.4	76	28.4	267	100.0
Total	267	100	267	100	267	100

4.6.3.2 Effectiveness of Oral and Written Media

Lengl and Daft (1988) pointed out that a communication medium can enhance or distort the intended message and thus affect the effectiveness of communication. This implies that effective media is required for effective communication. According to Table 4.50, employees of the selected large manufacturing businesses confirmed that they used oral media and written media but not electronic media. Therefore, it was important to determine the level of effectiveness of these media that were used by the employees of the manufacturing businesses. According to the findings in Table 4.51, a majority of employees confirmed that oral and written media were at some level of effective and very effective in terms of delivering accurate, complete, clear, relevant and timely information in the selected manufacturing businesses in Eritrea.

In relation to oral media, Table 4.51 indicates that a majority of the employees confirmed that oral media highly used. The representations of very effective and effective are 39% and 31% respectively. In line with this, 20.6% of employees indicated neutral (neither effective nor ineffective) and a total of 9.4% ineffective and very ineffective. Similarly, in relation to written media, Table 4.51 indicates that a majority of the employees confirmed that written media was effective and very effective with

representations of 31.8% and 20.6% respectively. However, 24.4% confirmed neutral (neither effective nor ineffective) and a total of 23.2% ineffective and very ineffective.

Based on the findings on Table 4.51, oral and written media were effective with a total representation of 70% and 52.4% respectively. These findings reveal that oral media was more effective than written media in the selected large manufacturing businesses in Eritrea. This finding is consistent with the Media Richness Theory (MRT). According to MRT, oral communication holds higher richness in communication.

Table 4. 51 Level of effectiveness of oral and written media

	Oral Media		Written Media	
	Frequency	Percentage	Frequency	Percentage
Very effective	104	39.0	55	20.6
Effective	83	31.0	85	31.8
Neutral	55	20.6	65	24.4
Ineffective	10	3.8	23	8.6
Very ineffective	15	5.6	39	14.6
Total	267	100	267	100

4.6.3.3 Employees Preference of Communication Media

According to Media Richness Theory (MRT), communication media vary in the capacity of richness to convey information. The reasons for richness difference include: “the medium's capacity for immediate feedback, the number of cues and channels utilized, personalization, and language variety” (Daft & Lengel, 1986, 560). In addition, Dennis and Valacich (1999, p.1) stated that “media varied in their ability to enable users to communicate and change understanding.” Therefore, considering MRT or the effectiveness of the media, it was important to determine which communication media was preferable to employees of the selected manufacturing businesses in Eritrea. According to the findings in Table 4.52, a majority of employees of the selected large

manufacturing businesses confirmed that they preferred oral media for communication. Thus, Table 4.52 shows that 57.3% of the employees preferred oral media and 42.7% preferred written media. Hence, this finding is consistent with the findings in section 4.4.3.2 and agreed with MRT that oral media holds the higher capacity of richness for communication and thus it is preferable.

Table 4. 52 Preferences of communication media

	Frequency	Percentage (%)
Oral media	153	57.3
Written media	114	42.7
Total	267	100

4.6.3.4 Selection of Communication Media

In addition to the preference of a communication media to be used, it was important to determine whether employees of the selected large manufacturing businesses select a communication media in relation to its capacity to deliver information and thus according to the MRT. Therefore, according to Table 4.53, a majority of employees confirmed that they select a communication media in relation to its capacity to deliver information. Thus, Table 4.53 illustrates that a total of 68.2% of the employees strongly agree and agree, 16.8% neutral (neither agree nor disagree), and a total of 15% of the employees disagree and strongly disagree. This finding is also consistent with MRT.

Table 4. 53 Selecting communication media

	Frequency	Percentage (%)
Strongly Agree	62	23.2
Agree	120	45.0
Neutral	45	16.8
Disagree	33	12.4
Strongly Disagree	7	2.6
Total	268	100

In addition, the interview findings further indicate that employees of the selected manufacturing businesses considered a number of factors to select a media for communication. These factors include the nature of the work or tasks that would be executed, seriousness of the issue, the weight of the information, the ability of the medium to transfer the right information clearly, the need of immediate feedback, formalization of the issues, and individual personalities - some employees do not listen or do not care what is said. Such personalities demand to communicate in oral or written or both using strong words.

4.6.3.5 Communication Media and Employee Performance

Daft and Lengel (as cited in Dennis & Valacich, 1999, p.1) stated that “Media Richness Theory (MRT) proposes that task performance will be improved when task needs are matched to a medium's ability to convey information.” It was therefore important to determine whether the use of appropriate communication media enabled employees to perform as required in terms of producing the required quantity and quality of products. According to the findings in Table 4.54, a vast majority of employees confirmed that the use of appropriate media enabled them to perform as required. In relation to quantity of products, Table 4.54 indicates that a total of 79.8% of the employees strongly agree and agree, 10.1% neutral (neither agree nor disagree), and a total of 10.1% of the employees disagree and strongly disagree. Similarly, in relation to quality of products, Table 4.54 also indicates that a total of 76.4% of the employees strongly agree and agree, 14.2% neutral (neither agree nor disagree), and a total of 9.4% of the employees disagree and strongly disagree. This finding is once again consistent with the MRT theory.

Table 4. 54 Communication media and employee performance

	Quantity of Products		Quality of Products	
	Frequency	Percentage	Frequency	Percentage
Strongly Agree	90	33.7	90	33.7
Agree	123	46.1	114	42.7
Neutral	27	10.1	38	14.2
Disagree	20	7.5	16	6.0
Strongly Disagree	7	2.6	9	3.4
Total	267	100	267	100

4.6.3.6 Correlation analysis for communication medium and employees performance

A correlation analysis was conducted to determine whether there is a relationship between communication medium and employee performance. As Table 4.55 shows that the Pearson correlation coefficient was 0.42 ($r=0.42$, $p=0.000$). Therefore, there is a statistically significant relationship between communication medium and employees performance because $p<0.05$. Therefore, there is a positive relationship but the relationship is not strong since $r=0.42$ is far from $r=1$ at which there is strong correlation.

Table 4. 55 Correlation analysis for communication medium and employee performance

		Communication medium	Employee performance
Communication medium	Pearson Correlation	1	.420**
	Sig. (2-tailed)		.000
	N	267	267
Employee performance	Pearson Correlation	.420**	1
	Sig. (2-tailed)	.000	
	N	267	267

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

4.6.3.7 Regression analysis for communication medium and employee performance

A linear regression analysis was used to test whether the communication medium significantly predicts employee performance. The findings of the regression analysis in Table 4.56 shows that there is a relationship between communication medium and employee performance in which the adjusted R^2 is 0.174. This implies that only 17.4% of the employee performance can be explained by the communication medium. The remaining 82.6% of the employees performance are due to other factors which are not included in this model.

Table 4. 56 Regression analysis model summary for communication medium

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.420 ^a	.177	.174	.49393

a. Predictors: (Constant), Communication Medium

Moreover, Table 4.57 illustrates that the test of beta coefficient reveals that communication medium significantly predicted employees performance since $P=0.000<0.05$. Thus, the model is statistically significant. Therefore, the model can be defined as $Y=0.58+1.866X$, where Y =Employee performance and X =Communication medium. This indicates that increasing the use of effective communication medium leads to increase on the performance of employee by 1.866.

Table 4. 57 Regression analysis coefficients for communication medium

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.580	.083		7.013	.000
	Communication Medium	1.866	.247	.420	7.544	.000

a. Dependent Variable: Employee Performance

4.6.3.8 ANOVA Analysis for Communication Medium

An analysis of variance (ANOVA) for communication medium was conducted in order to determine the influence of the independent variable on the dependent variable (Sawyer, 2009; Field, 2013). Therefore, the findings in Table 4.58 indicate that the relationship between communication medium and employee performance is statistically significant since $p=0.000<0.05$. Therefore, the regression model is significantly fit to adequately predict employee performance since $F_{1,265;0.05}=3.88<56.918$ with $p=0.000<0.05$. Hence, communication medium has influence on employee performance in the selected large manufacturing businesses in Eritrea.

Table 4. 58 ANOVA analysis for communication medium

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.886	1	13.886	56.918	.000 ^b
	Residual	64.651	265	.244		
	Total	78.537	266			

a. Dependent Variable: Employee Performance

b. Predictors: (Constant), Communication. Medium

The descriptive finding in section 4.6.3.5 and the findings of the inferential analysis (correlation regression and ANOVA) confirmed that communication medium has influence on employee performance. This finding was also confirmed by the interview findings. The interview findings indicate that if an employee is slowing down the work process or not doing the job the right way, then there is no choice but to communicate orally and address the issue. In addition, if the written medium is not adequately clear to the employee, then he/she cannot proceed to do the job. In that case, you need to communicate orally and make things clear so that he/she would proceed to execute tasks. In such instances, they said that, the medium helped to facilitate the work and perform in the right way. This meant that using the right medium for communication would help to produce the required quantity and quality of products since it would transfer the right information that would help to do job. Hence, communication medium

has role in employee performance. In a similar manner, if the medium is not right, then it would not deliver the information and consequently the employee performance would be affected. One interviewed employee confirmed this assertion by saying that “I have experienced wrong execution of tasks because of unclear information. Previously, I was given information orally which I misunderstood but later it was written down and the work was done properly.” Further, the interviewed employees confirmed that written is clearer than oral particularly for job order. For instance, they tell you to do something orally, and then, in the next day, they say that it was not what they said. In this case, wrong products are produced and thus employee performance would be affected. They further explained that even in some instances, both written and oral would be appropriate for single information (issue) to be clear so that job can be done without any delay and obstructions. Therefore, this indicates that the medium has a role in transferring the right information to the right person which determines the executions of tasks that in turn determines employee performance.

The above statistical and interview findings are consistent with the MRT. According to Daft and Lengel (as cited in Dennis & Valacich, 1999, p.1), “Media Richness Theory (MRT) proposes that task performance will be improved when task needs are matched to a medium's ability to convey information.” Therefore, it can be concluded that communication medium has influence on employee performance in the selected manufacturing businesses in Eritrea.

4.6.4 Communication Climate

The fourth objective of the study to be investigated was the influence of communication climate on employee performance in the selected large manufacturing businesses in Eritrea. Therefore, it was first important to determine whether employees communicate by considering the existing communication climate of their manufacturing businesses. It was also important to determine whether the manufacturing businesses encourage open communication among employees and whether there exists closed communication

climate in the selected large manufacturing businesses. In addition, the researcher was interested in determining the status of the communication climate in the selected manufacturing businesses and whether this communication climate enabled employees to achieve the intended performances in terms of producing the required quantities and qualities of products. In order to achieve this purpose, descriptive statistical analysis was used as well as inferential statistics in order to determine the relationship of communication climate and employee performance in the selected large manufacturing businesses. In order to elaborate on the findings of this study, the findings of the quantitative analysis and the interview findings are merged together as required.

4.6.4.1 Communicating by considering the communication climate

The researcher was first interested in determining the existence of communication climate and if then employees communicate accordingly. Table 4.59 indicates that majority of the employees of the selected large manufacturing businesses confirmed that they communicated by considering the existing communication climate and this confirmed the existence of communication climate in their manufacturing businesses. According to Table 4.59, a total of 75.3% of the employees strongly agree and agree, 13.5% neutral (neither agree nor disagree), and a total of 11.2% of the employees disagree and strongly disagree. This finding is consistent with the Structuration Theory (ST) and with Ahsanul (2013) explanation. According to Structuration Theory (ST), communication climate is produced and reproduced through the interaction of members of the organization and thus it exists in an organization. At the same time, through knowing about the communication climate of an organization, employees can better understand what impels organization members to behave in particular ways when they communicate (Ahsanul, 2013). This implies that communication climate exists in an organization and employees communicate accordingly. Therefore, it was relevant for employees of the selected manufacturing businesses in Eritrea to communicate according to their respective communication climates.

Table 4. 59 Communicating by considering the existed communication climate

	Frequency	Percentage (%)
Strongly Agree	65	24.3
Agree	136	51.0
Neutral	36	13.5
Disagree	26	9.7
Strongly Disagree	4	1.5
Total	267	100

4.6.4.2 Encouraging Open Communication

It was also important to determine whether open communication was encouraged in the selected manufacturing businesses so as to have a suitable communication climate. Table 4.60 indicates that a total of 43.8% of employees of the selected large manufacturing businesses confirmed that the manufacturing businesses encouraged open communication among employees. According to Table 4.60, a total of 43.8% of the employees strongly agree and agree, 20.2% neutral (neither agree nor disagree), and a total of 36% of the employees disagree and strongly disagree.

The descriptive findings in Table 4.60 were consistent with the qualitative findings that showed that open communication was encouraged. The interviewed employees explained that they are from different backgrounds and with different behaviors and interests. Consequently, it would be difficult to have a suitable open communication climate. However, the findings indicate that the manufacturing businesses were trying to encourage open communication although it still needs more work.

Table 4. 60 Encouraging open communication

	Frequency	Percentage (%)
Strongly Agree	52	19.5
Agree	65	24.3
Neutral	54	20.2
Disagree	56	21.0
Strongly Disagree	40	15.0
Total	267	100

4.6.4.3 Open Communication and Employee Performance

The other important aspect that was determined was whether open communication enabled employees to perform as required in terms of producing the required quantity and quality of products. Table 4.61 indicates that a majority of employees of the selected large manufacturing businesses confirmed that open communication enabled them to perform as required. According to Table 4.61, a total of 67.4% of the employees strongly agree and agree, 18.4% neutral (neither agree nor disagree), and a total of 14.2% of the employees disagree and strongly disagree.

Table 4. 61 Open communication and employee performance

	Frequency	Percentage (%)
Strongly Agree	62	23.2
Agree	118	44.2
Neutral	49	18.4
Disagree	36	13.5
Strongly Disagree	2	0.7
Total	267	100

The qualitative findings also confirmed that open communication has an influence on employee performance. The interview findings show that the communication climate in the manufacturing businesses was good because the nature of the work demands it. They

said that they communicate openly, freely, and with trust because communication is important in order to do their jobs. They also said that having open communication is more important in the manufacturing businesses since it determines the exchange of pertinent information to the executions of tasks and thus ultimately supports their performance. Further, they said that openness, freedom, trust, and willingness to communicate are prerequisite for effective communication that determines their performance in terms of productivity. Therefore, they said that, although there was no absolute open communication, they do have open communication that actually supports their performance.

According to Rosenberg & Rosestein (as cited in Nordin, et al., 2014), open communication enhances productivity as well as profitability towards an organization and thus influences employee performance. This is consistent with the findings above. Therefore, it can be concluded that open communication enabled employees of the selected manufacturing businesses in Eritrea to perform as required.

4.6.4.4 Existence of Communication Barriers

With reference to employees' experience on communication barriers, Table 4.62 indicates that a total of 36.7% of employees of the selected large manufacturing businesses confirmed that they experienced barriers in communication, 25.1% neutral (neither agree nor disagree), and a total of 38.2% of the employees did not experience barriers to communication. However, although the proportions of experienced and inexperienced employees to communication barriers differ in small margin with representations of 36.7% and 38.2% respectively, the findings show that communication barriers existed in the manufacturing businesses.

The interview findings also confirmed the existence of communication barriers such as not being open, free, honest, and listening. The interviewed employees explained that this is a work place where employees come from different backgrounds and interests.

They also differ in terms of personalities. Therefore, it is normal to see open and closed communication since this may be associated with the individual behavior despite the manufacturing businesses encouraging open communication climate and considering communication barriers as indiscipline. They explained that barriers appeared in terms of not listening and understanding, not sharing ideas or knowledge (information or knowledge is power), not willing to communicate. There were instances where employees communicated with caution and thus communicated with less openness and honesty. In addition, one employee explained that based on their experience from other employees who had messed up their life in the manufacturing businesses by communicating freely, honest and openly, they would not be motivated to communicate honestly and openly. Thus, they had to communicate with caution or reservation. Therefore, communication barriers existed in the selected manufacturing businesses. However, according to some of the interviewed employees, the barriers rarely appeared since there was no tolerance for such barriers and were considered as part of indiscipline.

Table 4. 62 Existence of communication barriers

	Frequency	Percentage (%)
Strongly Agree	23	8.6
Agree	75	28.1
Neutral	67	25.1
Disagree	80	30.0
Strongly Disagree	22	8.2
Total	267	100

The above findings agreed with Buchholz (2001) and Nordin et al. (2014) that communication barriers (closed communication) exist in an organization. Buchholz (2001) explained that a barrier to open communication ultimately spring from an individual unfavorable past experiences. Thus, since our nature and background shape

our values, beliefs, opinions, attitudes, and expectations, it is obvious that barriers to communication exist. In addition, Nordin et al. (2014) pointed out that employees have the tendency to abstain from communicating their needs as they become very cautious in making statements and may have low level of motivation to communicate. Thus, Buchholz (2001) and Nordin et al. (2014) imply that the existence of barriers to communication in any organization is unquestionable. Therefore, it is accurate to conclude that barriers to open communication existed in the selected large manufacturing businesses in Eritrea.

4.6.4.5 Closed Communication and Employee Performance

Once the existence of communication barriers was confirmed, it was important to determine whether closed communication (communication barriers) led to low performance of employees. Table 4.63 indicates a total of 31.1% of the employees confirmed that they performed lowly as a result of communication barriers, 26.2% neutral, and a total of 42.7% of the employees disagree and strongly disagree. However, although the proportion is low at 31.1%, the finding indicated that communication barriers led to low performance by some employees.

Most of the interviewed employees had not experienced communication barriers but they believed that, if it exists, it can influence employee performance. They explained that if barriers are not noticed early and solved immediately, or while working, it affects employee performance negatively particularly if it is related to work processes or chain. No communication barrier leads to better performance since barriers block getting the needed information to do a job. The interviewed employees explained that in their manufacturing businesses, work is dependent on communication among employees. For instance, they said that “if someone is not listening properly or communicating honestly, work would be done wrongly and thus affect production in terms of speed and quality of products.” Thus, barriers are obstacles in production processes and thus affect employee performance. Another employee explained that “I had received a job order with its

specifications. However, I communicated to the upper levels that it needs certain adjustment on the specifications so that the product will maintain the required quality. But no one listened or understood me. Then, I decided to work based on the given specification but the quality was questionable.” Therefore, those interviewed concluded that barriers are obstacles and affect employee performance.

The findings shown in section sections 4.6.4.4 and 4.6.4.5 indicate that the existence of closed communication (barriers) can influence employees when experienced. This finding is consistent with Buchholz (2001) observations that in closed communication climate, information is blocked and there is no free flow of information and thus affects employee performance. It was noted that communication barriers led some employees of the selected manufacturing businesses in Eritrea to poor performance.

Table 4. 63 Closed communication and employee performance

	Frequency	Percentage (%)
Strongly Agree	21	7.9
Agree	62	23.2
Neutral	70	26.2
Disagree	79	29.6
Strongly Disagree	35	13.1
Total	267	100

4.6.4.6 Status of the communication climate in the selected manufacturing businesses

It was important to further determine the status of the communication climate in the selected large manufacturing businesses in Eritrea. Thus, it was important to determine whether the communication climate was healthy, which is a climate with honesty, openness, trust, freedom, and willingness to communicate. According to Table 4.64, a majority of employees in the selected manufacturing businesses confirmed that the communication climate of the manufacturing businesses was healthy. Table 4.64

indicates that a total of 55.1% strongly agree and agree, 24.7% neutral (neither agree nor disagree), and a total of 20.2% disagree and strongly disagree.

Table 4. 64 Status of the communication climate

	Frequency	Percentage (%)
Strongly Agree	50	18.7
Agree	97	36.4
Neutral	66	24.7
Disagree	40	15.0
Strongly Disagree	14	5.2
Total	267	100

The interview results further confirmed that the communication climate in the selected large manufacturing businesses was generally good and enabled employees to communicate among each other in order to carry out their job. The findings indicate that there was no absolute or excellent communication climate. The interview findings confirmed further that communication climate was not as good as it was expected and thus there exist barriers to effective communication. However, the qualitative findings as a whole confirmed that there was a fairly healthy communication climate in selected large manufacturing businesses.

4.6.4.7 Communication Climate and Employee Performance

In relation to the production of the required quantity of products, Table 4.65 reveals that a total of 70.4% of the employees strongly agree and agree, 14.2% neutral (neither agree nor disagree), and a total of 15.4% of the employees disagree and strongly disagree. Similarly, in relation to quality products, Table 4.65 also indicates that a total of 83.1% of the employees strongly agree and agree, 10.9% neutral (neither agree nor disagree), and a total of 6% of the employees disagree and strongly disagree. Therefore, a majority of employees of the selected large manufacturing businesses confirmed that

communication climate had influence on their performance in producing the required quantity and quality of products.

Table 4. 65 Communication climate and employees performance

	Quantity of Products		Quality of Products	
	Frequency	Percentage	Frequency	Percentage
Strongly Agree	68	25.5	77	28.8
Agree	120	44.9	145	54.3
Neutral	38	14.2	29	10.9
Disagree	32	12.0	13	4.9
Strongly Disagree	9	3.4	3	1.1
Total	267	100	267	100

The interviewed employees also confirmed that communication climate had influences on their performance. They explained that when there open communication climate, the required information exchanged and the job done as required. When there were barriers, production was affected and also defective products were produced. When there is good communication climate, employees feel comfortable and get the required information. Consequently, production would be more than expected. Thus, a healthy communication climate can enable employees to better their performance. Therefore, communication climate has influence on employee performance in the selected large manufacturing businesses.

The above findings agreed with Ahsanul (2013) and Abdussamad (2015) that communication climate significantly influences performance of the organization because climate affects the effort of an employee. It is therefore accurate to conclude that employee performance was influenced by the respective communication climate of the selected manufacturing businesses.

4.6.4.8 Correlation analysis for communication climate and employees performance

A correlation analysis was conducted to determine whether there is a relationship between communication climate and employee performance. The findings in Table 4.66 show that the Pearson correlation coefficient (r) was 0.618 with p -value of 0.000 ($r=0.618$, $p=0.000$). Therefore, there is a statistically significant relationship between communication climate and employee performance because $p<0.05$ and the relationship is positive and relatively strong because $r=0.618$ approaches to $r=1$ at which there is a strong relationship.

Table 4. 66 Correlation analysis for communication climate and employee performance

		Communication Climate	Employee Performance
Communication climate	Pearson Correlation	1	.618**
	Sig. (2-tailed)		.000
	N	267	267
Employee performance	Pearson Correlation	.618**	1
	Sig. (2-tailed)	.000	
	N	267	267

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

4.6.4.9 Regression Analysis for Communication Climate and Employee Performance

A linear regression analysis was also conducted for communication climate and employees performance in order to test the overall model and to determine whether the communication climate significantly predicts employee performance. The findings of the regression analysis in Table 4.67 show that there is a relationship between communication climate and employee performance where the adjusted R^2 is 0.38. This implies that 38% of the employees performance can be explained by the communication

climate. The remaining 62% of the employees performance are due to other factors which are not included in this model.

Table 4. 67 Regression analysis model summary for communication climate

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.618 ^a	.382	.380	.42795

a. Predictors: (Constant), Communication Climate

In addition, Table 4.68 illustrates that the test of beta coefficient reveals that communication climate significantly predicted employees performance and thus the model is statistically significant since $p < 0.05$. Therefore, the model can be expressed as $Y = 0.077 + 0.71X$, where Y = Employee performance and X = Communication climate. This indicates that an increase in the improvement of the communication climate leads to an increase in the performance of employees by 0.71.

Table 4. 68 Regression analysis coefficients for communication climate

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.077	.089		.873	.383
	Communication climate	.710	.055	.618	12.800	.000

a. Dependent Variable: Employee Performance

4.6.4.10 ANOVA Analysis for Communication Climate and Employee Performance

An ANOVA analysis was conducted to test the significance of the model better predicting the dependent variable than the mean (Sawyer, 2009; Field, 2013). Therefore, the findings in Table 4.69 indicate that the model significantly fit to adequately predict the dependent variable since $F_{1,265;0.05} = 3.88 < 163.83$ and $p = 0.000 < 0.05$. Hence,

communication climate has influence on employee performance in the selected manufacturing businesses in Eritrea.

Table 4. 69 ANOVA for communication climate and employee performance

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	30.004	1	30.004	163.830	.000 ^b
Residual	48.533	265	.183		
Total	78.537	266			

a. Dependent Variable: Employee Performance

b. Predictors: (Constant), Communication. Climate

The above statistical findings agreed with the findings of Ahsanul (2013) and Abdussamad (2015) that communication climate significantly influences employee performance. Therefore, it can be concluded that communication climate of the selected manufacturing businesses has significant influence on employee performance. Hence, communication climate influences employee performance in the selected large manufacturing businesses in Eritrea.

4.6.5 Overall Analysis (Model) for all Variables

The general objective of the study was to examine the influence of organizational communication on employee performance in the selected large manufacturing businesses in Eritrea. In this study, organizational communication was described using four independent variables as it is depicted in the conceptual framework. Therefore, a multi linear regression analysis was used to determine whether the independent variables: communication patterns (X_1), communication structure (X_2), communication medium (X_3), and communication climate (X_4); influence the dependent variable: employee performance. These independent variables examined whether the multi regression model would be used to explain the influence of all the variables (organizational communication) on employee performance. Therefore, the Model 2,

which is described in section 3.10, was used for the multi-regression analysis. Thus, the overall model of this study is:

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

Where;

Y = Employee performance (Dependent variable)

X₁ = Communication patterns (independent variable)

X₂ = Communication structure (independent variable)

X₃ = Communication medium (independent variable)

X₄ = Communication climate (independent variable)

β₀ = Constant (Coefficient of intercept)

β₁ ... β₄ = Regression coefficients of the four independent variables

ε = Error term

In this model, the dependent variable is employee performance (Y), and the independent variables include X₁ --- X₄. The results of the regression model summary and the regression coefficients were used to determine whether there is a significant relationship between all the independent variables and the dependent variable. The model would also be used to determine whether all the independent variables predict and explain the dependent variable. Thus, the coefficients of multiple determination, the regression coefficients, and ANOVA (to test the significance of the model to predict) were considered to conduct the analysis. The adjusted R² was used to check how well the model fit as the proportion of variation in response that explains the regression on all the predictors in the model.

4.6.5.1 Correlation for all variables

Considering the general objective of the study, it was important to determine the relationship of all the variables and employee performance. Accordingly, the findings in Table 4.70 indicates that there was a positive and relatively strong relationship between all the independent variables and employee performance since the correlation coefficient was 0.677 (R = 0.677), which approaches to r=1 at which there is a strong relationship.

In addition, Table 4.62 indicates that the adjusted coefficient of determination (adjusted R^2) is 0.45. This implies that 45% of the variation in employee performance can be explained by all the independent variables: communication patterns, communication structure, communication medium, and communication climate. The remaining 55% of the variation in employee performance is explained by other variables that are not included in this model.

Table 4. 70 Regression model summary for all variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.677 ^a	.458	.450	.40303

a. Predictors: (Constant), Comm. Pattern, Comm. Structure, Comm. Medium, Comm. Climate

b. Dependent Variable: Employee Performance

4.6.5.2 Regression Model for All Variables

A multi-regression analysis was also used to determine whether all the independent variables would predict the dependent variable. Therefore, the findings in Table 4.71 reveals that all the independent variables, except communication patterns ($p=0.291>0.05$), significantly predict employees performance since $P<0.05$. Therefore, the model can be defined as: $Y = -0.2 - 0.059X_1 + 0.261X_2 + 0.64X_3 + 0.531X_4$. This model indicates that maintaining the communication patterns (X_1) constant and increasing either the effectiveness of the communication structure (X_2), using effective media (X_3), improving the communication climate (X_4) or all (X_2 , X_3 and X_4) at the same time can lead to increased employee performance. According to this model, the three significant variables explain the variations on employee performance that can also be explained by the communication patterns. Therefore, the model indicates that all the independent variables, except communication patterns, predict employees performance in the selected large manufacturing businesses in Eritrea.

The p-values in Table 4.71 indicate the significance of the independent variables but not the relative importance of the independent variables to predict the dependent variable.

For this purpose, the values of the t-statistics can be used to determine the relative importance of the independent variables (Field, 2013). In this case, communication climate had the highest significant impact to employee performance since it has the highest t-value, which is 8.779 followed by communication structure (4.361) and communication medium (2.774) but communication pattern had no significance to employee performance since the $p=0.291 > 0.05$ in the multiple regression model.

Table 4. 71 Regression analysis coefficients for all variables

Model	Unstandardized Coefficients		Standardized Coefficients			
	B	Std. Error	Beta	t	Sig.	
	(Constant)	-.200	.109		-1.840	.067
1	Communication Patterns	-.059	.056	-.053	-1.059	.291
	Communication Structure	.261	.060	.246	4.361	.000
	Communication Medium	.640	.231	.144	2.774	.006
	Communication Climate	.531	.060	.462	8.779	.000

a. Dependent Variable: Employee Performance

4.6.5.3 ANOVA Analysis for All Variables

An ANOVA analysis was conducted to test the significance of the multi linear regression model at better predicting the dependent variable than the mean (Sawyer, 2009; Field, 2013). Therefore, the findings in Table 4.72 indicate that the model, as a whole, is significantly fit to adequately predict employee performance since $F_{4,262;0.05}=2.41 < 55.376$ and $p=0.000 < 0.05$. Therefore, organizational communication has influence on employee performance in the selected large manufacturing businesses.

Table 4. 72 ANOVA analysis for all variables

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	35.980	4	8.995	55.376	.000 ^b
1 Residual	42.557	262	.162		
Total	78.537	266			

a. Dependent Variable: Employee Performance

b. Predictors: (Constant), Comm. Pattern, Comm. Structure, Comm. Medium, Comm. Climate

The findings of the overall analysis for all the variables show that organizational communication that constitute communication patterns, communication structure, communication medium and communication climate has a significant relationship with employee performance. Further, both the regression and ANOVA analysis show that organizational communication can explain the variations in employee performance. Thus, organizational communication has an influence on employee performance. Therefore, organizational communication is one of the factors that determine the performance of employees in the selected large manufacturing businesses in Eritrea.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The general objective of this study was to examine the influence of organizational communication on employee performance in the selected large manufacturing businesses in Eritrea. Using this general objective, this study was further guided by four specific objectives. These are: to establish the influence of communication patterns on employee performance in selected large manufacturing businesses in Eritrea; to determine the influence of communication structure on employee performance in selected large manufacturing businesses in Eritrea; to examine the influence of communication medium on employee performance in selected large manufacturing businesses in Eritrea; and to investigate the influence of communication climate on employee performance in selected large manufacturing businesses in Eritrea. Therefore, this chapter presents the summary of the key findings related to the objectives, conclusions and recommendations.

5.2 Summary of Key Findings Related to the Specific Objectives

The research findings from the specific objectives are summarized below considering both the quantitative and qualitative data analysis findings of the study.

5.2.1 Influence of communication patterns on employee performance

The findings of this study showed that, to get work done, employees of the selected large manufacturing businesses communicate formally and informally. The formal communication was used to get job orders or directions and for serious issues that require documentation as well as to make communication clear and formal. Informal communication was applied more at the execution levels where employees are forced to communicate informally as well as in order to avoid further misunderstanding and

accelerating work processes. Thus, formal and informal communications were important in information exchange that would enable employees to execute the given tasks since the work processes in the manufacturing businesses are based in chains that demand effective communication.

In terms of the level effectiveness, both the quantitative and qualitative findings showed that formal communication is effective whereas informal communication is ineffective in the selected large manufacturing businesses in Eritrea. Therefore, the findings indicate that employees of the selected manufacturing businesses in Eritrea prefer formal communication than informal communication. This is because, according to the qualitative findings, formal communication was more clear and official and it minimizes the existence of misunderstanding and conflicts. Informal communication, however, lacks openness that made difficult to get the right information in the selected manufacturing businesses. Most employees were communicating with caution and thus withheld important information during informal communication. According to the findings, effective communication leads to effective performance and ineffective communication is detrimental for employees and leads them to poor performance. Therefore, both formal and informal communications have influence on employee performance in producing the required quantity and quality of products.

The inferential findings on communication patterns (formal and informal) also indicate that communication pattern has influence on employee performance. The correlation findings indicate that there is a statistically significant positive relationship between communication patterns and employee performance but the relationship is not strong. The findings of the regression analysis show that only 2.8% of the employee performance can be explained by the communication patterns. In addition, the findings of the ANOVA analysis indicate that the regression model for the communication patterns is significantly fit to predict the dependent variable. Therefore, communication patterns have influences on employee performance in the selected large manufacturing businesses in Eritrea.

5.2.2 Influence of communication structure on employee performance

The findings of this study confirmed that the selected large manufacturing businesses in Eritrea adopt their own organizational structure that defines their respective communication structure. Their communication structure is simply the management structure of their respective manufacturing businesses. Employees of these manufacturing businesses therefore communicate through their communication structures.

In relation to vertical communication (downward and upward communication), the descriptive findings show that vertical communication (two-way communication) was encouraged. However, according to the qualitative findings, even though they communicated vertically, upward communication was not encouraged because of lack of responses from upper levels. As a result, employees did not want to communicate innovative ideas and suggestions to upper levels but routine reports. However, both the quantitative and qualitative findings show that vertical communication has an influence on employee performance.

The other aspect of communication structure is horizontal communication. The descriptive findings showed that horizontal communication flow exists in order for work to be done properly. In addition, the qualitative findings confirmed that horizontal communication was effective because the work processes in the manufacturing businesses are in chains that demand horizontal communication between units or departments. If employees do not communicate horizontally, then there would be immediate problems to the work processes. Both the quantitative and qualitative findings confirmed that horizontal communication was vital for employee performance in the selected manufacturing businesses and thus influence employee performance.

Diagonal communication is another communication structure in an organization that is not widely used. The descriptive and qualitative findings indicate that diagonal

communication is not widely used in the selected large manufacturing businesses in Eritrea. Therefore, diagonal communication had no role on the performance of employees in the selected large manufacturing businesses in Eritrea.

The inferential findings of communication structure on employee performance showed that there is a statistically significant positive relationship between communication structure and employee performance but the relationship is not strong. According to the findings of the regression analysis, only 24% of employee performance can be explained by the communication structure. In addition, the ANOVA analysis confirmed that the regression model for communication structure is significantly fit to predict employee performance. Therefore, communication structure has an influence on employee performance in the selected large manufacturing businesses in Eritrea.

5.2.3 Influence of communication medium on employee performance

Organizations today possess a wide array of tools for communication for employees ranging from conventional channels (oral and written) to web-based platforms (electronic media). However, both the quantitative and qualitative findings of this study showed that only the conventional media (oral and written) was used by employees of the selected manufacturing businesses in Eritrea. The findings further revealed that oral medium are widely used than written medium. Electronic media that includes email, intranets and social media was not used in the selected large manufacturing businesses because the technology was not available.

The descriptive findings of this study revealed further that oral and written media were at the level of effectiveness and employees select a communication media in relation to its capacity to deliver information, which is consistent with MRT theory. However, according to the qualitative findings, employees of the selected manufacturing businesses consider a number of factors in selecting a communication medium. Such factors include: the nature of the work or tasks that would be executed, seriousness of

the issue, the weight of the information, the ability of the medium to transfer the right information clearly, the need for immediate feedback, formalization of the issues, and individual personalities.

In reference to communication medium and employee performance, the findings of this study confirmed that the use of appropriate communication medium improves employee performance. This is because a communication medium can enhance or distort the intended message and thus affect the effectiveness of communication. Thus, an appropriate medium has a role of transferring the right information to the right person that determines the executions of tasks which in return determines employee performance. In addition, task performance will be improved when a task needs are matched to a medium's ability to convey information. Therefore, effective media is required for effective communication that in return increases employee performance.

The correlation findings indicated that there is a statistically significant positive relationship between communication medium and employee performance but the relationship is not strong. The regression analysis showed that only 17.4% of the employee performance can be explained by the communication medium. However, according to the ANOVA analysis, the regression model is significantly fit to adequately predict employee performance. Therefore, communication medium has an influence on employee performance in the selected large manufacturing businesses in Eritrea.

5.2.4 Influence of communication climate on employee performance

According to Structuration Theory (ST), communication climate is produced and reproduced through the interaction of members of the organization and thus it exists in an organization. Thus, the findings of this study showed that there exists communication climate in the selected large manufacturing businesses in Eritrea and thus employees communicate by considering the climate.

Communication climate is characterized by open and closed communication. According to the quantitative findings, open communication was encouraged in the selected large manufacturing businesses and thus open communication supported employee performance. In addition, the qualitative findings indicated further that, even though employees come from different backgrounds with different behaviors and interests, open communication was very important to the manufacturing businesses since it determines the exchange of pertinent information to the executions of tasks and thus ultimately supports employee performance. However, the interview findings indicated that there is no absolute open communication and thus, there is closed communication.

The findings of this study confirmed the existence of closed communication in the selected manufacturing businesses. Closed communication were appeared in terms of not listening and understanding, not sharing ideas or knowledge (information or knowledge is power), not willing to communicate or communicating with caution (less open and honest). Consequently, the findings showed that employees performed poorly as a result of closed communication because information was blocked and there was no free flow of information. Therefore, closed communication has an influence on employee performance.

The inferential analysis of this study confirmed further that there is a statistically significant positive relationship between communication climate and employee performance and the relationship is relatively strong. According to the regression analysis, 38% of the employee performance can be explained by the communication climate. Also, the ANOVA analysis confirmed that the regression model is significantly fit to adequately predict employee performance. Thus, communication climate has an influence on employee performance in the selected large manufacturing businesses in Eritrea.

5.2.5 Overall Analysis- Organizational Communication and Employee Performance

The general objective of this study was to examine the influence of organizational communication on employee performance in the selected large manufacturing businesses in Eritrea. The overall analysis of the study was analyzed using the four independent variables of this study altogether. For this purpose, inferential analysis was conducted.

According to the findings of the correlation analysis, there is a statistically significant relationship between all the independent variables (organisational communication) and the employee performance and the relationship is relatively strong. In addition, the multi-regression analysis indicates that 45% of the variation in employee performance can be explained by all the independent variables (organizational communication). Also, the ANOVA analysis showed that the overall regression model significantly fit to adequately predict employee performance. This means that organizational communication has an influence on employee performance in the selected large manufacturing business in Eritrea.

5.3 Conclusions

The first objective of this study was about communication patterns (formal and informal communication) and employee performance. The findings concluded that communication patterns have an influence on employee performance in the selected manufacturing businesses in Eritrea. There was statistically significant relationship between communication patterns and employee performance although the relationship was not strong. Employees of the selected manufacturing businesses communicated through communication patterns (formally and informally). These patterns were important for information exchange which would enable employees to execute the given tasks and thus lead to better employee performance.

In relation to formal communication, it enabled employees to communicate important, accurate, clear and timely information within their manufacturing businesses. Formal communication was effective and enabled employees to perform as required in terms of producing the required quantity and quality of products. At the same time, ineffective formal communication led some employees to poor performance. It was therefore statistically concluded that there was a positive relationship between formal communication and employee performance in the selected large manufacturing businesses in Eritrea and thus formal communication has an influence on employee performance. However, informal communication was not effective in the selected manufacturing businesses. Employees were not able to exchange important, accurate, clear and timely information. Informal communication lacked openness and it was difficult to get the right information since employees communicated with caution and withheld important information. Employees preferred to communicate formally. It was noted, therefore, that informal communication did not support better employee performance in producing the required quantity and quality of products. Although, there was a positive relationship between informal communication and employee performances, the relationship was minimal and very weak. Thus, the correlation was not statistically significant. Therefore, informal communication did not have positive influence on employee performance in the selected large manufacturing businesses in Eritrea.

The second objective of this study was about communication structure and employee performance. This study concluded that communication structure has an influence on employee performance in the selected large manufacturing businesses in Eritrea. There is statistically significant relationship between communication structure and employees performance. Employees of the selected manufacturing businesses use the management structure as a communication structure to communicate among themselves. Employees communicated vertically (downward and upward) although upward communication was not encouraged because of lack of responses from upper levels. In addition, employees

communicated horizontally although it was not as effective as it should be. However, horizontal communication was important and enabled employees to perform as required in terms of producing the required quantity and quality of products since the work processes are chains that demand horizontal communication in the manufacturing businesses. It was therefore noted that vertical and horizontal communications have an influence on employee performance. Diagonal communication, however, was not widely used. It was used very rarely and did not have any influence on employee performance in the selected manufacturing businesses.

The third objective of this study was about communication medium and employee performance. This study concluded that communication medium has an influence on employee performance in the selected manufacturing businesses in Eritrea. There was a statistically significant relationship between communication medium and employee performance. Despite there are wide array of tools for communication ranging from conventional channels (oral and written) to web-based platforms (electronic media), employees of the selected large manufacturing businesses in Eritrea used only oral and written communication medium. They didn't use web-based platforms (electronic media) because the technology was not available. Employees of the selected manufacturing businesses in Eritrea select a communication media in relation to the nature of the work or the tasks that would be executed, the seriousness of the issue, the weight of the information, the ability of the medium to transfer the right information clearly, the need of immediate feedback, formalization of the issues, and individual personalities. However, oral medium was widely used and was more effective than written medium in the selected manufacturing businesses. By using appropriate communication medium employees obtained better performances in terms of producing the required quantity and quality of products in the selected manufacturing businesses. It was therefore noted that communication medium has an influence on employee performance in the selected large manufacturing businesses in Eritrea.

The fourth objective of this study was about communication climate and employee performance. This finding concluded that communication climate has an influence on employee performance in the selected manufacturing businesses in Eritrea. There was statistically significant relationship between communication climate and employees performance. There existed a communication climate in the selected large manufacturing businesses and employees consider it when communicating. The status of the communication climate in the selected large manufacturing businesses in Eritrea was relatively good. There was open communication climate (characterized by honesty, openness, trust, freedom, and willingness to exchange information) and also closed communication climate (characterized by communication barriers). Open communication enabled employees to perform as required in terms of producing the required quantity and quality of products. On the other hand, some employees of the selected manufacturing businesses performed poorly as a result of communication barriers since information was blocked and there was no free flow of information. It also affected employee performance. Therefore, communication climate has an influence on employee performance in the selected large manufacturing businesses in Eritrea.

Lastly, the general objective of the study was to examine the influence of organizational communication on employee performance in the selected large manufacturing businesses in Eritrea. In this study, organizational communication was characterized by four variables: communication patterns, communication structure, communication medium, and communication climate. It was therefore noted that, based on the findings of the overall analysis of this study, there is a direct and significant relationship between organizational communication and employee performance. In addition, the overall model is adequately fit to predict the variations on employee performance. Therefore, this study concluded that organizational communication has a direct influence on employee performance in the selected large manufacturing businesses in Eritrea.

5.4 Recommendations

Based on the findings of this research study, the following recommendations are offered to the selected large manufacturing businesses in Eritrea and to the scientific community.

5.4.1 Recommendations to the selected large manufacturing businesses in Eritrea

- This study confirmed that formal communication was effective and employees prefer formal communication in the selected large manufacturing businesses in Eritrea. Therefore, the selected manufacturing businesses should continue using formal communication and keep as effective as possible.
- Informal communication was not effective in the selected large manufacturing businesses in Eritrea. Ineffective communication is detrimental for employees in any organization because it leads employees to poor performance. Therefore, the selected manufacturing sectors should build trust among employees in order to exchange pertinent information informally and in order to make informal communication effective so that it plays a role in improving employee's performance.
- Although employees of the manufacturing businesses in Eritrea communicate vertically (upward and downward communication), the findings showed that upward communication was not effective. Therefore, the selected large manufacturing businesses should make upward communication effective because it can enable the bottom level employees to generate new ideas that can help to improve their performance in terms of producing the required quantity and quality of products.
- The communication structure of the selected large manufacturing businesses in Eritrea is their respective management structure. Consequently, diagonal communication was not widely used and had no role in employee performance in

the selected manufacturing businesses. Therefore, the selected manufacturing businesses should develop a separate communication structure that ensures effective communication. For instance, they can have a networked type of communication structure that connects employees with different directions or levels so that they can get the required information from the concerned individuals or offices in order to execute the given tasks and thereby improve productivity.

- This study confirmed that communication medium has influence on employee performance and MRT proposes that task performance will be improved when a task needs are matched to a medium's ability to convey information. The findings also showed that employees of the selected large manufacturing businesses in Eritrea did not use electronic media. Therefore, the manufacturing businesses should provide the various options of communication media to employees including the technological media so that employees can use the appropriate media to exchange information effectively.
- This study confirmed further that communication climate is the highest contributor to employee performance compared to the other independent variables of this study. In addition, the study confirmed that open communication characterized by honesty, openness, trust, freedom, and willingness to exchange information supports employee performance whereas closed communication leads to poor performance since it blocks the exchange of information. Therefore, the selected manufacturing businesses should create a more suitable communication climate (open communication) and minimize closed communication.
- The overall findings of this study confirmed that organizational communication influences employee performance in the selected large manufacturing businesses in Eritrea. Therefore, the selected large manufacturing businesses should ensure

that all aspects of organizational communication are effective and suitable for communication.

5.4.2 Recommendations to the Scientific Community

The field of organizational communication is gaining interests from the scientific community since it is very essential in all dimensions of organization's performance (Abugre, 2011). This study meant to fill the gap in the scientific research in a sense that organizational communication has a direct influence on employee performance in the manufacturing businesses. Therefore, considering the limitations of this study, the scientific communities can use the findings of this study as a base or reference for further research to fill existing gaps in the field of communication in general and organizational communication in particular.

5.5 Suggestions for Further Research Study

Based on the limitations and findings of this study, the following suggestions are made for further research:

1. One of the limitations of this study was that the study did not consider the external communication. It is therefore important to conduct a research on the effects of external communication on improving productivity in the manufacturing sectors. This would help the manufacturing sectors to not only to have effective internal communication but also to have effective external communication for improving productivity of the sector. This suggested research study would help them to improve productivity that would help the sector to get a market share and thus increase profitability.
2. Another limitation of this study was that it did not consider the comparison of each manufacturing businesses in Eritrea in terms of organizational communication and employee performance. It is therefore important to conduct a research on the comparative assessment of Eritrean manufacturing businesses in terms of the

influence of organizational communication on improving productivity of the sectors. This suggested research study would help the manufacturing sectors in terms of understanding the states of their organizational communication so that they can invest in organizational communication accordingly.

3. This study confirmed that there is a direct influence of organizational communication on employee performance in selected large manufacturing businesses in Eritrea. However, the study was not an experimental research. Therefore, the findings of this study would be strengthened if this study would be repeated using experimental basis.

REFERENCES

- Abdussamad, Z. (2015). *The Influence of communication climate on the employees' performance at government agencies in Gorontalo City (an Indonesian case study)*. *Asia Pacific Journal of Multidisciplinary Research*. 3(5), 19-27.
- Abugre, J. B. (2011). *Appraising the impact of organizational communication on worker satisfaction in organizational workplace*. *Problems of Management in the 21st Century*. 1, 7-15.
- Ahsanul, I. M. (2013). *The Role of Communication Climate in Organizational Effectiveness*. *International Journal of Scientific & Engineering Research*. 4(7), 155-156.
- Ali, S. A. (2016). *The Influence of Internal Communication Channels on Employees Performance in Non-Profit Organizations in Somalia*. M.Sc. Thesis. United States International University-Africa. Retrived from <http://erepo.usiu.ac.ke/bitstream/handle/11732/3058/SUMEYA%20ABDI%20ALI%20EMOD%202016.pdf?sequence=1&isAllowed=y>
- Atambo, W. N., & Momanyi, D. K. (2016). *Effects of internal communication on employee performance: A Case study of Kenya Power and Lighting Company, South Nyanza Region, Kenya*. *Imperial Journal of Interdisciplinary Research (IJIR)*: 2(5), 328-340.
- Banerjee, A. (2012). *6 main features of human relations theory*. Retrieved from <http://www.preservearticles.com/2012051832410/6-main-features-of-human-relations-theory.html>
- Banihashemi, S. A. (2011). *The Role of communication to improve organizational process*. *European Journal of Humanities and Social Sciences*. 1(1), 14-24.
- Bartuseviciene, I. & Sakalyte, E. (2013). *Organizational assessment: effectiveness vs. efficiency*. *Social Transformations in Contemporary Society*. 1, 45-53.
- Baruch, Y. (1999). *Response Rate in Academic Studies – A Comparative Analysis*. *Human Relations*, 52(4), 421-438.

- Bayo-Moriones, A., Galdon-Sanchez, J. E., & Martinez-de-Morentin, S. (2019) *Performance Appraisal: Dimensions and Determinants. The International Journal of Human Resource Management*. DOI: 10.1080/09585192.2018.1500387
- Bery, B., Otieno, A., Waiganjo, E. W. & Njeru, A. (2014). *Effect of employee communication on organisation performance in Kenya's horticultural sector. International Journal of Business Administration*. 6(2), 138-145.
- Bhatia, K. & Balani, M. (2015). *Effective internal communication: A Crucial factor affecting employee performance. Proceedings of International Conference on Management, Economics and Social Science, Dubai*. November.
- Bobbie, E. R. (2001). *The Practice of social research* (9th ed.). Belmont, CA: Wadsworth Thomson Learning.
- Bolarinwa, J. A. & Olorunfemi, D. Y. (2009). *Organizational communication for organizational climate and quality service in academic libraries. Library Philosophy and Practice*. April, 1-5
- Bolarinwa, O. A. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. *Nigerian Postgraduate Medical Journal*. 22, 195-201.
- Brase, C. H. & Brase, C. P. (2009). *Understandable Statistics: Concepts and methods* (9th ed.). New York: Houghton Mifflin Company.
- Bose, I. (2018). *Employee Empowerment and Employee Performance: An Empirical Study on Selected Banks in UAE. Journal of Applied Management and Investments*, 7(2), 71-82.
- Buchholz, W. (2001.) *Open communication climate*. Retrieved from <https://www.pdx.edu/sites/www.pdx.edu.cae/files/Workplace.pdf>
- Burton L. J. & Mazerolle, S. M. (2011). Survey Instrument Validity Part I: Principles of Survey Instrument Development and Validation in Athletic Training Education Research. *Athletic Training Education Journal*, 6(1), 27-35.

- Canessa, E. & Riolo, R. L. (2004). *The Effect of organizational communication media on organizational culture and performance: An Agent-Based simulation model*. *Kluwer Academic Publishers: Computational & Mathematical Organization Theory*. 9, 147-176.
- Chan Chun Ming, Francis, (2010). *Formal and informal communication: An Organisational investigation* (Doctor's Thesis): University of South Australia, Adelaide, Australia.
- Choo, C. W. (1998). *The Knowing organization: How organizations use information to construct meaning, create knowledge and make decisions*. New York: Oxford university press.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed method approach* (4th ed.). USA: SAGE Publications India Pvt. Ltd.
- Crown (2013). *Effective communications: Raising the profile of your archive service*. *The National Archives*. Retrieved from:
<http://www.nationalarchives.gov.uk/documents/archives/effective-communications.pdf>
- Curran-Everett, D. (2018). Explorations in statistics: the log transformation. *Advances in Physiology Education*. 42, 343–347.
- Daft, R. L & Lengel, R. H. (1986). *Organizational information requirement, media richness and structural design*. *Management Science*. 32(5), 554-571.
- Dennis, A. R. & Kinney, S. T. (1998). *Testing media richness theory in the new media: Cues, feedback, and task equivocality*. *Information System Research*. 9(3), 256-274.
- Dennis, A. R. & Valacich, J.S. (1999). *Rethinking media richness: Towards a theory of media synchronicity*. Proceedings of the 32nd Hawaii International Conference on System Sciences (pp.1-10). Hawaii
- Drucker, P.F. (1993). *The Post capitalist Society*. USA: HarperBusiness, HarperCollins Publications.

- Eadie, W. F. (2009). *21st century communication: A Reference handbook* (Vol 1&2). USA: SAGE Publication Ltd.
- Elger, D. (2007). Theory of Performance. In Beyerlein, S.W., Holmes, C. & Apple, D. K. (Eds.), *Faculty guidebook: A comprehensive tool for improving faculty performance* (4th ed., pp. 19-22). Lisle, IL: Pacific Crest.
- Ergen, E. (2010). *Workplace communication: A Case study on informal communication network within an organization*. Retrieved from <http://www.ergen.gr>
- Etikan, I. & Bala K. (2017). *Sampling and sampling methods. Biometrics & Biostatistics International Journal. Vol. 6* (5), 1-3, DOI: 10.15406/bbij.2017.05.00149
- Femi, A. F. (2014). *The Impact of communication on workers' performance in selected organisations in Lagos State, Nigeria. IOSR Journal of Humanities and Social Science (IOSR-JHSS). 19* (8), 75-82
- Feng, C., Wang, H., Lu, N., Chen, T., He, H., Ying, Lu. Y., & Tu, X. M., 2014 (2014). Log-Transformation and Its Implications for Data Analysis. *Shanghai Archives of Psychiatry*, 26(2), 105-109.
- Field, A. (2006). *Research methods: Reliability analysis*. Retrieved from <http://www.discoveringstatistics.com/docs/reliability.pdf>
- Field, A. P. (2013). *Discovering statistics using SPSS: and sex and drug and rock 'n'* (4th ed.) London: Sage
- Fischer, B., Gray M., Johnson, R., Kostere, K., Levinskas, T., Percy, B., & Piotrowski, N. (2008). *Dissertation guides workbook – Chapters 1-5, 2008-2009*. Capella University: School of Psychology & School of Human Services.
- George, D., & Mallery, P. (2003). *SPSS for Windows Step by Step: A Simple Guide and Reference*. Boston: Allyn and Bacon.
- Gliem, J. A., & Gliem, R. R. (2003). *Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales*. Midwest Research to Practice Conference in Adult, Continuing, and Community Education, (pp.82-88). The Ohio State University, Columbus.

- Greenwald, H. P. (2008). *Organizations: Management without control* (1st ed.). USA: Sage Publication, Inc.
- Guney, S., Diker, O., Guney, S., Ayranci, E., & Solmaz, H. (2012). *Effects of organizational communication on work commitment: A Case study on a public agency in Ankara. Business Management Dynamics*. 2(4), 18-29.
- Hakala, D. (2008). *16 Ways to measure employee performance*. Retrieved from <http://tompkinscountyny.gov/files2/workforceny/16%20Ways%20to%20Measure%20Employee%20Performance.pdf>
- Halgin, D. S. (2012). *An Introduction to social network theory*. Prepared for the International Networking in the Society of Jesus Conference (pp.1-17). Lexington
- Haythornthwaite, C. (1996). *Social network analysis: An Approach and technique for the study of information exchange. LISR*. 18, 323-342.
- Hewitt, P. (2006). *Corporate communications. An International Journal: Emerald Group Publishing Limited*. 11(1), 78-92.
- Higson, C. & Waltho, D. (2010). *Valuing information as an asset*. UK: SAS Institute Inc
- Hikmah, (2015). *The Effect of organizational communication towards employees' performance of the Badan Pendidikan Dan Pelatihan in Makassar City, Indonesia. Journal of Economics and Behavioral Studies*. 7(3), 119-126
- Hybels, S., & Weaver, H.R. (2001). *Communicate effectively*. 6th Ed. Boston: McGraw-Hill
- Improvement Skills Consulting Ltd. (2009). *Data collection questionnaires – A Quick guide*. Retrieved from <https://ianjseath.files.wordpress.com/2009/07/questionnaires-quick-guide.pdf>
- Israel, G. D. (1992). *Determining sample size*. Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Fact Sheet PEOD-6. Retrieved from <http://zulsidi.tripod.com/pdf/DeterminingSampleSizes.pdf>

- Jabareen, Y. (2009). *Building a conceptual framework: Philosophy, definitions, and procedure. International Journal of Qualitative Methods.* 8(4), 49-62.
- Jain, H. C. (2016). *Organizational communication: A Case study of a large urban Hospital. Industrial Relations.* 31(4), 588-608. DOI: 10.7202/028744ar
- Kamasak, R. & Bulutlar, F. (2008). *The Impact of communication climate and job satisfaction in employees' external prestige perceptions. Yonetim ve Ekonomi.* 15(2), 133-144.
- Keith, T. Z. (2015). *Multiple regressions and beyond: an introduction to multiple regression and structural equation modeling* (2nd ed.). New York, NY: Taylor & Francis.
- Knaub, J. (2007). Heteroscedasticity and homoscedasticity. In Salkind, N. (Ed.), *Encyclopedia of measurement and statistics* (pp. 431-432). Thousand Oaks, CA: SAGE Publications.
- Kovacic, H. & Luzar, B. (2011). *Communication structure and the performance of organizational teams. TEORIJA IN PRAKSA.* 48, 1505-1517.
- Kombo, D. K. & Tromp, D. L. A. (2011). *Proposal and thesis writing: An Introduction.* Nairobi: Pauline's Publication of Africa.
- Kothari, C. R. (2004). *Research methodology* (2nd ed.). New Delhi: New Age International Ltd. Publishers.
- Krausert, A. (2009). *Performance Management for Different Employee Groups: A Contribution to Employment Systems Theory.* London, New York: Springer-Verlag Berlin Heidelberg
- Kumar, P. B. & Giri, V. N. (2009). *Examining the relationship of organizational communication and job satisfaction in Indian organizations. Journal of Creative Communications.* 4(3), 177-184.
- Larsen, K. R. & Eargle, D. (Eds.), (2015). *Theories used in IS research wiki.* Retrieved from <http://IS.TheorizeIt.org>

- Lee, H. (2014). *The Influence of followership on organizational identification and the mitigating effect of communication climate*. *EPIK Journals Online*. 5 (1), 1-30
- Lengl, R. H. & Daft, R. L. (1988). *The Selection of communication media as an executive skill*. *The Academy of Management Executive*. 11(3), 225-232.
- Littlejohn, S. W. & Foss, K. A. (2008). *Theories of human communication* (9th ed.). USA: Thomson Wadsworth.
- Madden, A. D. (2000). *A Definition of Information*. *Aslib Proceedings*. 52(9), 343-349.
- Malterud, K., Siersma, V. D. & Guassora, A. D. (2015). *Sample size in qualitative interview studies: guided by information power*. *Qualitative Health Research*. 26(13), 1753–1760.
- Mason, M. (2010). *Sample size and saturation in Ph.D studies using qualitative interviews*. *Forum: Qualitative Social Research*. 11(3), Art.8
- McPhee, R. D., Poole, M. S. & Iverson, J. (2014). Structuration theory. In Puntnam, L. L. & Mumby, D. K. (Eds). *Organizational communication: Advances in theory, research and methods* (3rd ed., pp.75-99). SAGE Publication Inc., USA.
- Mela, C. F. & Kopalley, P. K. (2002). The impact of collinearity on regression analysis: The asymmetric effect of negative and positive correlations. *Applied Economics*, 34, 667-677.
- Men, L. R. & Hung-Baesecke, C. F. (2015). *Engaging employees in china: The Impact of communication channels, organizational transparency, and authenticity*. *Corporate Communications: An International Journal*. 20 (4), 448-467.
- Midi, H., Sarkar, S. K., & Rana, S. (2010). Collinearity diagnostics of binary logistic regression model. *Journal of Interdisciplinary Mathematics*, 13(3), 253–267.
- Mordkoff, J. T. (2016). *The Assumption(s) of normality*. University of Iowa. Retrieved from:<http://www2.psychology.uiowa.edu/faculty/mordkoff/GradStats/part%20I%20normal.pdf>

- Mutuku, C. K. (2014). *Effects of organizational communication on employee motivation: a case study of Nokia Siemens Networks, Kenya. International Academic Journal of Information Sciences and Project Management. 1(3), 28-62.*
- Nachmias, C. F., & Nachmias, D. (2006). *Research Methods in the Social Sciences* (6th ed.). New York: Worth Publishers.
- Nebo, C. S., Nwankwo, P. N., & Okonkwo, R. I. (2015). *The Role of effective communication on organizational performance: A Study of Nnamdi Azikiwe University, Awka. Review of Public Administration and Management. 4(8), 131-148.*
- Ngulube, P., Mathipa, E. R. & Gumbo, M. T. (2015). Theoretical and conceptual framework in the social sciences, in Mathipa, ER & Gumbo, MT. (eds). *Addressing research challenges: Making headway in developing researchers* (pp.43-66). Mosala-MASEDI Publishers & Booksellers cc: Noordwyk.
- Nordin, S. M., Sivapalan, S., Bhattacharyya, E., Hashim, H., Wan Ahmad, W. F., & Abdullah, A. (2014). *Organizational communication climate and conflict management: communications management in an oil and gas company. 2nd World Conference on Business, Economics and Management -WCBEM 2013. Procedia - Social and Behavioral Sciences. 109, 1046-1058.*
- Nwata, U. P., Umoh, G. I., & Amah, E. (2016). *Internal organizational communication and employees' performance in selected banks in Port Harcourt. International Journal of Novel Research in Humanity and Social Sciences. 3(3). 86-95.*
- Nyende, M. & Mugisha, F. (2017). *Eritrea-African economic outlook*. Retrieved from www.africaneconomicoutlook.org/sites/default/files/2017-05/Eritrea_EN_2017.pdf
- Osborne, J. W. and Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. *Research & Evaluation, 8(2), 1-5.*
- Owusu-Boateng, W. & Jeduah, B. A. (2014). *Effects of organizational communication on employee performance: A Case of the agricultural development bank, Tamale. Public Policy and Administration Research. 4(6), 67-80.*

- Park, H. M., (2008). *Univariate analysis and normality test using SAS, Stata, and SPSS*. The Trustees of Indiana University. Retrieved from <http://cef-cfr.ca/uploads/Reference/sasNORMALITY.pdf>
- Perneger, T. V., Courvoisier, D. S., Hudelson, P. M. & Gayet-Ageron, A. (2014). *Sample size for pre-tests of questionnaires*. Springer International Publishing Switzerland. DOI: 10.1007/s11136-014-0752-2.
- Pett. M. A. (2015). *Nonparametric Statistics for Health Care Research: Statistics for Small Samples and Unusual Distributions* (2nd Ed.). Sage publications Inc.
- Pradhan, R. K., & Jena, L. K. (2017). *Employee Performance at Workplace: Conceptual Model and Empirical Validation*. *Business Perspectives and Research*, 5(1), 1-17
- Puntnam, L. L. & Mumby, D. K. (2014). *Organizational communication: Advances in theory, research and methods* (3rd Ed.). United States of America: SAGE Publication Inc.
- Rahman, A. (2007). *English-Tigrinya Dictionary* (2nd Ed.). Simon Wallenburg Press: ISBN-13: 978-1843560067
- Rajhans, K. (2012). *Effective organizational communication: A Key to employee motivation and performance*. *Inter-science Management Review (IMR)*. 2(2), 81-85.
- Razali, N. M., & Wah, Y. B. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling tests. *Journal of Statistical Modeling and Analytics*, 2(1), 21-33.
- Researchcage (2013). *The Impact of effective communication on organizational productivities: A Case study of Fototech Industries Ltd, Ikeja Lagos State*. Retrieved From <Http://Researchcage.Com/2013/11/09/Communication/>
- Richmond, McCroskey & McCroskey (2005). *Organizational Communication for Survival: Making Work, Work*. Retrieved from http://my.ilstu.edu/~lilipper/com329/mccroskey_chapter.pdf

- Rogers, P. S. (2013). *Management communication: History, distinctiveness, and core content*. University of Michigan: Ross School of Business, Working Paper, No. 1186. Retrieved from <http://ssn.com/abstract=2257965>
- Sanders, N. R. & Reid, D. R. (2012). *Operational managemnt: An integrated approach* (5th ed.). Wiley: ISBN- 9781118122679
- Sainani, K. L. (2012). Dealing with non-normal data. *The American Academy of Physical Medicine and Rehabilitation*, 4, 1001-1005.
- Schechner, R. (2003). *Performance Theory*. London, New York: Routledge
- Sekaran, U. (2003). *Research methods for business: A Skill-Building approach* (4th ed.). New York: John Wiley & Sons Inc.
- Shonubi, A. O., & Akintaro, A. A. (2016). *The Impact of effective communication on organizational performance. The International Journal of Social Sciences and Humanities Invention*. 3(3), 1904-1914.
- Sidnell, M. J. (1991). *Performance Theory by Richard Schechner* (review). *Modern Drama*, 34(4), 569-570.
- Signe, L. (2018). *The Potential of Manufacturing and Industrialization in Africa: Ternds, Opportunities and Strategies. Africa Growth Initiative, at Bookings*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2018/09/Manufacturing-and-Industrialization-in-Africa-Signe-20180921.pdf>
- Sonnentag, S. & Frese, M. (2002). Performance Concepts and Performance Theory. In Sonnentag, S. (Ed), *Psychological Management of Individual Performance* (pp. 3-25). UK: John Wiley & Sons, Ltd.
- Spaho, K. (2011). *Organizational communication as an important factor of company success: case study of Bosnia and Herzegovina. Business Intelligence Journal*.4(2), 390-393.
- Spaho, K. (2012). *Organizational communication process. Ekonomski Vjesnik*, 1(2), 309-317.

- Statistics Solutions (2013). *Homoscedasticity (WWW Document)*. Retrieved from: <http://www.statisticssolutions.com/homoscedasticity/>
- Sawyer, S. F. (2009). Analysis of Variance: The Fundamental Concepts. *Journal of Manual & Manipulative Therapy*, 17(2), 27E-38E.
- Sweeney, T. B. (2016) *A Convergent parallel mixed methods investigation into the role of mindfulness in moderate to severe, persistent depression*. Ph.D Thesis, University of Nottingham. Retrieved from http://eprints.nottingham.ac.uk/end_user_agreement.pdf
- Taherdoost H., Sahibuddin S., Jalaliyoon, N. (2014). Exploratory Factor Analysis; Concepts and Theory. In Jerzy Balicki (Ed.), *Advances in Applied and Pure Mathematics*. Proceedings of the 2nd International Conference on Mathematical, Computational and Statistical Sciences (MCSS '14) (pp. 375-382). Poland, Gdansk: WSEAS
- Tirintetaake, I. (2017). *Scientific management theory vs human relations theory*. Retrieved from https://www.researchgate.net/publication/316464967_Scientific_Management_Theory_vs_Human_Relation_Theory
- Udegbe, M. I. (2012). *Impact of business communication on organizational performance in Nigerian companies*. *Australian Journal of Business and Management Research*. 2(1), 16-26.
- Vatcheva, K.P., Lee, M. J., McCormick, J. B., & Rahbar, M. H. (2016). Multicollinearity in regression analyses conducted in epidemiologic studies. *Epidemiol*, 6, 1-9.
- Verma, P. (2013). *Relationship between organisational communication flow and communication climate*. *International Journal of Pharmaceutical Sciences and Business Management*. 1(1), 63-71.
- Weldeghiorgis, K. Y. (2004). *Performance measurement practices in selected Eritrean manufacturing enterprises* (Masters Dissertation). University of the Free State, Bloemfontein, Republic of South Africa.

- Whittington, R. (2015). *Giddens, structuration theory and strategy as practice*. ResearchGate. Retrieved from: https://www.researchgate.net/publication/285180282_Giddens_structuration_theory_and_strategy_as_practice
- Widhiastuti, H. (2012). *The Effectiveness of communications in hierarchical organizational structure*. *International Journal of Social Science and Humanity*, 2(3), 185-190.
- Williams, B., Onsmann, A. & Brown, T. (2010). Exploratory factor analysis: A five-step guide for novices. *Journal of Emergency Primary Health Care (JEPHC)*, 8(3), 1-13.
- Wimmer, D. & Dominick, R., (2011). *Mass media research: An Introduction* (9th ed.). USA: Wadsworth Cengage Learning.
- World Bank (2016). *Eritrea: Economic Overview*. Retrieved from <http://www.worldbank.org/en/country/eritrea/overview>
- Wrench, J. S. (2012). *An Introduction to organizational communication*. Retrieved from <https://2012books.lardbucket.org/pdfs/an-introduction-to-organizational-communication.pdf>
- Wrench, J. S., Punyanunt-Carter, N. & Mark, W. S. (2012). *Organizational communication: Theory, research, and practice* (1st ed.). Flat World knowledge. Retrieved from https://catalog.flatworldknowledge.com/bookhub/reader/7635?e=wrenchorgcomm_1.0-ch04_s03
- Yates, J. & Orlikowski, W. J. (1992). *Genres of organizational communication: A Structural approach to studying communication and media*. *The Academy of Management Review*, 17(2), 299-326.
- Yeasmin, S. & Rahman, K. F. (2012). *'Triangulation' research method as the tool of social science research*. *Bup Journal*: 1(1), 154-163.

APPENDICES

Appendix I: Questionnaire

Questionnaire for Employees of the Selected Large Manufacturing Businesses in Eritrea

My name is Zemichael Fesahatsion pursuing a Ph.D degree in Mass Communication at Jomo Kenyatta University of Agriculture and Technology (JKUAT), Department of Media Technology and Applied Communication, Kenya. I am conducting a research on the influence of organizational communication on employee performance in selected large manufacturing businesses in Eritrea. The purpose of the questionnaire is to gather data related to my study from employees of the selected large manufacturing businesses in Eritrea. I would like to assure you that information collected through this questionnaire will be safely kept and will remain confidential. Please, fill out the questionnaire as honestly as possible. I am so grateful for your participation and cooperation. Thank you.

መስተቲ ቐጥዒ

መስተቲ ቐጥዒ ንሰራሕተኛታት ናይ ዝተመረጸ ፋብሪካታት ኣብ ኤርትራ

ኣነ ዘሚካኤል ፍስሓጽዮን ዝተባሃልኩ ኣብ ኬንያ ናይ ዝለዓለ ደርጃ ትምህርቲ (ዶክቶሬት ዲግሪ) ኣብ ጆሞ ኬንያታ ዩኒቨርሲቲ ሕርሻን ቴክኖሎጂን (Jomo Kenyatta University of Agriculture and Technology)፣ ክፍሊ ናይ መራከቢ ብዙሓን ቴክኖሎጂን ግብራዊ ዝርርብን (Department of Media Technology and Applied Communication) ዝከታተል ዘለኹ ተማሃራይ እዮ። ኣነ ብዛዕባ ኣብ ትካል ዝግበር ዝርርብ ኣብ ልዕሊ ውጺኢት ሰራሕተኛታት ፋብሪካታት ኤርትራ ዝህልዎ ጽልዎ መጽናዕቲ ዘካይድ ዘለኹ እዮ። ዕላማ ናይዚ መስተቲ ከኣ ካብ ሰራሕተኛታት ፋብሪካታት ኣብ ኤርትራ ነዚ ዘካይዶ ዘለኹ መጽናዕቲ ዝምልከት ሓበሬታ ንምእካብ እዮ። ስለዚ ነዚ መስተቲ ብዝተካእለኩም መጠን ብቐንዕና ክትመልእዎ ብኣኹብርት ይሓተኩም። በዚ መስተቲ ኣቢሉ ዝእኩብ ሓበሬታ ብስትረት ክተሓዝ ምኻኑን ንዝኾነ ኣካል ከምዘይ ይወሃብን ከረጋግጻልኩም ይፈቱ። ነዚ መስተቲ ንምምላእ ብምስታፍኩምን ብምትሕብባርኩምን ከኣ ከመስግነኩም ይደሊ. የቐንየለይ!

A. Demographic Questions

Instruction: Give your response by ticking (✓) in the box

መምርሒ፣ አብቲ ተዳልዩ ዘሎ ሳንዱቕ ምልክት (✓) ብምግባር መልስኩም ሃቡ።

1. Gender/ጾታ Male/ተባዕታይ Female/አንስተይቲ

2. Age/ዕድመ 18-30 31-40 41-50 51-60 61-70

3. Level of education/ደረጃ ትምህርቲ 1-6 7-8 9-12
 Certificate/ሰርቲፊኬት Diploma/ዲፕሎማ Degree/ዲግሪ
 Master//ማስትሬት Doctorate/ዶክቶሬት

4. Work experience (in year)/ናይ ስራሕ ልምዲ (ብዓመት) 1-10 11-20
 21-30 31-40 41 and above/41ን ንላዕልን

5. Job Rank /ደረጃ ስራሕ : Lower level/ተራ ስራሕተኛ Unit head/ናይ ዩኒት ሓላፊ
 Department head/ናይ ክፍሊ ሓላፊ Operational manager/አካዳሚ ስራሕ
 General manager/ጠቕላላ አካዳሚ ስራሕ

B. Communication patterns

6. Using the following Likert scale, tick (✓) what you think is the most appropriate answer **SA**=Strongly Agree, **A**=Agree, **N**=Neutral, **D**=Disagree, **SD**=Strongly Disagree

በዘም ዝሰዕቡ መምዘኒ ተጠቂምካ እቲ ትኽክል እዩ ትብሎ መልሲ ምልክት (✓) ብምግባር መልሲ ሃብ፤

SA=አዝዩ ደሰማማዕ, **A**=ደሰማማዕ, **N**=ማእኸላይ, **D**=ኣይደሰማማዕን, **SD**=አዝዩ ኣይደሰማማዕን,

	On omunication patterns	SA	A	N	D	SD
1	I communicate formally and informally within the organization. ኣብ ትካልና ብወግዓውን ብዘይወግዓውን ኣገባብ ዝርርብ የካይድ።					
2	Communicating formally and informally with colleagues in workplace is important to execute tasks. ኣብ ስራሕ ምስ መሳርሕትኻ ብወግዓውን ብዘይወግዓውን ኣገባብ ዝርርብ ምክያድ ንዝተዋበካ ስራሕ ንኸትዓማም ኣገዳሲ እዩ።					
3	I receive information in a formal way to do my job. ዝተዋህበኒ ስራሕ ንኸዓምም ሓበሬታ ብወግዓዊ መንገዲ ይቐበል።					
4	Formal communication enables me to exchange important, accurate, and clear information.. ወግዓዊ ዝርርብ ነቲ ኣገዳሲን ቕኑዕን ንጹርን ሓበሬታ ንኸለዋወጥ የኽእለኒ።					
5	I receive and send timely information through formal way. ብመንገዲ ወግዓዊ ዝርርብ ኣቢላ እዋናዊ ሓበሬታ ይቐበልን ይህብን።					
6	Formal communication enables me to do my job on time. ወግዓዊ ዝርርብ ስራሕይ ኣብ ግዚኡ ንኸሰርሕ የኽእለኒ።					
7	Formal exchange of information enables me to produce the required quantity. ወግዓዊ ብዝኾነ ምልውዋጥ ሓበሬታ ነቲ ዝድለ ብዝሒ ፍርያት ንኸፍሪ የኽእለኒ።					
8	Formal exchange of information enables me to produce quality products. ወግዓዊ ብዝኾነ ምልውዋጥ ሓበሬታ ነቲ ዝድለ ዓይነታዊ ፍርያት ንኸፍሪ የኽእለኒ።					

	On communication patterns	SA	A	N	D	SD
9	I have experienced ineffective formal communication. አድማዲ ዘይኮነ ወግዓዊ ዝርርብ ኣጋጢሞኒ ይፈልጥ።					
10	Ineffective formal communication affects me in executing task on time. አድማዲ ዘይኮነ ወግዓዊ ዝርርብ ስረሐይ ኣብ እዋኑ ንክይዓም ይጸልወኒ።					
11	Ineffective formal communication affects me negatively in producing the required quantity of products. አድማዲ ዘይኮነ ወግዓዊ ዝርርብ ነቲ ዝድለ ብዝሒ ፍርያት ንክየፍሪ ይጸልወኒ።					
12	Ineffective formal communication affects me negatively in producing the desired level of quality products. አድማዲ ዘይኮነ ወግዓዊ ዝርርብ ነቲ ዓይነታዊ ዝኾነ ፍርያት ንክየፍሪ ይጸልወኒ።					
13	The level of formal communication within the organization is effective. ኣብዚ ትካል ወግዓዊ ዝርርብ ኣብ ኣድማዲ ዝኾነ ደረጃ ይርከብ።					
14	I communicate informally to get important information to my job so easily. ኣነ ብዘይወግዓዊ ዝኾነ ዝርርብ ኣብሊ ነቲ ንስረሐይ ኣገዳሲ ዝኾነ ሓበሬታ ብቐሊሉ ይረኽቦ።					
15	Communicating informally enables me to exchange accurate, clear, and timely information. ዘይወግዓዊ ዝርርብ ነቲ ቐኑዕን ንጹርን እዋናውን ዝኾነ ሓበሬታ ንክለዋወጥ የክእለኒ።					
16	I have found informal communication within the organization fast and reliable. ኣብዚ ትካል ዘይወግዓዊ ዝርርብ ቁልጥፉን ውሕሱን ኮይኑ ረኪበዮ።					
17	Communicating informally helps me to generate new ideas related to my job. ዘይወግዓዊ ዝርርብ ምስ ስርሐይ ዝተኣሳሰሩ ሓደሽቲ ሓሳባታት ንክመንጩ ይሕግዝኒ።					
18	Communicating informally enables me to do my job on time. ዘይወግዓዊ ዝርርብ ስረሐይ ኣብ ጊዚኡ ንክሰርሕ የክእለኒ።					

	On communication patterns	SA	A	N	D	SD
19	Informal exchange of information enables me to produce the required quantity. ዘይወግዓዊ ብዝኾነ ምልውዋጥ ሓበሬታ ነቲ ዝድለ ብዝሒ ፍርያት ንኸፍሪ የኸእለኒ።					
20	Informal exchange of information enables me to produce quality products. ዘይወግዓዊ ብዝኾነ ምልውዋጥ ሓበሬታ ነቲ ዝድለ ዓይነታዊ ፍርያት ንኸፍሪ የኸእለኒ።					
21	The level of informal communication within the organization is effective. ኣብዚ ትካል ዘይወግዓዊ ዝርርብ ኣብ ኣድማዒ ዝኾነ ደረጃ ይርከብ።					
22	Ineffective informal communication within your organization obstructs the exchange of needed information. ኣድማዒ ዘይኮነ ዘይወግዓዊ ዝርርብ ነቲ ዘድሊ ሓበሬታ ንኸይትለዎዎጥ ይዕንቕፈካ።					
23	Ineffective informal communication affects me negatively in producing the required quantity of products. ኣድማዒ ዘይኮነ ዘይወግዓዊ ዝርርብ ነቲ ዝድለ ብዝሒ ፍርያት ንኸየፍሪ ይጸልወኒ።					
24	Ineffective informal communication affects me negatively in producing the desired level of quality products. ኣድማዒ ዘይኮነ ዘይወግዓዊ ዝርርብ ነቲ ዝድለ ዓይነታዊ ፍርያት ንኸየፍሪ ይጸልወኒ።					

7. Which pattern of communication in your organization is more effective to you in order to exchange information or message and ideas that you need to produce the required quantity and quality of products?

መታን እቲ ዝድለ ሓበሬታን መልእኽትን ሓሳባትን ተለዋዊጥካ ነቲ ዝተደለየ ብዝሕን ዓይነትን ፍርያት ንኸተፍሪ ኣብ ትካልኩም ኣየናይ ናይ ዝርርብ መንገዲ እዩ ንዓኻ ኣዝዩ ኣድማዒ ዝኾነ ።

Formal/ወግዓዊ ዝርርብ Informal/ዘይወግዓዊ ዝርርብ Both/ክልቲኦም

C. Communication structure

8. Using the following Likert scale, tick (√) what you think is the most appropriate answer **SA**=Strongly Agree, **A**=Agree, **N**=Neutral, **D**=Disagree, **SD**=Strongly Disagree

በዞም ዝስዕቡ መምዘኒ ተጠቐምካ እቲ ትኽክል እዩ ትብሎ መልሲ ምልክት (√) ብምግባር መልሲ ሃብ፤
SA=አዝዩ ይሰማማዕ, **A**=ይሰማማዕ, **N**=ማእኸላይ, **D**=አይሰማማዕን, **SD**=አዝዩ አይሰማማዕን,

	On communication structure	SA	A	N	D	SD
1	The communication structure of the organization is clear and well structured. ናይ'ዚ ትካል ናይ ዝርርብ ቅርጺ ንጽሩን ግቡእ ቅርጺ ኣለዎ።					
2	The organization encourages two-way communication between upper and lower level employees. እዚ ትካል ዝርርብ ሰራሕተኛታት ካብ ላዕሊ ንታሕቲ ከምእውን ካብ ታህቲ ንላዕሊ ክህሉ የተባብዕ።					
3	I communicate with employees through the existing communication structure. እነ በቲ ዘሎ ናይ ዝርርብ ቅርጺ ተመኩሰ ምስ ሰራሕተኛታት ዝርርብ የካይድ።					
4	I exchange information with upper levels in the organization እነ ምስ ላዕለዎት ሰራሕተኛታት ናይ'ዚ ትካል ሓበሬታ ይለዋወጥ።					
5	I receive important information to do my job from upper levels እነ ስረሓይ ንክዳምም ኣገዳሲ ዝኾነ ሓበሬታ ካብ ላዕለዎት ሰራሕተኛታት ይቐበል።					
6	I receive timely information to do my job from upper level employees. እነ ስረሓይ ንክዳምም እዋናዊ ሓበሬታ ካብ ላዕለዎት ሰራሕተኛታት ይቐበል።					
7	The level of downward communication in the organization is effective. ኣብዚ ትካል ካብ ላዕሊ ንታሕቲ ዝግበር ዝርርብ ኣብ ኣድማዒ ዝኾነ ደረጃ ይርከብ።					
8	Downward communication enables me to produce quality products. ካብ ላዕሊ ንታሕቲ ዝግበር ዝርርብ ዓይነታዊ ዝኾነ ፍሪያት ንኸፍሪ የኸእለኒ።					

	On communication structure	SA	A	N	D	SD
9	Downward communication enables me to produce the required quantity of products. ካብ ላዕሊ ንታሕቲ ዝግበር ዝርርብ ነቲ ዝድለ ብዝሒ ፍሪያት ንኸፍሪ የኸእለኒ።					
10	I often experience ineffective downward communication. ብተደጋጋሚ ውጺኢታዊ ዘይኮነ ካብ ላዕሊ ንታሕቲ ዝግበር ዝርርብ የጋጥመኒ።					
11	I often can't do my job because of delay in getting information from upper level employees. ብተደጋጋሚ ካብ ላዕሊዎት ሰራሕተኛታት ሓበሬታ ስለዝድንጉየኒ ስረሐይ ክሰርሕ ኣይክእልን።					
12	Ineffective downward communication affects me in producing the required quality of products. ውጺኢታዊ ዘይኮነ ካብ ላዕሊ ንታሕቲ ዝግበር ዝርርብ ነቲ ዝድለ ዓይነታዊ ፍርያት ንኸፍሪ ይጸልወኒ።					
13	Ineffective downward communication affects me in producing the required quantity of products. ውጺኢታዊ ዘይኮነ ካብ ላዕሊ ንታሕቲ ዝግበር ዝርርብ ነቲ ዝድለ ብዝሒ ፍርያት ንኸፍሪ ይጸልወኒ።					
14	I send information regularly to upper level employee. ብቐጻሊ ሓበሬታ ናብ ላዕሊዎት ሰራሕተኛታት ይሰድድ።					
15	The information I send to upper level is always welcomed. ናብ ላዕሊዎት ሰራሕተኛታት ብቐጻሊ ዝሰዶ ሓበሬታ ተቐባልነት ኣለዎ።					
16	I send information to upper level employees not only reports but also new ideas and suggestions ናብ ላዕሊዎት ሰራሕተኛታት ዝሰዶ ሓበሬታ ጽብጻብ ጥራይ ዘይኮነስ ሓደሽቲ ሓሳብትን ሪኢቶታትን ዝሓዘለ ኣዩ።					
17	I receive good responses to the information I sent to upper level employees. ናብ ላዕሊዎት ሰራሕተኛታት ዝሰዶ ሓበሬታ ኣወንታዊ ዝኾነ ግብረመልሲ ይረክብ።					
18	The level of upward communication in the organization is effective. ኣብዚ ትካል ካብ ታሕቲ ንላዕሊ ዝግበር ዝርርብ ኣብ ኣድማዒ ዝኾነ ደረጃ ይርከብ።					

	On communication structure	SA	A	N	D	SD
19	Communicating in upward direction with upper level employees enables me to produce quality products. ካብ ታሕቲ ንላዕሊ ዝግበር ዝርርብ ዓይነታዊ ዝኾነ ፍሪያት ንኸፍሪ የኸእለኒ።					
20	Communicating in upward direction with upper level employees enables me to produce the required quantity. ካብ ታሕቲ ንላዕሊ ዝግበር ዝርርብ ንቲ ዝድለ ብዝሒ ፍሪያት ንኸፍሪ የኸእለኒ።					
21	I often experience ineffective upward communication because of lack of willingness to receive information from lower level employees. ብሰንኪ ካብ ታሕተኞች ሰራሕተኛታት ሓበሬታ ናይ ዘይምቕባል ድልየት ዝተበገሰ ኣድማዒ ዘይኮነ ካብ ታሕቲ ንላዕሊ ዝርርብ የጋጥመኒ።					
22	I often can't produce the required quantity and quality of products because of ineffective upward communication. ብሰንኪ ኣድማዒ ዘይኮነ ካብ ታሕቲ ንላዕሊ ዝግበር ዝርርብ ብቕጽሊ ክፍርዮ ዝግባኣኒ ብዝሕን ዓይነትን ፍርያት ክፍሪ ኣይክእልን።					
23	The organization supports direct exchange of information with employees in other departments. ኣዚ ትካል ቀጥታዊ ዝኾነ ናይ ሓበሬታ ምልውዋጥ ምስ ናይ ካልእ ክፍልታት ሰራሕተኛታት ይድግፍ።					
24	I exchange information with employees in other departments. እነ ምስ ናይ ካልእ ክፍልታት ሰራሕተኛታት ሓበሬታ ይለዋወጥ።					
25	I receive important, accurate and clear information from employees in other departments. እነ ኣገዳስን ቁኑዕን ንጹርን ሓበሬታ ካብ ሰራሕተኛታት ናይ ካልእ ክፍልታት ይቐበል።					
26	I exchange freely and timely information with other departments. እነ ምስ ናይ ካልእ ክፍልታት ሰራሕተኛታት ነጻ ኮነ እዋናዊ ሓበሬታ ይለዋወጥ።					
27	The level of horizontal communication within the organization is effective. ኣብዚ ትካል ጎናዊ ዝርርብ ኣብ ውጹኢታዊ ዝኾነ ደረጃ ይርከብ።					

	On communication structure	SA	A	N	D	SD
28	Communicating with employees in other departments enables me to execute tasks. ምስ ናይ ካልእ ክፍልታት ሰራሕተኛታት ዝገብሮ ዝርርብ ስራሕይ ንኸዓምም የኸእለኒ።					
29	Communicating with employees in other departments enables me to produce quality products. ምስ ናይ ካልእ ክፍልታት ሰራሕተኛታት ዝገብሮ ዝርርብ ዓይነታዊ ፍርያት ንኸፍሪ የኸእለኒ።					
30	Communicating with employees in other departments enables me to produce the required quantity of products. ምስ ናይ ካልእ ክፍልታት ሰራሕተኛታት ዝገብሮ ዝርርብ ነቲ ዝድለ ብዝሒ ፍርያት ንኸፍሪ የኸእለኒ።					
31	I communicate diagonally with employees that do not have a direct structural link with our department. እነ ምስ ክፍልና ቀጥታዊ ዝኾነ ምትእስሳር ዘይብሎም ሰራሕተኛታት ናይ ካልእ ክፍልታት ዝርርብ የካይድ።					
32	Diagonal communication is effective in our organization. ኣብዚ ትካል ምስ ክፍልኻ ቀጥታዊ ዝኾነ ምትእስሳር ዘይብሎም ሰራሕተኛታት ናይ ካልእ ክፍልታት ዝርርብ ኣብ ውጺኢታዊ ዝኾነ ደረጃ ይርከብ።					
33	Diagonal communication has a role in executing the given tasks. ምስ ክፍልኻ ቀጥታዊ ዝኾነ ምትእስሳር ዘይብሎም ሰራሕተኛታት ናይ ካልእ ክፍልታት ዝርርብ ምክያድ ኣብ ዝተዋህበካ ስራሕ ኣብ ምፅማም ተራ ኣለዎ።					
34	Communicating diagonally enables me to produce the required quantity of products. ምስ ክፍልኻ ቀጥታዊ ዝኾነ ምትእስሳር ዘይብሎም ሰራሕተኛታት ናይ ካልእ ክፍልታት ዝርርብ ምክያድ ዓይነታዊ ዝኾነ ፍሪያት ንኸፍሪ የኸእለኒ።					
35	Communicating diagonally enables me to produce quality products. ምስ ክፍልኻ ቀጥታዊ ዝኾነ ምትእስሳር ዘይብሎም ሰራሕተኛታት ናይ ካልእ ክፍልታት ዝርርብ ምክያድ ነቲ ዝድለ ብዝሒ ፍሪያት ንኸፍሪ የኸእለኒ።					

9. Which communication structure do you use regularly to exchange information or message and ideas related to your tasks in order to produce the required quantity and quality of products?

መታን እቲ ዝድለ ሓበሬታን መልእኽትን ሓሳባትን ተለዋዊጥካ ነቲ ዝተደለየ ብዝሕን ዓይነትን ፍርያት ንኸተፍሪ ኣብ ትካልኩም ኣየናይ ናይ ዝርርብ መንገዲ እዩ ንዓኻ ኣዝዩ ኣድማዒ ዝኾነ ።

- Downward/ካብ ላዕሊ ንታሕቲ Upward/ካብ ታሕቲ ንላዕሊ
 Horizontal/ጎናዊ Diagonal/ስያፍ All/ኩሎም

D. Communication medium

10. As an employee, which medium of communication do you use to communicate with employees in the organization? Using the following Likert scale, tick (✓) what you think is the most appropriate answer:

A=Always VO=Very often S=Sometimes R=Rarely NU=Never used

ከም ሰራሕተኛ መጠን ኣብ ትካልኩም ምስ መሳርሕትኻ ዝርርብ ንኸትገብር ኣየናይ ናይ ዝርርብ መርበብ ትጥቀ። በዞም ዝስዕሱ መምዘኒ ተጠቂምካ እቲ ትኸክል እዩ ትብሎ መልሲ ምልክት (✓) ብምግባር መልሲ ሃብ።

A=ኹሎጊዜ VO=ብተደጋጋሚ S=ሓደ ሓደ ጊዜ R=ሳሕቲ NU=ተጠቂመሉ ኣይፈልጥን

	Communication Medium	A	VO	S	R	NU
1	Oral communication media (face-to-face, phone, and meetings) ብቃል (ብኣካል፣ ብቴሌፎን፣ ብኣኼባ)					
2	Written/print media (memo/letter, publications, and bulletin) ብጽሑፍ (ብደብዳቤ፣ ብሕትመት፣ ብመጻሕፍት)					
3	Electronic media (email, intranet, and social media) ቤሌክትሮኒካዊ መንገዲ (ኢሜይል፣ ኢንተርኔት፣ ማሕበራዊ መራከቢታት)					

11. Indicate the level of effectiveness of the communication medium in terms of delivering accurate, complete, clear, relevant, and timely information. Using the following Likert scale, tick (✓) what you think is the most appropriate answer.

VE=Very effective **E**=Effective **N**=Neutral **I**=Ineffective **VI**=Very ineffective

Remark: if your response in question 10(3) above is **NU**, skip no.3 below.

አብ ምምብጽጻሕ ቁጥሪ፣ ሙሉእ፣ ንጹርን እዋናውን ሓበሬታ ምርኩስ ብምግባር ደረጃ ብቐጻት ናይ ዝርርብ መርበብ ኣመልከት። በዞም ዝሰዕቡ መምዘኒ ተጠቂምካ እቲ ትኽክል እዩ ትብሎ መልሲ ምልከት (✓) ብምግባር መልሲ ሃብ።

VE=ኣዝዩ ኣድማዒ **E**=ኣድማዒ **N**=ማእኸላይ **I**=ዘይኣድማዒ **VI**=ኣዝዩ ዘይኣድማዒ

ሓበሬታ:- እንድሕን ናይ ቁ.10(3) ሕቶ መልስኻ **NU** ኮይኑ ንሕቶ ቁ.3 ስገራ።

	Level of effectiveness of the communication medium	VE	E	N	I	VI
1	Oral communication media (face-to-face, phone, and meetings) ብቐል (ባካል፣ ብቴሌፎን፣ ብኣኼባ)					
2	Written/print media (memo/letter, publications, and bulletin) ብጽሑፍ (ብደብዳቤ፣ ብሕትመት፣ ብመጻሕፍት)					
3	Electronic media (email, intranet, and social media) ቤሌክትሮኒካዊ መራኽቢ (ኢሜይል፣ ኢንተርኔት፣ ማሕበራዊ መራከቢታት)					

12. Using the following Likert scale, tick (√) what you think is the most appropriate answer:

SA=Strongly Agree A=Agree N=Neutral D=Disagree SD=Strongly Disagree

በዞም ዝሰዕቡ መምዘኒ ተጠቂምካ እቲ ትኸክል እዩ ትብሎ መልሲ ምልክት (√) ብምግባር መልሲ ሃብ፤

SA=አዝዩ ይሰማማዕ, A=ይሰማማዕ, N=ማእኸላይ, D=ኣይሰማማዕን, SD=አዝዩ ኣይሰማማዕን,

	On communication medium	SA	A	N	D	SD
1	The communication medium that I use for communicating with employees enables me to exchange information. እነ ዝጥቀመሉ ናይ ዝርርብ መርብብ ምስ መሳርሕተይ ሓበሬታ ክለዋወጥ የኸእለኒ።					
2	I select and use a communication medium in relation to its capacity to deliver information. እነ ናይ ዝርርብ መርብብ ዝመርጽን ዝጥቀመሉን ኣብቲ ናይቲ መርብብ ብቕዓት ሓበሬታ ናይ ምብጻሕ እየ ዝምርኮስ።					
3	The communication medium that I use enables me to exchange accurate and clear information. እነ ዝጥቀመሉ ናይ ዝርርብ መርብብ ቁኑዕን ንጽሩን ሓበሬታ ክለዋወጥ የኸእለኒ።					
4	The communication medium that I use enables me to exchange timely information እነ ዝጥቀመሉ ናይ ዝርርብ መርብብ እዋናዊ ሓበሬታ ክለዋወጥ የኸእለኒ።					
5	Oral communication enables to get immediate and clear information ብቻል ዝግበር ዝርርብ ቁልጥፉን ንጽሩን ሓበሬታ ንምርካብ የኸእለኒ።					
6	The communication through written directives and reports are clear and concise to me ብመንገዲ ጽሑፍን ጸብጻብን ዝግበር ዝርርብ ንዓይ ንጽሩን ነጥቢ ዝሃርምን እዩ።					
7	The formal flow of written information through the communication structure never delays. ኣብቲ ናይቲ ትካል ናይ ዝርርብ ቅርጺ ተመርኩሱ ዝግበር ወግዓዊ ናይ ጽሑፍ ዝርርብ ብተደጋጋሚ ኣይድንጉይን።					
8	I regularly share and exchange information through electronic media to do the job. እነ ስራሕይ ክሰርሕ ብቕጻሊ ኣሌክትሮኒካዊ መራኸቢ ተጠቂመ ሓበሬታ ይለዋወጥ።					

	On communication medium	SA	A	N	D	SD
9	Information exchange through electronic media is accurate, clear, and timely. (Remark: if your response in question 8 above is D or SD , skip this question) ብመንገዲ አሌክትሮኒካዊ መራኸቢ አቢሉ ዝግበር ዝርርብ ቅንዕን ንጹርን እዋናውን እዩ። ሓበሬታ፡- እንድሕር ናይ ቁ.8 ሕቶ መልስኻ D ወይ SD ኮይኑ ነዛ ሕቶ እዚኣ ስገራ።					
10	Proper communication media delivers accurate, clear and timely information to an employee in need of it. ትኽክል ዝኾነ ናይ ዝርርብ መራኸቢ ነቲ ሓደ ሰራሕተኛ ዘድልዮ ቅንዕን ንጹርን እዋናውን ዝኾነ ሓበሬታ የብጽሕ።					
11	The use of appropriate communication medium enables me to produce the required quantity of products. ትኽክል ዝኾነ ናይ ዝርርብ መራኸቢ ብምጥቃም ዝተድለየ ብዝሒ ፍሪያት ክፍሪ የክእለኒ።					
12	The use of proper communication medium enables me to produce the required quality of products. ትኽክል ዝኾነ ናይ ዝርርብ መራኸቢ ብምጥቃም ነቲ ዝተድለየ ዓይነታዊ ፍሪያት ክፍሪ የክእለኒ።					

13. Which communication media is preferable to you for communicating within the organization considering the level of effectiveness of the media?

ኣድማዕነት ናይቲ መርበብ ኣብ ግምት ብምእታው ኣየናይ ናይ ዝርርብ መራኸቢ እዩ ንዓኻ ኣብ'ዚ ትካል ዝርርብ ንኸተካይድ ተመራጺ ዝኾነ?

Oral/ብቃል written /ብጽሑፍ

Electronic media/ብኣሌክትሮኒካዊ መራኸቢ

E. Communication climate

14. Using the following Likert scale, tick (√) what you think is the most appropriate answer:

SA=Strongly Agree A=Agree N=Neutral D=Disagree SD=Strongly Disagree

በዘመን ዝሰዕቡ መምዘኒ ተጠቂምካ እቲ ትኽክል እዩ ትብሎ መልሲ ምልክት (√) ብምግባር መልሲ ሃብ፤
SA=አዝዩ ይሰማማዕ, A=ይሰማማዕ, N=ማእኸላይ, D=ኣይሰማማዕን, SD=አዝዩ ኣይሰማማዕን,

	On communication climate	SA	A	N	D	SD
1	I communicate with employees considering the existing communication climate of the organization. እነ ምስ ሰራሕተኛታት ዝርርብ ዘካይድ ነቲ ኣብዚ ትካል ዘሎ ናይ ዝርርብ ሃዋሁ ኣብ ግምት ብምእታው እዩ።					
2	The organization encourages open communication between employees. እዚ ትካል ግሉጽ ዝኾነ ዝርርብ ኣብ ሞንጎ ዘራሕተኛታት ክህሉ የተባብዕ።					
3	Employees share information and new ideas freely throughout the organization. ኣብዚ ትካል ሰራሕተኛታት ነጻ ኾይኖም ሓበሬታን ሓደሽቲ ሓሳባትን ይለዋወጡ።					
4	Employees communicate with an open minded and trustworthy ሰራሕተኛታት ብኸፉት ኣእምሮንን ምትእምማንን ዝርርብ የካይዱ።					
5	Employees are always willing to communicate. ኩሉ ግዜ ሰራሕተኛታት ድልየት ናይ ዝርርብ ኣለዎም።					
6	Employees communicate with honesty ሰራሕተኛታት ብቕንዕና ዝርርብ የካይዱ።					
7	I am free to express opinions and offer suggestion about work related issues to upper levels employees. እነ ነጻ ኾይነ ምስ ስረሐይ ዝተኣሳሰሩ ሪኢቶታትን ምኽርታትን ንላዕሊዎት ደረጃ ሰራሕተኛታት ንይገልጹሎም።					
8	I trust the information I receive from co-workers እነ ኣብ ልዕሊ ካብ መሳርሕተይ ዝቐበሎ ሓበሬታ እምነት ኣሎኒ።					
9	Co-workers and upper level employees do listen to my new ideas መሳርሕተይን ላዕሊዎት ደረጃ ሰራሕተኛታትን ነቲ ዘቐርቡሎም ሓደሽቲ ሓሳባት ብግቡእ ይሰምዑኒ።					
10	I work in a healthy communication environment እነ ኣብ ጥዕና ዘለዎ ናይ ዝርርብ ሃዋሁ ይሰርሕ።					

	On communication climate	SA	A	N	D	SD
11	The open and healthy communication climate enables me to exchange accurate, complete, clear, relevant and timely information. ግሉጽን ጥዕና ዘለዎ ናይ ዝርርብ ሃዋሁን ቁኑዕ፣ ሙሉእ፣ ንጹርን እዋናውን ሓበሬታ ንክለዋወጥ ኣኽኢሉኒ።					
12	The open and healthy communication climate thus enables me to better work performance. ግሉጽን ጥዕና ዘለዎ ናይ ዝርርብ ሃዋሁን ዝተማሓየሽ ስራሕ ንክሰርሕ ኣኽኢሉኒ።					
13	I often experience defensive barriers that limits communication ብተደጋጋሚ ንዝርርብ ዝድርቱ ማሕንጃታት የጋጥሙኒ።					
14	I often experience from not getting the required information that I need to execute the task. ብተደጋጋሚ ንስራሕይ ክሰርሕ ዘድልዩኒ ሓበሬታታ ዘይምርካብ የጋጥመኒ።					
15	I often experience low performance as a result of defensive barriers to communication. ብተደጋጋሚ ብሰንኪ ዕንቅፋታት ናይ ዝርርብ ትሑት ዝኾነ ናይ ስራሕ ብቕዓት የሪኢ።					
16	Communication climate has an effect to my work performance in terms of producing the required quantity of products. ናይ ዝርርብ ሃዋሁ ነቲ ዝድለ ብዝሒ ፍሪያት ንክፍሪ ኣብ ናይ ስራሕይ ብቕዓት ጽልዎ ኣለዎ።					
17	Communication climate has an effect to my work performance in terms of producing quality of products. ናይ ዝርርብ ሃዋሁ ነቲ ዝድለ ዓይነታዊ ፍሪያት ንክፍሪ ኣብ ናይ ስራሕይ ብቕዓት ጽልዎ ኣለዎ።					

F. Employee performance

15. Using the following Likert scale, tick (√) what you think is the most appropriate answer:

SA=Strongly Agree A=Agree N=Neutral D=Disagree SD=Strongly Disagree

በዞም ዝስዕቡ መምዘኒ ተጠቓምካ እቲ ትኽክል እዩ ትብሎ መልሲ ምልክት (√) ብምግባር መልሲ ሃብ፤

SA=አዝዩ ይሰማማዕ, A=ይሰማማዕ, N=ማእኸላይ, D=አይሰማማዕን, SD=አዝዩ አይሰማማዕን,

	Employee performance	SA	A	N	D	SD
1	The working conditions in the organization are good. አብዚ ትካል ኩነታት ናይ ስራሕ ጽቡቕ እዩ።					
2	The organization provides the necessary resources. አዚ ትካል ኣይድላዩ ዝኾኑ ንጥረ-ነጋርት የቐርብ።					
3	I understand my responsibility with clear-cut tasks to be accomplished. እነ ነቲ ብንጹር ክዓም ዝግባእ ዕማም ብግብእ ይርዳእ።					
4	I have willingness of performing high እነ ዝለዓለ ዕማም ናይ ምዕማም ድልየት ኣለኝ።					
5	My work performance relates to work efficiency and effectiveness ናይ ስራሕ ብቐዓተይ ምስ ናይ ስራሕ ውጺኢታውን ኣድማዕነትን ይዛመድ።					
6	My work performance is assessed in terms of quantity and quality of products. ናይ ስራሕ ብቐዓተይ ቦቲ ዘፍሪዮ ብዝሕን ዓይነታውነት ይግምገም።					
7	I accomplish tasks in time. ስራሕ ኣብ ግዜ ይዓም።					
8	I consider the performance standards established for each task during the execution of tasks እነ ነቲ ናይ ነፍሲወከፍ መምዘኒ ብቐዓት ኣብ ግዜ ዕማም ናይቲ ስራሕ ኣብ ግምት የእትዎ።					
9	I communicate with others on areas of work improvement. እነ ነቲ ምምሕያሽ ዘድልዮ ናይ ስራሕ ኩነታት ምስ ካልኣት ይዘራረብ።					
10	I communicate with supervisors and coworkers as necessary. እነ ምስ ሓለፍተይን መሳርሕተይ ከም ኣድላይነቱ ዝርርብ የካይድ።					

	Employee performance	SA	A	N	D	SD
11	I collaborate with other department employees as necessary. አነ ምስ ናይ ካልእ ክፍልታት ሰራሕተኛታት ይተሓጋገዝ።					
12	I am easily accessible to discuss issues pertinent to task accomplishments. ሰራሕ ንኸዕመም ንዘድልዩ ኣገደስቲ ጉዳያት ንምዘርራብ ኣነ ብቐሊሉ ተረካባይ እየ።					
13	I apply the feedback given to improve my performance. ብቐዓት ናይ ስረሐይ ንምምሕያሽ ንዝተዋህበኒ ግብረመልሲ የተግብር።					
14	I identify problems that affect my performance. ኣነ ንብቐዓት ናይ ስረሐይ ዝጸልዉኒ ጸገማት የለልዮም።					
15	I solve problems that affect my performance in time whenever possible. ኣነ ንብቐዓት ናይ ስረሐይ ዝጸልዉኒ ጸገማት ብዝተኻእለ መጠን ኣብ ግዚኦም ይፈትሖም።					

Appendix II: Interview Guide

Interview Questions for selected Employees of the Selected Large Manufacturing Businesses in Eritrea

1. Would you explain the importance of communication in your organization?
2. How do you perceive the communication patterns both formal and informal in your organization?
3. Do you think that your organization encourages informal communication? Why?
4. How do you describe both formal and informal communication in relation to your performance in terms of efficiency (quantity) and effectiveness (quality)?
5. In your opinion, do you think that your organization encourages two-way communication between the management and lower level employees? How do you find it relation to your performance?
6. Explain the levels of communication structure (downward, upward, horizontal, and diagonal communication) in relation to effectiveness in exchanging information.
7. How much does the communication structures in your organization support to your performance in terms of efficiency and effectiveness?
8. Describe the communication medium that you use for communicating with colleagues in your organization.
9. Explain how you select a communication medium for communicating with employees in your organization.
10. Explain how much the communication medium play a role to your performance in terms of efficiency and effectiveness.
11. Describe how you perceive the communication climate in your organization in relation to a free, open, trustworthy, willingness to communicate, and willingness to listen in information exchange.
12. Have you ever experienced any communication barrier in your organization? Explain the nature of the barrier.
13. Explain how such communication barriers or closed communication affects your performance in terms of efficiency and effectiveness.
14. How is the collaboration between employees in different departments in relation to job accomplishments?
15. How do you see the notion that an employee is an asset to the organization? What is your experience in relation to this?

Appendix III: List of Large Manufacturing Businesses in Eritrea

**MINISTRY OF TRADE AND INDUSTRY
LIST OF LARGE MANUFACTURING ESTABLISHMENT, 2015**

S/N	ISIC	Name of Establishment	Main Product	Zoba	Sub Zoba	Town	Tel	Contact Person	No. Of workers
1	3610	Semmel Metal & Wood Works	Metal, wood, upholstery & aluminum	Maeke	South West	Asmara	150468/150469/150472	Michel G/meskel	977
2	1712	ZAER Textile	Textile and garment	Maeke	South West	Asmara	182383	Mr.Zambatti pietro	780
3	1712	Baroco Eritrea	Military & students uniform	Maeke	North West	Asmara	124241	Russom Neash	756
4	1553	Asmara Brewery Corporation	Beer and liquor	Maeke	South east	Asmara	181966	Yohannes habte	464
5	1712	Natsinet Enterprise Textile	Textile products	Maeke	North East	Asmara	122177	Berhane Gezai	352
6	3610	Keren Metal, Wood & Cement	Metal, wood, cement work & construction	Anseba	Keren	Keren	401024	Daniel oqubatinsae	345
7	2694	Ghedem Cement	Portland cement	N/R/Sea	Foro	Ghedem	08534284/121947	Woldai kidane	277
8	1554	Red Sea Bottlers	Coca-cola,Fanta,Sprite,Tonic,Soada water	Maeke	North West	Asmara	162530/35/40	Gabriel Fasiel	261
9	1712	Eritrea Textile	Knitwear &markt yarn	Maeke	South West	Asmara	182387	Samson Tsegat	243
10	2423	Azel Pharmaceuticals	Pharmetical product	Anseba	Keren	Keren	400234/121991	Misgina Tekleab	236
11	1920	Dahlak Shoe	Leather canvas,plastic shoe	Maeke	South West	Asmara	181082	Tamrat Tewelde	219
12	2221	Sabur Printing Services	Books, news paper, boxes, labels, forms &	Maeke	South West	Asmara	150350	Mussei T/mariam	217
13	1520	Asmara Meat & Dairy Products	Butter, cheese,& Mortadela	Maeke	North West	Asmara	120923/161284	Hiwet Metake	216
14	1531	Keih Bahri Food Products	Flour semolino	Maeke	South east	Asmara	181302	Aregash g/medhn	196
15	2696	Margran PLC	Marble & granite	Maeke	North east	Asmara	114756/201534	Sisay Haile	180
16	1531	Red Sea General Mills	Flour,DMK,Pasta & biscuits	Debub	Dekemhare	Dekemhare	641018	G/hiwet w/mirael	165
17	2693	Ghinda Bricks	Solid bricks	N/R/Sea	Ghinda	Ghinda	560091	Ibrahim omer sami	165
18	3610	Dongolo Furniture	Household and office furniture	N/R/Sea	Ghinda	Dongolo	08535003	Tewelde Abrham	142
19	2429	Massawa Salt Works	Marin coarse salt	N/R/Sea	Massawa	Massawa	552096	Kidane/Abeba	138
20	2694	Eritrea Cement	Ordinary portland cement	N/R/Sea	Massawa	Massawa	547013/121947	Woldai kidane	136
21	2899	Wina H.H Utensils	Aluminium & plastic house hold	Maeke	South west	Asmara	150383	Abrham W/marim	126
22	2520	Kokob Dubarwa Plastic	Plastic products	Debub	Dibarua	Dibarua	08600039/1213	Abdelaker Saleh	125
23	1920	Saba Shoe	Shoes products	Maeke	South East	Asmara	188699	Tewelde mhretab	113
24	2695	Space 2001 Eritrea	Blocks	Maeke	North West	Asmara	151598	SelamunHayle	111
25	1551	Bisrat Liquors	Liquor	Debub	Dubarua	Dubarua	08600071	Samuel Tesfahiorgis	106
26	3610	Arag Wood and Metal Work	Wood & metal works	Maeke	North East	Asmara	122100/120599	Kostantinos Negash	105
27	1810	Hawashait Garment	Garments	Maeke	South East	Asmara	1888820	Kiar A/hagiz	104

Appendix IV: Approval of Research Proposal



**JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY
DIRECTOR, BOARD OF POSTGRADUATE STUDIES**

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REF: JKU/2/11/HD421-0980/2014

28TH MAY, 2018

ZEMICHAEL FESAHATSION WELDEGHEBRIEL

C/o SCDS

JKUAT

Dear Mr. Fesahatson,

RE: APPROVAL OF Ph.D. RESEARCH PROPOSAL AND OF SUPERVISORS

Kindly note that your Ph.D. research proposal entitled: "ORGANIZATIONAL COMMUNICATION AND EMPLOYEE PERFORMANCE IN SELECTED LARGE MANUFACTURING BUSINESSES IN ERITREA" has been approved. The following are your approved supervisors:-

1. Prof. Hellen Mberia
2. Dr. John Ndavula


PROF. MATHEW KINYANJUI
DIRECTOR, BOARD OF POSTGRADUATE STUDIES

Copy to: Dean, SCDS

/cm



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Appendix V: Research Authorization (Supporting Letter)

ሃገራዊ ኮሚሽን ለሰነድና ቴክኖሎጂ



المفوضية الوطنية للتعليم العالي

National Commission for Higher Education

Ref. No.: BH/FA/14/3/324/18

Date: 10 APR 2018

To Whom It May Concern

Ato Zemicahel Fessahasion, a faculty member of Eritrea Institute of Technology, is a PhD student at Jomo Kenyatta University of Agriculture and Technology. He is presently in Eritrea to conduct his dissertation research on "Influence of Organizational Communication on Employee Performance in Selected Large Manufacturing Business in Eritrea." He will collect data using different data collection tools like a structured questionnaire and focus group interviews from the manufacturing firms whose list is attached with this letter. The National Higher Education and Research Institute kindly requests your esteemed firm to provide Ato Zemicahel Fessahasion with the data he needs. Your cooperation in this matter is profoundly appreciated.

Sincerely,

Zemenfes Tsighe

Zemenfes Tsighe (Prof.),
Director, Bureau of Higher Education Administration and International Linkages
National Higher Education and Research Institute



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Appendix VI: Interview Themes

Summary and Narration of the Interviews According to the Themes

1. Importance of communication (formal and informal communication)

Employees of the manufacturing businesses confirmed that communication is important in the manufacturing work places. They explained that the work processes are based on chains and needs to communicate to do the jobs. No one can work alone as the work processes involve interrelated activities and a number of employees to carry out those activities. The work demands communication and you cannot work without it. In such activities, communication is becoming the means for understanding among employees related to the work activities. Communication in a work environment helps to fill the gaps, to have understanding, and solve problems so that job can be done properly. In addition, for any work, it is important to coordinate those activities, which requires communication. By communicating ideas with your colleagues and by combining those ideas, job processes and quality of products can be improved. Even work plans need to be communicated in terms of doing this today and this next so that everyone would be ready to do the job according to the plan. In addition, for instance, job orders and directions given to lower level employees from upper levels following the management processes. Similarly, reports and suggestions send to upper managements. Thus, employees communicate with upper levels to receive tasks and job directions and then communicate among employees for the execution of the tasks accordingly. You cannot know who is working and what is working without any communication. Your work is achieved only through communication. Communication is a must in workplaces.

2. Perceive the communication patterns (formal and informal)

Interviewed employees confirmed that both communication patterns are used and accepted. They argued that formal communication is important since it is clear and official. It is usually applied in written as well as in a formal meeting. Formal communication is used for serious issues that requires documentation and to make things

clear. For instance, job assignments flow in a formal way following the management structure. Thus, usually they receive job assignments in a formal way and then communicate among them in an informal way and accelerate the accomplishments of the job. They use both but formal is used more in order to avoid any misunderstanding. Formal communication is more important for production. However, informal is frequently used since the nature of the work demands it. It is applied at the execution levels in which employees would be forced to communicate informally in order to avoid misunderstanding. Therefore, both communication patterns are integral, useful, and integrated together to achieve productivity in the manufacturing businesses.

3. Encouraging informal communication

In the manufacturing businesses, the work processes are based on chains. In this case, informal communication is a mandatory and it is their daily tool for the execution of tasks since it involves immediate feedback. It speeds up the exchange of information and accelerates the work processes. Thus, they cannot communicate every minute in a formal way. This is only possible in an informal way. It is the main tool and they feel free and open when they communicate informally. They communicate in terms of giving me this one, bring the other one latter, this is well done, and please adjust this one, and so on. For instance, once the order comes downward formally, they need to communicate with the concerned officers and colleagues informally on how they are going to deal with it (generating ideas), identifying resources that they need, and so on. they communicate with any employee to get the information that they need to do the job. Informal communication is encouraged as far as it helps to achieve the target of the industry. Even the management visit and communicate with them informally to see how they are doing and what can be done to improve the work processes, what they need , and so on.

However, some employees explained that although informal communication is encouraged, it leads someone to bypass the management structure and leads to some conflicts that might affect productivity. Even in some instances, they deny what they

said before, particularly if something went wrong, and alter the instructions that completely affect productivity. Consequently, they have reservations on informal communication particularly to serious issues. Therefore, to avoid such problems, they prefer and encourage much to communicate formally, particularly serious matters that relate to productivity, than informally. Thus, in order to avoid confusions and misunderstanding, they prefer more to use formal communication for production since it is clear and official. They then communicate only informally to non serious issues during the executions of tasks. Outside of this, informal communication is not encouraged and it might be considered as a threat to the businesses.

4. Formal and informal communication and employee performance

In relation to formal and informal communication, the interviewed employees confirm that both patterns support employee performance if they use them properly. There is a report in everyday to ensure the production of the required quantity and quality of products. There is also an overall formal meeting to look at the success and failure of everyday performance. Besides, since the work processes is a chain, informal communication is becoming their daily tools. They said that there is difference on performance between working by communicating and by not communicating. If no communication, no good performance. For instance, one employee explained that “I actually work in the quality assurance unit. In this case, I need to communicate formally and informally with the concerned employees to collect data, check for quality, and give them the feedback again to the employees in the production processes. Such communication helped me to do the quality assurance processes properly that would help employee to produce not only the required quantity of products but also to produce in the required quality standards.”

In addition, they usually prefer formal communication as it is clear and official. Job orders come formally. Then based on the formal job orders and during the execution of tasks, informal communication helped them to structure the activities and have controls

on the processes to produce the required quantity and quality of products. So, both patterns have roles on their performance.

Further, they explained that both patterns support performance since formal helps them to communicate official matters and informal communication speeds up the exchange of information that ultimately results to better performance. Informal communication is more immediate and has a profound impact on performance. For instance, one employee confirmed that “I have got resources that I need to do my job informally instead of waiting the formal processes but the action should be formalized later.”

However, although they did communicate much frequently in an informal way, it is still difficult to obtain the right information since some employees are very caution to be open. Consequently, it affects performance. Therefore, formal and informal communications have profound impacts on employee performance.

5. Encouraging two-way communication & employee performance

The interviewed employees confirmed that two-way communication was encouraged and it has roles in their performance in producing the required products. The interview results indicate that two-way communication (vertical communication) is part of the procedure for communication to ensure productivity. The employees said that “we need to communicate vertically because it was meant for achieving productivity. Without such communication, job cannot be done and it might be paralyzed.” For instances:

One employee explained that production manager communicate with branch manager, to department heads, unit head and lower level following the management structure. For instance, the branch manager prepares the design of the shoe (Bola) that would be produced and then communicate with the production managers for approval. Then, they communicate with employees in the production process. Similarly, the lower level employees also communicates with upper levels, for instance, in terms of leather quality (as a resources) to produce the required quality and quantity of products. Therefore, the

two-way communication is encourage and supports performance since the work is interconnected particularly in the production processes.

Another employee also explained that job order comes downward formally and, at the same time, we need to communicate with upper level on issues related to tasks (for instance, the feasibility of the order), resources that we need, and so on. Such communication would help to produce what is ordered in terms of the required quantity and quality of products.

Another one also said that we communicate in both directions (vertically). For instance, the lower level employees in our business are less educated but well experienced. In this case, the production managers usually listen to them carefully and accept their report and new ideas. We also receive job direction, feedbacks and other relevant information to do job in a better way from upper levels. Such communication between upper and lower level employees has influence on employee performance.

However, according to the interviewed employees, not both directions of communication were effective in the manufacturing businesses. According to the interviews, for instance, in some manufacturing businesses, downward communication was effective but upward communication was not widely used because there was lack of responses from upper levels. It was poor since there was no a conducive environment. They further explained that there was communication from upper level to lower level following the communication structure in terms of job order but it was weak to upper levels as responses from upper level is weak. As a result, lower level employees did not want to communicate upward except providing reports. Consequently, there were no improvements in the quality of the products although the job was done. Thus, it affects performance.

However, in some other businesses, both ways are practical and acceptable. Not only receiving order from upper level but also sending reports and new ideas to upper levels based on experiences. Further, one interviewed employee described that “our job is

innovative work oriented and so we communicate vertically. Although, job order has to come from upper level, innovative ideas and reports send to upper level, which in turn send responses to lower level employee that would help in the production activities in terms of producing the required quantity and quality of products.

6. Effectiveness of the communication structure

The manufacturing businesses have their own management structure through which communication takes place. In addition to vertical communication, horizontal communication between units or departments is quite crucial as the work processes dictates us to communicate. Actually, horizontal is much effective than vertical since we communicate to the same level. Even, if it is necessary, we also communicate diagonally to do the job but it is rare from lower level employee's perspectives. Thus, the existing structure is favorable to communication (Sabur). For instances:

One employee explained that “in our manufacturing businesses, for instance, there are different departments such as cutting, weaving, assembly, and finishing. These departments communicate within and across the departments (horizontally) and vertically. The work process forced them to communicate effectively following the management structures. But, it is not much on diagonal communication. It happens rarely. So, the existing communication structure is suitable for effective information exchange (Dahlak).

Another employee also said that “we communicate following the existing communication structure. For instance, there are three sub-departments within the production departments. These are: brew house, fermentation, and filtration, these three can communicate with the laboratory if they need some assistance. They can also communicate among the three departments. Thus, we communicate following the existing structure but diagonal communication is rarely used. Therefore, the communication structure is suitable for communication. (Brewery)

However, even there is a communication structure and communicate accordingly, the communication is not effective because of the management problems following the structure. Employees prefer to keep quiet since in some instances it might harm themselves by communicating honestly and openly. This affects our performance. In addition, any problem of communication following the communication structure could not be the problem of the communication structure but the individual behavior and interests. So, the structure is suitable for effective information exchange but individual behavior and interests affect the communication, which in turn affects performance.

7. Communication structures and employee performance

Communication structure is the base for information exchange among employees related to their tasks. Information is also the source for productivity. Without communication, job cannot be done. So, employees need to know with whom they should communicate to get the required information. In this case, a communication structure is important since it sets out clearly the direction of communication. This would help to get the needed information on time to do the job from the respective individuals and offices. Thus, communication structure enables them to perform better since it helps us to communicate in different directions and get the information we need on time and execute tasks accordingly. Therefore, communication structure helps to have a good flow of information and, as a result, the production level is good. Hence it has a role in employee performance. However, there are instance where following such structure would obstruct from getting the need information because of the individual behaviors and interests in the management structure that affects employee performance negatively. Therefore, communication structure can have influence on employee performance.

8. Communication medium used

Employees use both the oral and written communication but not electronic media since the technology is not available. They use written for formal communication (for instance, report, important information, job direction or job order), and they use oral for

further explanations and exchange of ideas or communication that involve immediate feedback (face-to-face, telephone and meetings).

9. Selection of a communication medium

A medium is selected based on a number of factors. For instance, if the specification for the design is not clear, then face-to-face is preferable; if it is job order, written is preferable since it requires being an official order. Generally, the following factors are considered by the manufacturing businesses to select a medium for communication:

- The nature of the work or the tasks that would be executed
- Seriousness of the issue
- The weight of the information
- The ability of the medium to transfer the right information clearly.
- The immediate feedback requirements
- It depends on the formalization of the issues
- Individual personalities: some employees do not listen or do not care what you said. So, they forced you to communicate in strong oral or written or both using powerful words.

10. Communication medium and employee performance

The interviewed employees explained the influence of communication medium on employee performance as follows:

The communication medium that you use has its own role in addressing issues related to the tasks. For instance, if an employee is slowing down the work process and not doing in the right way, then there is no choice except to communicate face-to-face and address the issue. In this case the medium helped you to facilitate the work and perform in the right way. Hence, the quantity and quality of the work can be addressed. In addition, the right medium helps to transfer the right information that helps to do job. Hence, communication medium has its own role on employee performance.

Further they explained that, for instance, if the written is not adequately clear, then you cannot proceed to do the job. In that case, you need to communicate orally and make things clear and proceed on executing tasks. In this way, the communication medium has a role on employee performance.

A medium can influences performance positively and negatively. It depends on the clarity of the information in which the medium is carried on. One employee said that “I have experienced on wrong execution of tasks because of unclear information (oral) but later solved by communication and having a written one.”

Performance is dependent on clear information. However, considering their manufacturing business, written is much clear than oral particularly for job order. For instance, they tell you to do something orally, and then, in the next day, they say that this is not what we said. In this case, products are produced wrongly. So, the medium has a role to transfer the right information that determines the performance. In addition, the interviewee said that, for instance, you receive a design in written but it might need a brief. So, a written document can be used for references and oral for executions in terms of understanding the design, what and how it will be done. So, a medium has its own role in performance.

11. Status of the communication climate

The interview result confirms that the communication climate in the selected large manufacturing businesses is generally good and enables them to carry out their job by communicating among each other. The explanations in relation to the status of the communication climate (free, open, trustworthy, willingness to communicate, and listening) is as follows.

The communication climate is in good atmosphere as the nature of the work demands it. If the atmosphere is not good, the communication would be affected which in turn affects employee performance. Even lower level employees bring new ideas and suggest

the management what kind of leather should be purchased, the challenges that they have to achieve their work. Above all, this is part of our discipline and must be created. One employee said that “I think the communication climate is good. for instance, I am a young graduate employee with three years experience, but wherever I go to any office, they listen to me, give me information clearly, openly and clearly, and we trust each other. However, we look at the weight of the information that we exchange since certain information requires cautions since there is no absolute openness. So, the communicate climate is ok. We communicate openly, freely, and with trustworthy because communication is important to do the job. So, such climate existed and it must exist. However, there is no absolute vey good communication climate. Therefore, the communication climate was fairly good with certain limitations as described below:

The employees explained that “ we are human beings with different behaviors. Thus, there are behavioral problems to be open, free, and honest. For instance they said that you may find people not to communicate in the right way. However, most employees communicate with honest, open and free because it is for the purpose of accomplishing tasks. Thus, the communication climate is somehow ok.

However, some interviewed employees confirmed that their communication climate was not as good as they expected and thus affect their performance. One employee explained that within the workshop, the climate is fine but as a whole it is not fine since there are no responses and put pressures by the management. People do not want to communicate openly and freely. As a result, defective products were produced. Thus, the communication climate is fine at the lower level but as a whole it is not much good. Consequently, tasks were affected and thus performance was not good because employees were not able to get the needed information.

12. Experiencing any communication barrier

The interviewed employees confirmed the existence of communication barrier (being not open, free, honesty, listening, and willing to communicate). They explained that this

is a work place where employees come from different backgrounds and interests. Employees differ in terms of personalities. Therefore, it is normal to see open and close communication as it might be associated with the individual behavior despite the fact that the manufacturing businesses encourage to have a good communication climate and consider communication barriers as bad discipline. However, barriers appear rarely since there is no tolerance for such barriers. It is considered as part of discipline.

Communication barriers appeared in terms of not wanting to listen or not understanding, not to share ideas or knowledge, not willing to communicate. In addition, based on the experience from other employees who had been damaged their life in the manufacturing businesses by being communicated freely, honestly and openly, you would not be motivated to communicate freely, honestly and openly. Always there are cautions or reservations on communication. Thus, it lacks certain level of openness and willingness to communicate. So, this is a barrier by itself.

13. Closed communication and employee performance

The interviewed employees had also confirmed that communication barriers have influence on employee performance. They explained that if it is not noticed as so early as possible and solving it immediately during the work, it affects employee performance negatively particularly if it is related to the work processes or chain. No communication barrier leads to better performance since it block from getting the needed information to do the job. In the manufacturing business, work is dependent on communication among employees. For instance, if someone is not listening properly or communicating honestly, work could be done wrongly and thus affects production in terms of speeding up and quality of the products. It is important to note that barriers are obstacles in production processes and thus affect employee performance. In other words, barriers lead to ineffective communication, which in turn affects productivity in terms of producing the required quantity and quality of products on time.