

**MANAGING STAKEHOLDER COMMUNICATION IN THE GHANAIAN
TELECOMMUNICATIONS INDUSTRY**

By

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ABSTRACT

The telecommunications business in Ghana has grown rapidly during the previous three decades. Thus, it is critical to establish effective communication among key stakeholders and consumers. This study's main purpose is to design a strategic framework for managing consumer and stakeholder interest in Ghana's telecommunications industry. Pragmatic research philosophies were used to support quantitative and qualitative research methods. Inductive and deductive research methods were utilised to collect data from 421 respondents for analysis, interpretation, and discussion. Awareness raising, discourse, education, training, capacity development, relevant operational information, implementation and monitoring are important communication strategies. The study found that most consumers and key stakeholders are unaware of telecommunications interests. However, those few stakeholders aware of telecommunications interests claim the communication strategies are not well managed. National Communications Authority, telecommunications service providers, and the Ministry of Communications oversee telecommunications interests. A lack of effective communication resources, insufficient information, and poor service quality are some of the challenges key stakeholders and consumers face in managing communication interests. In addition to properly defined communication channels, regular interaction, the development and implementation of a communication plan, regular feedback, open and thorough engagement, and effective involvement of stakeholders and consumers in the formulation and implementation of communication policies, the findings revealed are means of improving communication interest. The study developed a strategic communication plan to be adopted by the key stakeholders and consumers. The study also employed theories that formed a solid foundation for the study.

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CHAPTER ONE

BACKGROUND AND ORIENTATION

1.1 INTRODUCTION

Communication is an important strategic measure and forms the basis for effective policy formulation and dissemination (Uka, 2014; Luthra & Dahiya, 2015). Due to its importance in management, many organisations have hired communication experts to manage information flow to and from organisations. In the contemporary business environment, there is a need to ensure that communication within and outside an organisation is effective, which is a vital component of corporate management (Husain, 2013). Akilandeswari, Kumar, Freeda and Kumar (2015) posit that communication is the determining factor for the success or failure of organisations and governments. This calls for careful assessment of every communication effort that is made. Effective communication rests on the ability of communicators to identify all players in the communication chain and select appropriate communication channels to liaise with them. Organisations, policymakers and implementers can structure their communication processes to enable the sender to receive appropriate and reliable feedback from the receiver. Effective listening is a key strategy for effective communication among individuals, groups or organisations.

Norouzi, Shabak, Embi and Khan (2015) indicate that communication in the 21st-century corporate world is a complex phenomenon due to the diverse background and needs of stakeholders. Ineffective and ambiguous communication strategies among stakeholders impede the growth and development of any industry (Bourne, 2010). Welch and Jackson (2007), furthermore, point out that proper communication is an effective tool employed by organisations to engage internal and external stakeholders to achieve organisational objectives effectively. According to Welch and Jackson (2007) and Bourne (2010), the realisation of the importance of communication has propelled industry players to devise mechanisms to engage stakeholders and manage stakeholder expectations successfully. Ackermann and Eden (2011), and Jainendrakumar (2016), furthermore,

posit that it is strategically important to identify and manage stakeholders and their communication needs accurately.

The telecommunications industry of Ghana carries high volumes of communication creating favourable grounds for different stakeholder groups, as well as consumers. There are many competing interests in the industry, that should be identified and addressed accordingly. Every stakeholder and consumer has an interest, especially when it comes to communication. These communication interests should be carefully analysed and managed to reduce disagreement in the industry. The management of the stakeholder communication interests in the industry are confronted with some challenges, which have been identified and addressed in this study, in order to promote smooth communication processes in the industry.

From the above perspective, the communication interests of stakeholders of the telecommunications industry of Ghana, of which consumers is an important group, have been investigated in this research. The improvement and increase in investments in the industry have attracted many players and interest groups to the industry. Government and private organisations, as well as individuals, have played important roles in shaping the policy dimensions and service delivery in this industry. The activities of the industry affect and are affected by the number of public and private institutions and individual consumers in the country, broadening the stakeholder base of the industry. It must be noted that every stakeholder in the Ghanaian telecommunications industry has particular interests and aspirations. Stakeholder interests are not static but dynamic. Key players in the industry include the regulator of the telecommunications industry, the environmental protection agency, the telecommunications service providers and consumers. These stakeholders and more specifically consumers, have high communication interests, which should be carefully managed to avoid unnecessary tension in the industry. The increase in the number of stakeholder groups and public and private interests in the activities of the telecommunications industry in Ghana requires the formulation of effective and efficient communication strategies to meet the needs of all stakeholders, and more specifically consumers, in the industry.

1.2 BACKGROUND OF THE STUDY

The telecommunication industry in Africa has seen massive transformation in the areas of institutional reforms, investment, enhancement of quality of service and expansion of network coverage (Coban, Yigit, Kalkavan, Kizil & Seker, 2016). Mark, Williams, and Michael (2011) posit that institutional reforms in this industry in Africa have liberalised the market and strengthened the regulatory agencies, resulting in the provision of telecommunication services to more than 50% of rural communities in Africa in 2009, as well as a reduction in service charges. Schoentgen and Gille (2017) indicate that there has been a huge investment by the Telecom Multinational Enterprises (T-MNE) in Africa's telecommunication industry from 2000–2015 in the form of acquisition of new licenses and acquisition of existing local operators.

The expansion in the telecommunications industry in Africa has a positive relationship with economic growth in sub-Saharan African countries (Lee, Levendis & Gutierrez, 2011). However, Darma and Ali (2016) indicate that, though investments in the telecommunications industry have a positive relationship with economic growth, the effects are not significant unless the investments are significantly huge to propel economic growth. The telecommunications industry has become an integral component in this modern society, with greater influence on economic growth and development. The industry in the 21st century is becoming the backbone of business growth and development across the globe. Sharif (2017) summarises the importance of the industry as the blood flow of every modern economy, which drives economic productivity and growth rate.

Arthur and Arthur (2017) indicate that there has been tremendous growth in the telecommunications industry, especially in the areas of mobile phone ownership in many developing countries, including Ghana. The industry contributes significantly to the growth and development of the Ghanaian economy (Atsu, Agyei, Darbi & Adjei-Mensah, 2014). It has also transformed the social lifestyles of many people in Ghana.

The Government of Ghana has, over the years, made several efforts to formulate and implement policies and projects to develop the infrastructure in the telecommunications industry to bridge the telecommunications divide between urban and rural Ghana. Some of these policies include the

rural telecommunications network expansion policy, construction of the base and provision of the masts of telecommunications facilities to connect the underserved and unserved rural communities, as well as the nationwide coverage expansion policies (Williams, 2011; Dogbevi, 2010; Haggarty, Shirley & Wallsten, 2002).

The key objectives of these policies are:

1. To promote rapid development and deployment of the telecommunications infrastructure in all districts of Ghana.
2. To strengthen the institutional and regulatory framework for the management of the telecommunications industry of the country.
3. To promote the utilisation of telecommunications in all sectors of the Ghanaian economy.

A typical example of the projects undertaken by the government in the telecommunications industry includes the Voltacom project, which sought to bridge the telecommunications gap between urban and rural areas (Ghana News Agency, 2004). The Volta River Authority implemented this project, using fibre optics to widen the telecommunications network. Ghana News Agency (2010a) also indicates a national gateway monitoring system project connected in 2010 by the Ministry of Communication through the National Communication Authority (NCA). This project is designed to accelerate the development of mobile telephony in Ghana and to create an enabling environment for the delivery of affordable information communication technology services.

1.3 STATEMENT OF THE PROBLEM

Many sectors of society have been affected by the telecommunications business, which has drawn numerous stakeholders (Rahul, 2016). The contributions of the telecommunications sector to Ghana's economy have increased public and private interest in the industry's activities and operations (Eshun, 2019). Through effective communication, it is vital to encourage the deepening of alliances among stakeholders such as employees, investors, customers, civil society groups, mass media, regulators, elected officials, ministries, departments, and agencies.

Total stakeholder support offers outstanding leverage that opens up market prospects, enhances profitability, fosters goodwill, promotes and deepens collaborations, and reduces industrial issues. Van Riel (2012) emphasizes that attaining entire stakeholder support is not always possible and requires a long-term engagement from all industry actors. A vital technique that encourages entire stakeholder support and commitment is the effective management of communication interests among stakeholders, notably from the perspective of the industry's regulator (Oates & Dodds, 2017). To minimize policy implementation difficulties in the Ghanaian telecommunications industry, the stakeholders must be routinely engaged, and information and policy direction must be properly shared.

However, there is little or no explicit regulation concerning the deployment of strategic communication in the Ghanaian telecommunications sector, which opens the door to an influx of communication issues among providers, regulators, and customers. It results in exploitation, ethical problems such as the misuse of a dominating position, misleading communication and spam or unwanted electronic communication, and poor network service quality (National Communications Authority, 2017).

To maintain an efficient flow of information, it has become important for the leaders of the telecommunications sector to engage all stakeholders on a regular basis (Luoma-aho, 2015). According to Adeyinka, Ajiboye, Emmanuel, and Wojuade (2007), Rasila and Mudau (2012), and PricewaterhouseCoopers (2012), the telecommunications industry is expanding at a faster rate, but it is having trouble communicating its policies and regulatory measures to all of its stakeholders. Nimako, Azumah, Donkor, and Veronica (2010) performed a study to measure customer satisfaction and discovered that Ghanaian customers lack knowledge regarding the operations and duties of telecommunications businesses. Nanevie (2012) also notes that, despite the fact that government regulations have a significant impact on the operations of telecommunications services in Ghana, consumers and civil society organizations are unaware of these regulations due to inadequate or ineffective means of disseminating information to all stakeholder groups.

The absence of clear policy direction in Ghana's telecommunications industry makes it difficult for players to communicate effectively. Poor communication between industry stakeholders has been

a key contributor to industrial discontent and outrage from civil society organizations, communities, and state institutions.

There are no well-defined communication strategies in the telecommunications industry; consequently, there is a need to increase communication between stakeholders and customers to successfully satisfy their communication interests. The Ghanaian telecommunications industry lacks a well-defined strategic communication plan to secure the absolute cooperation and commitment of all its stakeholders. The study will thus establish a framework for a strategic communication plan for the telecommunications sector - based on the research questions and field data gathered - as part of the policy implications and recommendations that it will put forward. This strategic communication strategy will be more realistic and may be utilized to manage the communication interests of telecommunications sector stakeholders.

1.4 GENERAL AIM OF THE STUDY

The purpose of this study is to develop a strategic framework for managing communication interests among stakeholders and consumers in the Ghanaian telecommunications industry. The study set out to examine the various communication interests among stakeholders and consumers in the industry and how these interests influence effective communication in the industry. The study seeks to identify and explain the communication interests of stakeholders and consumers in the industry.

1.5 RESEARCH QUESTIONS, OBJECTIVES AND HYPOTHESES

The research questions and objectives are stated in the Table below.

Table 1.1: Research questions and objectives for the study

RESEARCH QUESTIONS: QUALITATIVE PHASE	
Stakeholders	Which stakeholder communication strategies exist in the Ghanaian telecommunications industry?
	How is the communication interests of the stakeholders in the Ghana telecommunications industry managed?

	How are communication challenges faced by stakeholders in the Ghanaian telecommunications industry managed?
	How can stakeholders in the Ghanaian telecommunications industry assist with improving stakeholder communication?

RESEARCH OBJECTIVES: QUANTITATIVE PHASE	
Stakeholders	To determine if there is a relationship between communication strategies and improved communication efficiency and effectiveness.
	To determine if there is a relationship between challenges perceived and improved communication efficiency and effectiveness.
Consumers	To determine if there is a relationship between challenges perceived and communication strategies used among consumers in the Ghanaian telecommunications industry.

1.5.1 Research questions for Stakeholders

The primary research question for the study is: What are the effective means of managing stakeholder communication in the Ghanaian telecommunications industry? This question seeks to find answers to strategies that can be employed by stakeholders (excluding consumers) to improve communication processes and manage communication challenges confronting the stakeholders in the industry.

The secondary research questions seek to qualitatively explore effective means of managing stakeholder communication in the Ghanaian telecommunications industry. The study seeks to answer the following secondary research questions qualitatively.

Secondary research question 1: Which stakeholder communication strategies exist in the Ghanaian telecommunications industry?

Secondary research question 2: How is the communication interests of the stakeholders in the Ghana telecommunications industry managed?

Secondary research question 3: How are communication challenges faced by stakeholders in the Ghanaian telecommunications industry managed?

Secondary research question 4: How can stakeholders in the Ghanaian telecommunications industry assist with improving stakeholder communication?

1.5.2 Research objectives and hypotheses for Stakeholders

The research objectives for this phase of the study seek to quantitatively evaluate effective means of managing stakeholders' communication interests in the Ghanaian telecommunication industry. The study's objective is concentrated on investigating strategies that can be employed by stakeholders to improve communication processes and to manage challenges confronting the stakeholders when communicating in the telecommunication industry.

The study sought to quantitatively achieve the following research objectives related to stakeholders in the Ghanaian telecommunications industry:

Research objective 1: To determine if there is a relationship between communication strategies and improved communication efficiency and effectiveness.

Research objective 2: To determine if there is a relationship between challenges perceived and improved communication efficiency and effectiveness.

Promoting effective management of communication interests among stakeholders and customers requires effective strategies that enhance the flow of information between them. There must be the application of a cogent and consistent approach to purposefully achieve the overall objectives of communication among all relevant stakeholders (Hallahan, Holtzhausen, Van Ruler, Verčič & Sriramesh, 2007). Communication strategies enable stakeholders and consumers to develop a feasible communication framework to consolidate all the communication needs and enhance the inclusiveness of communication interests. Key communication strategies that promote communication effectiveness include awareness creation, traffic communication, implementation/monitoring, appropriate feedback and regular consultations. Hypotheses are based

on the conceptual literature on strategies for effective communication. The hypotheses have been developed based on the purpose of the study and the problem statement.

Primary Research Hypothesis 1: There is a relationship between communication strategies and improved communication efficiency and effectiveness

Primary Research Hypothesis 2: There is a relationship between challenges perceived and improved communication efficiency and effectiveness

Research Hypotheses for Stakeholders

Hypothesis 1: Awareness creation relates to improved communication efficiency

Hypothesis 2: Traffic communication relates to improved communication efficiency

Hypothesis 3: Public information systems relates to improved communication efficiency

Hypothesis 4: Appropriate feedback relates to improved communication efficiency

Hypothesis 5: Regular consultation relates to improved communication efficiency

Hypothesis 6: Promotion of stakeholder alignment relates to improved communication efficiency

Hypothesis 7: Personal stakeholder challenges relates to improved communication efficiency

Hypothesis 8: Regulatory challenges relates to improved communication efficiency

Hypothesis 9: Awareness creation relates to improved communication effectiveness

Hypothesis 10: Traffic communication relates to improved communication effectiveness

Hypothesis 11: Public information systems relates to improved communication effectiveness

Hypothesis 12: Appropriate feedback relates to improved communication effectiveness

Hypothesis 13: Regular consultation relates to improved communication effectiveness

Hypothesis 14: Promotion of stakeholder alignment relates to improved communication effectiveness

Hypothesis 15: Personal stakeholder challenges relates to improved communication effectiveness

Hypothesis 16: Regulatory challenges relates to improved communication effectiveness

1.5.3 Research objective and hypotheses for Consumers

The study sought to quantitatively achieve the following research objective related to consumers in the Ghanaian telecommunications industry:

Research objective 3: To determine if there is a relationship between challenges perceived and communication strategies used among consumers in the Ghanaian telecommunications industry.

Research Hypotheses for Consumers

Hypothesis 1: Awareness creation relates to NCA regulator challenges

Hypothesis 2: Traffic communication relates to NCA regulator challenges

Hypothesis 3: Public information systems relates to NCA regulator challenges

Hypothesis 4: Appropriate feedback relates to NCA regulator challenges

Hypothesis 5: Regular consultation relates to NCA regulator challenges

Hypothesis 6: Stakeholder alignment relates to NCA regulator challenges

Hypothesis 7: Implementation and monitoring relate to NCA regulator challenges

Hypothesis 8: Awareness creation relates to personal stakeholder challenges

Hypothesis 9: Traffic communication relates to personal stakeholder challenges

Hypothesis 10: Public information systems relates to personal stakeholder challenges

Hypothesis 11: Appropriate feedback relates to personal stakeholder challenges

Hypothesis 12: Regular consultation relates to personal stakeholder challenges

Hypothesis 13: Stakeholder alignment relates to personal stakeholder challenges

Hypothesis 14: Implementation and monitoring relates to personal stakeholder challenges

Hypothesis 15: Awareness creation relates to electronic communication and work challenges

Hypothesis 16: Traffic communication relates to electronic communication and work challenges

Hypothesis 17: Public information systems relate to electronic communication and work challenges

Hypothesis 18: Appropriate feedback relate to electronic communication and work challenges

Hypothesis 19: Regular consultation relate to electronic communication and work challenges

Hypothesis 20: Promotion of stakeholder alignment relate to electronic communication and work challenges

Hypothesis 21: Implementation and monitoring relate to electronic communication and work challenges

Hypothesis 22: Improved communication relates to NCA regulator challenges

Hypothesis 23: Improved communication relates to personal stakeholder challenges

Hypothesis 24: Improved communication relates to electronic and work challenges

1.6 RESEARCH METHODOLOGY

The methodology and techniques employed by the study are summarised below. The methodology discusses the approaches, techniques, procedures and instruments used by the researcher to achieve the study's objectives. The main sections under methodology include research philosophy/paradigm, research approach, study method employed that underpins the study, research design, sampling techniques, sample size determination, data collection methods, ethical consideration and data analysis. The study employed a quantitative-qualitative mixed-method approach, which is discussed in more detail in Chapter 5.

1.6.1 Research paradigm/philosophy

Based on the research questions and research objectives, the study utilised pragmatism as a research paradigm. The application of ontology enabled the study to uncover the association between the truth that the study seeks to reveal and reality. The study examined two key dimensions of ontology: objectivism and subjectivism. The principle of epistemology assisted the study in differentiating between true and false knowledge, provided a framework for proper interpretation and application of pragmatism in the study and overall context upon which the research was undertaken. The research questions in the qualitative phase of the study are exploratory, while the research objectives in the quantitative phase of the study are descriptive/explanatory, and therefore are within range of and depict the characteristics of pragmatic research philosophies. More detail about the research paradigm is included in Chapter 5.

1.6.2 Research approach

The research approach employed was designed to help the study form relevant decisions on the research design, including techniques and procedures used in collecting adequate and reliable data for analysis, interpretation and discussion. Information on two major research positions and approaches, namely inductive and deductive reasoning and qualitative and quantitative research approaches, were reviewed in this mixed-method study.

The inductive reasoning and qualitative research approach of the study enabled observations concerning stakeholder communication in the telecommunications industry in Ghana. The nature of the research questions in this study phase, made them fall within the pragmatic paradigm. The choice of inductive reasoning and qualitative research approach enabled the study to effectively understand the participants' views on stakeholder interests and how to improve such interests within the telecommunication industry of Ghana.

The pragmatism research philosophy also required the application of deductive reasoning and a quantitative research approach for effective data collection and analysis. These were adopted to objectively measure observations to enable the research to explain the variations in communication strategies among diverse stakeholders and consumers within the telecommunications industry in Ghana.

1.6.3 Research design

The selection of a research design was based on the ability of the design to provide a plan for data collection and procedures for data analysis and interpretation. The application of the deductive and inductive approach was used to collect data and to provide diverse views regarding the topic under investigation. The choice of the research philosophy and research approach informed the decision of the study to adopt the mixed-method approach so that more than one sample and strategy could be utilised to collect data on the topic. The parallel application of qualitative and quantitative methods (mixed-method) enabled the study to add context and reality to the numbers generated from the data.

1.6.4 Population of the study

Based on the research questions and research objectives, the population for the study consisted of stakeholders and consumers within the telecommunications industry. (The terms consumers and customers were used interchangeably in the text.) The target stakeholder group includes the National Communication Authority (NCA), Telecommunication Companies (MTN, AirtelTigo, Vodafone and Glo), Ministry of Communication, Legislature, Academic Experts in Telecommunication, Consumer Protection Agencies (CPAs), Environmental Protection Agency, and the Ghana Atomic Energy Commission. The study population was restricted to Accra because it has most of the stakeholders and consumers within the telecommunications industry in Ghana. The sample and sample size determination are discussed in more detail in Chapter 5.

1.6.5 Sample size determination

The design and selection of a reliable sample size for this study were based on the size of the target population, resources available for the data collection, and homogeneity or heterogeneity of the population. Given these, the qualitative phase of the study utilised 21 participants representing stakeholders, while the quantitative phases utilised 400 respondents, representing stakeholders and consumers respectively. These were determined using two different sample size formulas.

1.6.6 Sampling technique

Twenty-one participants' data were utilised for the qualitative phase of the study, using the non-probability sampling techniques of purposeful and convenience sampling. These techniques were useful, as they helped the study to gather relevant information through interviews. The study, furthermore, administered survey questionnaires on a one-on-one basis to 400 respondents in the quantitative phase of the study by employing the probability sampling technique, simple random sampling. A total of 100 respondents were the key stakeholders within the telecommunication industry, whilst 300 were customers of selected telecommunication companies in Ghana.

1.6.7 Data collection method

The data collection method for the study is composed of: sources of data collection, the instrument for data collection and the procedure for data collection. The main sources of data for this study include primary data. The study used qualitative (interviews) and quantitative (questionnaires) data collection methods. The use of quantitative data enabled the study to collect from a larger population within the study's period. The study benefited from the comprehensive, contextualised insights provided by qualitative data and the generalisable, exceptionally valid insights provided by quantitative data due to the utilisation of both quantitative and qualitative data collection methods.

1.6.8 Data analysis

The study utilised SPSS as software for the quantitative data analysis. The tools adopted included descriptive statistics, cross-tabulation, regression, and structural equation modelling. Tables and Figures, including frequency distribution, were utilised to provide a pictorial view of the results. The study used Nvivo to analyse the qualitative data into themes.

1.6.9 Reliability and validity

The reliability and validity of the quantitative data were carried out and results are included in Chapter 6. The qualitative data were also found to be reliable. A single coder with vast experience in qualitative coding using Nvivo was utilised to perform the coding to ensure the credibility of the qualitative data.

1.7 SIGNIFICANCE OF THE STUDY

The study provides evidence-based findings to broaden the understanding of the stakeholder communication interests in the Ghanaian telecommunications industries. The sustained growth and development of the industry in Ghana depend on adequate knowledge of the stakeholders' communication interests and on devising appropriate strategies to promote efficient communication among the stakeholders in the industry. The study scrutinises mechanisms that could be adopted to resolve communication challenges in the African telecommunications industry.

The study's findings provide a more comprehensive perspective for describing and evaluating the overall stakeholder communication interests in the telecommunication industry in Ghana. It is an effort towards assisting the industry's regulator in meeting the communication needs of stakeholders and consumers/end users who actively utilise the services and products of the telecommunication operators for information, research and business purposes.

The study allows the industry players to effectively manage the communication interests of the various stakeholders in the telecommunication industry. It provides a complete understanding of the dynamics of communication in the telecommunication industry in Ghana and addresses the gaps that must be fully addressed to improve communication among the stakeholders in the industry.

The findings of the research can be used by policymakers and implementers, such as the Ministry of Communications and the National Communications Authority (NCA). The study will provide insights and guidance on monitoring the telecommunication operators' operations and measuring the impacts of government policies on all the stakeholders through effective communication.

The study can also be helpful to stakeholders like investors, shareholders, employees, pressure groups, and consumer associations, among others, as they will have access to invaluable information to provide suggestions to improve performance in the telecommunication industry.

1.8 DELIMITATIONS OF THE STUDY

The scope of this study is defined based on the concepts underlying the study and the geographical coverage. In terms of the concept, the study's scope is limited to key stakeholders and consumers in the Ghanaian telecommunication industry; communication interests among the stakeholders and consumers; communication challenges among the key stakeholders and consumers; and measures for improving communication among key stakeholders and consumers. The terms consumers and customers were also used interchangeably in the text.

There are many stakeholder interests in the telecommunication industry in Ghana, such as job security, environmental compliance, profitability, payment of statutory taxes and levies, quality service delivery, and information flow, among others. The study aims to improve communication among stakeholders and consumers in the industry to enhance efficiency in the operations in the industry. However, the study limited its scope to the only communication interests based on the problem statement and the purpose of the study for effective analysis and interpretation. The study, therefore, limited its scope to how communication issues are addressed among the key stakeholders and consumers.

The scope is limited to stakeholders, including policymakers, legislators, regulators, telecommunication network service providers, telecommunication chamber, academics, and consumer protection agencies, as well as consumers/subscribers for practical analysis and discussion.

The geographical scope of the study will be limited to Ghana. It restricted itself to the Ghanaian telecommunication industry. Though telecommunication services and products are used in all sixteen regions of Ghana, it was not practically possible for the research to include respondents from every part of the country due to limited financial resources and time constraints. The study, therefore, restricted its scope to only the Greater Accra Region.

1.9 STRUCTURE OF THE STUDY

The study is structured into seven main chapters. The first chapter contains the introduction and background, problem statement, research questions, objectives and hypotheses. The second chapter presents information on the Ghanaian and telecommunications industry context. Chapter Three communication is presented in Chapter Four. Chapter Five contains the methodology of the study. Chapter Six presents the data analysis and results. Chapter Seven includes the summary, conclusions, policy implications and recommendations of the study, as well as suggestions for further research. It also provides a framework for stakeholder communication interests in the Ghanaian telecommunication industry.

1.10 CONCLUSION

The Chapter provides a comprehensive introduction to this mixed-method study by laying a strong case through the problem statement, research questions, objectives and hypotheses. As interest groups, stakeholders and consumers have been investigated separately; with stakeholders being subjected to a qualitative and quantitative phase in the study, and consumers to a quantitative phase only. For the stakeholder research, four research questions were formulated for the qualitative phase of the study, and two research objectives for the quantitative phase. For consumers, one research objective was put forward. For the stakeholder research, a total of 16 hypotheses, obtained from exploratory analysis, were identified and tested; while 24 hypotheses were identified and tested for consumers.

The concepts of *communication strategies* and *challenges perceived*, as well as *improved communication efficiency* and *effectiveness* were relevant for stakeholders, while *challenges perceived* and *communication strategies* were relevant to consumers. These concepts were included in the respective research questions and objectives. The sample consisted of 21 participants (stakeholders) and 400 respondents (stakeholders and consumers). A discussion guide was developed for the qualitative phase of the stakeholder research, while two survey instruments were developed for stakeholders and consumers respectively. Data were analysed through thematic analysis and structural equation modelling.

In conclusion, the Chapter indicates that communication is an important element in every economic sector. It involves transferring information from one person or institution, called the sender, to another person or institution, called the receiver. The communication process must be completed to improve its effectiveness. Effective communication effort relies on the completeness of the communication process, including appropriate feedback from the receiver to the sender. Ineffective communication is a pre-requisite for failure, while effective communication is a pre-requisite for organisations' profitability, growth and survival.

CHAPTER TWO

THE TELECOMMUNICATIONS INDUSTRY IN GHANA

2.1 INTRODUCTION

Chapter 2 presents information on the context of the study. The Chapter reviews the literature on the telecommunications industry in Ghana and the global telecommunications industry at large. The players in the Ghanaian telecommunications industry, including their respective roles, are discussed. The history and prospects of the industry are also addressed.

Telecommunications plays an important role in every country's economic growth and development. As such, the deployment of telecommunications infrastructure has significantly impacted the lifestyle of individuals and the business management of organisations in Ghana. Ghana, a democratic state in West Africa, is a formidable political, economic, cultural, and environmental pillar in the world today, bordered by countries such as Togo, Cote D'Ivoire, Burkina Faso and the Gulf of Guinea to the south.

The global telecommunications industry has received tremendous investment and expansion opportunities in the 21st century (Osei-Owusu, 2015; Moshi1, Mwakatumbula & Mitomo, 2013). Since the 1980s, the telecommunications industry in Africa has developed, expanded and improved its service delivery (Zahra, Azim & Mahmood, 2009).

Rajasekar and Rae (2013) note that approximately 1.2 billion telephone lines comprising 527 million in developing countries, and 692 million in developed countries, were fixed; and that 4.6 billion celluar, 667 million mobile broadband, 1.8 billion internet and 479 million fixed broadband services are currently in use. Ghana has experienced its fair share of development in telecommunications. There has been a massive improvement in the Ghanaian telecommunications industry since 1886. However, the growth and expansion after its independence have been phenomenal. As of 2015, data subscribers in the Ghanaian telecommunications industry stood at

18 million, with a penetration rate of 25.74% and mobile voice subscribers were estimated at 35 million in December 2015.

The telecommunications industry has played an important role in promoting economic growth and development in the world. The expansion and growth of the industry took place mainly due to the promotion and implementation of neoliberal globalisation. The main organisation in charge of streamlining the activities of the telecommunications industry is the International Telecommunications Union (formally called the International Telegraph Union).

2.2 OVERVIEW OF GLOBAL TELECOMMUNICATIONS

Telecommunications is the transmission of information over long distances for communication purposes. This transmission can be accomplished using both wired and wireless technologies. Telecommunications has become an important part of our lives in the modern era, as it connects people, businesses, and governments all over the world. Telecommunications has transformed how we communicate and share information, making it more accessible, dependable, and cost-effective. The global telecommunications industry is a vast and complicated ecosystem that allows information to be transmitted over long distances for communication purposes. Telecommunications has transformed how we communicate and share information by making it more accessible, dependable, and cost-effective.

2.2.1 The global context

The telecommunications industry has evolved over the years (Hui, 2012; Balbi, 2009). The industry's transformation intensified in the 1980s when developing countries began to develop, expand, and sustain their telecommunications infrastructure (Zahra *et al.* = 2009). The industry has grown tremendously, manifesting in the increase in demand for network infrastructure (Cheng, Tsyu & Hsiao-Cheng, 2003). According to Jin (2005), the global telecommunications industry has witnessed unprecedented transformation under neoliberal globalisation. Rajasekar and Rae (2013) state that the Middle-east is one of the regions that has recorded the highest growth in this sector (among the many players in the equipment delivery, service delivery and consumer industries)

over the past few decades. Societal communication has been boosted and improved through the provision of a strong technological foundation, ranging from cell phones to satellite communication (National Research Council of the United States of America, 2006; Boateng, 2004). The industry has increased citizen participation in national development by enabling people to contribute to developmental dialogue effectively, and telecommunications has become the backbone of national security through the provision of technology that gives superiority in disaster management, security, and exchange of important intelligence.

Telecommunications is a major ingredient and plays an important role in economic growth and development (Zahra *et al.*, 2009; Rahman, 1996). The telecommunications industry has dominated the service sector in many economies and has attracted huge foreign direct investment (FDI) into economies, especially in developing countries (Shakeel, Khan & Malik, 2012). A major source of government revenue comes from the direct income and taxes collected from telecommunications services providers (Lee *et al.*, 2011). There is an important correlation between telecommunications and growth in the gross domestic product (GDP), especially in developing countries (Sajjad, 2016; National Research Council of the USA, 2006; Jacobsen, 2003). Through telecommunications services such as the internet, messages and phones, businesses can reach out to a large group of markets in geographical areas far from the sites of their operations to market and sell their products and services (Parkes, 2011; Chavula, 2013).

The activities and operations of the international telecommunications industry are regulated by the International Telecommunications Union (ITU) (formally called the International Telegraph Union), an agency of the United Nations. The main tasks of the International Telecommunications Union include three main areas: radio communication, standardisation of the telecommunications industry and development of the telecommunications industry (International Telecommunication Union, 2002). The ITU is also responsible for developing global Information and Communication Technology networks. It is mandated to coordinate a shared global utilisation of the radio spectrum, promotion of international cooperation in assigning satellite orbits, improving telecommunications infrastructure in the developing world, establishing international standards to promote the seamless interconnection of different communications systems, promoting healthy competition in the global

communications sector and addressing global telecommunications challenges (International Telecommunication Union, 2002).

Rajasekar and Raee (2013) indicate that in 2009 the global telecommunications industry had 1.2 billion fixed telephone lines (527 million in developing countries and 692 million in developed countries): 4.6 billion cellulars, 667 million mobile broadband, 1.8 billion internets and 479 million fixed broadband services. The International Telecommunications Union (2018), furthermore, posits that in 2010, 1 991 million people worldwide used the internet, as against approximately 3.6 billion people who used the internet in 2017. Out of the 3.6 billion telecommunications users, 2.6 billion were in developing countries: 750 million (53% of the population) from China; 390 million (30% of the population) from India; 250 million (76% of the population) from the United States of America; 130 million (61% of the population) from Brazil; 48 million (26% of the population) from Nigeria; 30 million (54% of the population) from South Africa; 16 million (15% of the population) from Ethiopia; and 9.8 million (35% of the population) from Ghana. In 2017 the youth led the expansion of the telecommunications industry with about 80% in 104 countries representing 830 million young people who are actively using internet services. Similarly, in 2017 internet utilisation in-house in Europe, America, Commonwealth of the Independent States, Asia and Pacific, Arab States, and Africa represented 84.2%, 70.4%, 65.3%, 48.1%, 47.2% and 18%, respectively. Table 2.1 below presents statistics about the global telecommunications industry.

Globally, telecommunications services include wireless and wired providers, communications devices, and telecommunications and satellite resellers. Key players in the telecommunications industry include wireless internet services, fixed telephony services, broadband internet services, satellite telecommunications, general communication equipment, telecommunications resellers, broadcast communications equipment, telecom infrastructure equipment, cellular/mobile telephone services, direct-to-home services, and other satellite and telecommunications resellers (The Business Research Company, 2022). The worldwide telecommunications market was worth USD 1,657.7 billion in 2020 and USD 1,707.96 billion in 2021 (Grand View Research, 2020). The industry is projected to generate about USD 2,467.01 billion in revenue in 2028, with a growth rate of 5.4%. Mobile data services represented roughly 33% due to expanding demand for smartphones and high-speed broadband. In 2020, about 8 billion mobile subscribers existed globally, with 60%

using smartphones. However, private telecommunication businesses have more subscribers than state-run firms. The 5G networks are being installed to improve data bandwidth and reduce latency (Grand View Research, 2020). Internet use has increased, especially during the outbreak of COVID-19. In 2021, approximately 4.9 billion people (representing 63% of the global population) consumed the internet. Approximately 2.9 billion people (96% in developing countries) do not even have internet access, and 390 million people completely lack mobile broadband coverage (International Telecommunication Union, 2022).

Table 2.1: Global Information and Communication Technology developments per 100 inhabitants (2010, 2015 and 2020)

	2010	2015	2020
Mobile-cellular telephone subscriptions	76.6	98.2	105
Active mobile-broadband subscriptions	11.5	45.1	75
Fixed-broadband subscriptions	7.6	11.5	15

Source: International Telecommunication Union (2018); International Telecommunication Union (2020).

Stone (2015) studied the evolution of the telecommunications industry and its players to determine its competitiveness. The intense technology improvement drives the industry's evolution, which benefits telecommunications users. Consumers, regulators, telecommunications providers, and financial institutions were mentioned by Stone (2015) as key stakeholders in the global telecommunications industry though regulators are the most powerful and influential stakeholders. Al-Mamary, Shamsuddin, and Aziati (2016) researched the Yemeni telecommunications industry and found that the growth in the industry has grown stakeholders' number and interests. Providers, employees, and subscribers are industry players. Hui (2012) also undertook in-depth research on the telecommunications industry and noted its growth and change. The 1990s saw the most transformation and growth. The analysis shows that the telecom industry's transition fostered integration, healthy competition, and economic progress.

Venkatram (2012) conducted research and found that the growth of the telecommunications industries in India and China depends on the number of consumers and the volume of purchases

they make, the level of technology innovation in the telecommunications operators' operations, and policies, strategies, laws, and regulations. The study concluded that technology innovation is directly linked to telecommunication income, but that the number of consumers has no direct relation.

Karlsen, Graee, and Massaoud (2008) researched the role of trust in a construction project's interaction with its stakeholders. This investigation included semi-structured in-depth interviews. The results from the interviews highlighted the favourable influence that trust has on the relationship's interactions and communications. The results demonstrate that trust plays a crucial role in establishing well-functioning relationships on a construction site.

2.2.2 The African context

In recent years, the African telecommunications market has experienced fast growth, particularly with the advent of built-in services such as mobile money. Africa's telecommunications industry is the world's fastest-growing mobile market. There are approximately 82.2 million mobile customers in Africa, with Nigeria's telecommunications market being the fastest growing at an annual rate of over 100% (von See, 2022; Africa Business Page, 2022; Campos, 2019). Over the past few decades, the African telecommunications industry has been transformed by the spread of services by multinational corporations, active competition, deregulation, and privatisation, but governmental ownership still plays a large role (Clò, Florio & Rentocchini, 2020). It resulted in substantial international investment in Africa's telecommunications sector, leading to the expansion of the continent's infrastructural base to facilitate the digital economy and increase its economic prospects (Karombo, 2021). Africa is experiencing a significant influx of super-telecommunications service providers with the power and capability to secure capital to support the industry's expansion (Benson, 2022).

The expensiveness of mobile devices and Internet connectivity is one of Africa's greatest obstacles. Consequently, players in the telecommunications industry should use investments in digital technologies to generate value for businesses and individuals. The investment must generate economic growth, expand opportunities, and enhance the lives of Africans (Goworek, 2021).

Redefining customer engagement; focusing on improved communication; implementing advanced network infrastructures, such as software-defined networks, alternate connectivity, cybersecurity, and zero-touch networks; and investing in new technology and network infrastructure will help the industry improve its performance.

Ogbo, Okechukwu, and Ukpere (2012) investigated the amount and rate of innovation in Nigeria's telecommunications industry. The analysis found that the industry's level of innovation has increased, despite the lack of direct growth factors. Consumers, operators, regulators, top management, shareholders, sponsors/directors, and the government are key stakeholders. The study found that the government is developing telecommunications infrastructure. Ajiboye, Ajiboye, Adu, and Wojuade (2007) studied stakeholders' perceptions of the mobile communication system in Nigeria. Consumers were found to be the key stakeholders. The survey also found that the telecommunication business fosters economic growth, especially in rural regions, offers job opportunities, reduces and prevents crime, and helps rural residents manage their time.

2.2.3 The Ghanaian context

Amofo-Yeboah (2007) opines that the Ghanaian telecommunications industry has recorded tremendous growth since its independence in line with the growth in the telecommunications industry in Africa. The number of subscribers to telecommunications services and products has increased substantially. The industry has seen expansion due to the huge investment made by the government over the years. According to Anyen (2015), the investments in the industry aimed at improving technological innovation started in 1975, which saw the injection of USD 76 million to modernise, improve and expand Ghana's telecommunications service. During this period, the industry used antiquated Plain Old Telephone Service (POTS) Lines for voice and terrestrial microwave networks for radio and television. It resulted in limited international voice, video and data communications, with no private participation. The Ministry of Communication (2018b) indicates that to improve local and international voice, video and data communications in Ghana, the government constructed an artificial satellite into space at Kuntunase in 1981.

Allotey and Akorli (1999) also indicate that the telecommunications infrastructure saw a boost in 1987 through the rehabilitation, improvement, and expansion of the switching network and rural telecommunications services. To improve the telecommunications infrastructure, the government in 1990 liberalised, privatised and established an independent regulatory body (Osei-Owusu, 2017; Anyen, 2015; Addy-Nayo, 2010; Frempong, 2002). The telecommunications industry's deregulation saw the National Communications Authority (NCA) establishment in 1997. The government restructured the telecommunications industry through the Accelerated Development Programme (ADP), Haggarty, Shirley and Wallsten (2002), Amofo-Yeboah (2007), Dankwah (2013), and Addy-Nayo (2010) posit that the ADP was ultimately aimed at achieving telephone density between 1.5 and 2.5 lines per 1 000.

The telecommunications industry has also seen rapid growth in market competition across the mobile and internet sectors. Ghana has installed national fibre backbone networks, and there have been many submarine fibre cables brought into Ghana, which has increased international bandwidth and low cost for broadband access. Lancaster (2018) indicates that there have been major developments in this industry, including the construction of 1 200 km of metro-net fibre by Google; the establishment of the Accra Digital Centre; the completion of the Eastern Corridor telecommunications project; commencement of the Western Corridor telecommunications project; the launching of the Ghanasat 1 satellite in 2020; launching of the fifth international submarine fibre optic cable; and the setting up of the Ghana Information Communication Technology Council.

Sankaran, Naillon, Nguyen, Chang, Hilde and Chadwick (2011) note that the telecommunications industry has witnessed an increase in mobile phone penetration. Quist (2017) posits that data subscribers increased to 18 million in 2015, representing a penetration rate of 25.74%; mobile voice subscribers increased from 34.4 million in November 2015 to 35 million in December 2015. At the telecommunications operators' level, MTN dominated the market in 2015 with an increase of 16 million in November 2015 to 16.25 million in December 2015, representing 43.45% in voice calls and 47.89% in data subscriptions of the market share. Vodafone Ghana also increased its mobile voice subscribers from 7,526,704 in November 2015 to 7,612,059 in December 2015, representing a market share of 21.74% voice and 18.39% of data, respectively. Similarly, Tigo's

voice subscribers increased from 4 786 094 in November 2015 to 4,850,034 in December 2015, representing a market share of 13.85% for voice subscriptions. Tigo also grew in mobile data subscriptions from 2,692.510 in November 2015 to 2,732.863 in December 2015, representing a market share of 15.16%. Airtel increased its voice subscribers from 4,684,429 in November 2015 to 4,796,645 in December 2015, representing a market share of 13.7%.

The telecommunications industry has grown in both voice subscription and data. The National Communications Authority (2018) indicates that the total number of mobile voice subscriptions in the Ghanaian telecommunications industry was 39,367.236 in June 2018. This number increased by 1.83% to 40,089,004 in July 2018, with a total penetration rate of 137.38% for July 2018. In July 2018, total mobile data subscriptions in the Ghanaian telecommunications industry were 22,044,592, with a penetration rate of 75.54%. On the individual operators' level, MTN's voice subscriptions in July 2018 were 19,073.969 representing a 1.83% increase from June 2018's figure of 18 730 632, which gave MTN a market share of 47.58% in June 2018. For mobile data subscription, MTN recorded 12,694,486 and a market share of 57.59% in July 2018 (National Communications Authority, 2018).

The number of persons who subscribed to Vodafone's mobile voice jumped with a percentage increase of 2.05%, from 9,342,496 in June 2018 to 9,534,186 in July 2018. The market share for Vodafone in July 2018 was 23.78%. For Vodafone mobile data, the total number of subscriptions was 4,041.889 in July 2018, representing a market share of 18.34%. Within the same months under review, Tigo's voice subscriptions increased by 3.48%, from 5,158,375 in June 2018 to 5,337,668 in July 2018, with a market share of 13.31%. The mobile data subscription for Tigo in July 2018 was 2,718,524, representing a market share of 12.33%. Glo's voice subscriptions also increased by 1.27%, from 743,026 in June 2018 to 752,477 in July 2018, representing a market share of 1.88%. Data subscription for Glo was 270,478 in July 2018, representing a market share of 1.23% but the number of voice subscriptions for Airtel reduced by -0.04% from 5,392,707 in June 2018 to 5,390,704 in July 2018, representing a market share of 13.45%. Airtel's mobile data subscriptions in July 2018 were 2,319,215, representing a market share of 10.52% (National Communications Authority, 2018). In 2021, total mobile voice subscription was estimated at 496,449,281 composed of 94,959,007, 109,365,760, 9,875,948, 282,248,566 for AirtelTigo, Vodafone, Glo, and MTN

Ghana respectively (National Communications Authority, 2022a). The mobile data subscription for 2020 also stood at 279,748,519 people. The share of AirtelTigo, Vodafone, Glo, and MTN Ghana stood at 45,084,873, 38,867,675, 4,508,796, 191,287,175 respectively (National Communications Authority, 2022b)

For fixed telephony, there are only two operators in the industry - Vodafone and Airtel. The total subscriptions for fixed operators in July 2018 were 280,096. Vodafone and Airtel recorded a total subscription of 270,151 and 9,945, respectively, in July 2018 (National Communications Authority, 2018).

2.2.4 Global Telecommunications Infrastructure

Pigeon posts were established in Persia and Syria around the 6th century BC (McIntosh, 2012; Levi, 1992). Robert Hooke and French Chappe brothers invented the acoustic telephone and optical telegraphs in 1700 and 1792, respectively (Wavelink Communications, 2018). Samuel B. Morse and Alfred Vail revolutionised the telecommunications sector in 1838 with the Morse code (McIntosh, 2021; Arkadin Collaboration Services, 2007). The electric telegraph was marketed in 1839. In 1866, the first transatlantic telegraph wire was constructed (Wavelink Communications, 2018). Bell invented the telephone in 1876, and in 1893 and 1901, wireless telegraphy and the radio were invented by Nikola Tesla and Guglielmo Marconi, respectively (Arkadin Collaboration Services, 2007). Phillip T. Farnsworth invented the TV in 1927, and Mauchly and Presper built the first commercial computer in 1946 (Kunene, 2018). Martin Cooper invented the cellphone in 1973, Iridium Company Limited invented hand-held satellite phones in 1998, and VoIP Internet telephony made Internet phone conversations possible in 2003 (Galaxy, 2018).

2.2.5 Aspects of the Global Telecommunications Industry

The global telecommunications industry is a vast and complicated ecosystem that allows information to be transmitted over long distances for communication purposes. The global telecommunications industry is a dynamic and rapidly changing sector, fueled by technological advances, changing consumer behaviour, and regulatory frameworks. The industry is expected to

grow and transform further, with new technologies and business models emerging and businesses adapting to remain competitive and meet consumer demand.

The aspects of the telecommunications industry refer to the various components, factors, and considerations that shape and define the industry. These aspects cover a wide range of industry dimensions, including infrastructure, technologies, applications, regulations, and challenges. Understanding the various aspects of the telecommunications industry is important for stakeholders such as companies, governments, regulators, and consumers because it allows them to navigate the industry's complexities and make informed decisions. Stakeholders can gain insights into the industry's opportunities and challenges, trends and drivers, and best practises and innovations by analysing its various aspects. Some key industry aspects are presented below.

Infrastructure: Telecommunications infrastructure is the industry's backbone, consisting of physical components required for information transmission such as cables, routers, switches, and satellites. Infrastructure investment is a critical driver of industry growth, with governments and private companies both investing heavily in network construction and maintenance.

Wired technologies: Wired technologies, such as fiber-optic cables, are used to transmit information over long distances. They provide fast and dependable internet connections, making them ideal for businesses, homes, and other organisations. Fiber network deployment is accelerating globally as businesses seek to meet rising demand for high-speed broadband.

Wireless technologies: Wireless technologies, such as mobile networks, enable communication without the need for physical connections. They are popular among consumers because they provide a wide range of services such as voice calls, messaging, and internet connectivity. 5G technology adoption is expected to transform the wireless industry by enabling new use cases and business models.

Internet: The internet is an essential component of telecommunications because it provides a platform for accessing information and communicating with people all over the world. It is a network of interconnected computers that transmit data using the internet protocol. Governments

and businesses are investing in expanding access and improving connectivity, as the internet has become a critical infrastructure.

Application: Telecommunications has spawned a plethora of applications that allow people to communicate and share information in a variety of ways. Email, social media, video conferencing, and instant messaging are a few examples. As consumers demand more personalised and intuitive ways of communicating, applications are becoming increasingly important.

Regulation: Telecommunications is a heavily regulated industry, with governments and regulatory bodies establishing quality, safety, and security standards. These regulations ensure that consumers have access to, affordable, and safe telecommunications services. Companies face new challenges and opportunities as regulatory frameworks evolve to keep up with technological advancements.

Cybersecurity: As the telecommunications industry becomes more reliant on digital technologies and connected devices, cybersecurity is becoming a growing concern. Data breaches and denial of service attacks are examples of cyber threats that can have serious financial and reputational consequences. Businesses are investing in cybersecurity to safeguard their networks, data, and customers.

Data privacy: As businesses gather and use enormous amounts of customers' personal data, data privacy is yet another crucial issue in the telecommunications sector. Regulations governing data privacy, like the General Data Protection Regulation (GDPR) and California Consumer Privacy Act (CCPA), are changing the industry more and more by requiring businesses to put in place effective data protection measures and give customers more control over their data.

Globalisation: Businesses in the telecommunications sector now operate across multiple nations and provide services to customers from all over the world. Opportunities and challenges are both presented by globalisation, as businesses must navigate various regulatory frameworks, cultural differences, and market dynamics.

Innovation: In the telecommunications sector, innovation is a major force behind growth and competitiveness. In order to create new technologies and business models that can satisfy the changing needs of consumers and businesses, companies are investing in research and development. As businesses look to capitalise on one another's strengths and capabilities, innovation is also opening up new opportunities for alliances and collaborations.

2.2.6 Global Telecommunications Trends

Technological developments, changes in consumer behaviour and preferences, alterations in regulatory policies, and other aspects that are influencing the industry are all examples of global telecommunications trends. Global telecommunications companies can spot fresh chances for development and innovation, foresee obstacles and market disruptions, and decide on a course of action to stay competitive. Additionally, as new applications and business models that were previously impractical are made possible by advancements in telecommunications technologies and services, trends in the global telecommunications industry may also have an impact on other industries and sectors. For instance, the rollout of 5G networks may open up new use cases like remote surgery and autonomous vehicles, which may have a big impact on the healthcare and transportation sectors. The following trends have recently been influencing the global telecommunications industry:

2.2.6.1 5G Networks

After 2G, 3G, and 4G networks, "5G" stands for "fifth generation" wireless technology, which is the most recent advancement in mobile networks. To support a greater variety of applications and use cases, 5G networks are intended to be faster, more responsive, and more dependable than their forerunners (Attaran, 2021). The faster data transfer rates of 5G networks are one of their main benefits. Download speeds on 5G networks can reach 10 Gbps, which is 100 times faster than those on 4G networks (Eze, Sadiku & Musa, 2018). Users can now stream high-quality video more quickly and buffer-free while downloading large files. Lower latency, or the amount of time it takes for data to travel between a device and the network, is another benefit of 5G networks. Compared to 4G networks, which have a latency of 30–50 milliseconds, 5G networks have a

latency of about 1 millisecond. New use cases like real-time gaming, remote surgery, and autonomous vehicles may be made possible by reduced latency (Eze, Sadiku & Musa, 2018; Yang, Xiao, Xiao, & Li, 2019). Having more capacity and being able to support more devices concurrently than 4G networks, and 5G networks. This is because more data can be transmitted and received simultaneously using higher frequency bands and sophisticated antenna technologies. However, deploying 5G networks can be expensive and time-consuming because they also demand sizable investments in infrastructure and spectrum. In addition, the 5G networks' higher frequency bands have shorter ranges and are more prone to interference, which may necessitate the deployment of additional infrastructure to ensure adequate coverage (Wild, Braun & Viswanathan, 2021).

2.2.6.2 Internet of Things (IoT)

The network of physical objects, including machines, cars, buildings, and other things, that are embedded with connectivity, software, and sensors to collect and exchange data is known as the Internet of Things (IoT) (Munirathinam, 2020). Although the idea of IoT has been around for a while, recent technological developments have made it more approachable and useful. Our interactions with the outside world are changing as a result of the proliferation of connected devices, which also opens up new use cases and business opportunities. Data collection and analysis from a variety of sources is one of the main advantages of IoT (Alam, 2018). Processes can be optimised, productivity can be increased, and new services and products can be developed using this data. For instance, IoT sensors can track the location and condition of goods in a supply chain to enhance logistics or monitor machinery in a factory to spot maintenance issues before they become a problem. The development of smart homes and cities, where connected devices and systems can be used to control and automate various functions like lighting, heating, and security, is another area where IoT is having a significant impact. IoT sensors can be used in smart cities to monitor traffic and air quality, use energy more efficiently, and increase public safety (Khayyam, Javadi, Jalili & Jazar, 2020).

2.2.6.3 Cloud Services

Computing resources, software, and applications that are delivered via the internet from remote servers as opposed to being installed and used locally on a user's device are referred to as cloud services. Platform-as-a-service (PaaS), infrastructure-as-a-service (IaaS), and software-as-a-service (SaaS) offerings are examples of cloud services. Scalability is one of the major benefits of cloud services (Rashid, Zeebaree & Shengul, 2019). Without requiring them to make additional hardware or infrastructure investments, cloud providers can quickly and easily scale their services up or down to meet the changing needs of their customers. As a result, companies can access the resources they require whenever they require them without having to pay the high costs associated with maintaining and managing their own IT infrastructure. Furthermore, because cloud services can be accessed from any device with an internet connection, they can enable remote work and collaboration. The potential for cloud services to lessen the environmental impact of IT operations is another advantage. To optimise their data centre infrastructure and lower energy use and carbon emissions, cloud providers can take advantage of economies of scale. Cloud services can also aid in lowering the overall carbon footprint of the IT industry by providing shared resources and removing the requirement for each company to maintain its data centres (Malik & Om, 2018; Escamilla-Ambrosio et al., 2018).

2.2.6.4 Virtualization

It is possible to create a virtualized version of a computer system, such as an operating system, server, network, or storage device, through the process of virtualization (Rashid, Zeebaree & Shengul, 2019). The software used to create this virtual version, a virtual machine monitor, enables the running of multiple virtual instances of the system on a single physical machine. The behaviour of each virtual instance is identical to that of a distinct physical machine, complete with its own operating system, programmes, and resources (Rashid, Zeebaree & Shengul, 2019; Salagrama & Bibhu, 2022). Increased flexibility and scalability, better resource utilisation, and lower hardware costs are all advantages of virtualization. Through virtualization, businesses can run multiple applications on a single server, eliminating the need for additional hardware and consuming less energy. Additionally, it allows for the dynamic allocation and de-allocation of virtual instances in

response to demand, allowing for a more effective use of computing resources. By isolating applications and data within their own virtual environments and facilitating quick backup and recovery in the event of a failure, virtualization can also improve security and dependability (Almutairy, Al-Shqeerat & Al Hamad, 2019).

2.2.6.5 Artificial Intelligence

Artificial intelligence (AI) is the term used to describe a machine's capacity to carry out operations that normally call for human intelligence, such as problem-solving, learning, and judgement (Wang, Liu & Dougherty). The creation of algorithms and computer programmes that can analyse massive amounts of data, spot patterns, and base predictions or decisions on those patterns is how artificial intelligence (AI) is realised (Wang, Liu & Dougherty, 2018; Tabesh, 2022). Natural language processing, speech and image recognition, predictive analytics, and autonomous systems are just a few of the many uses for AI. By enabling quicker, more accurate decision-making and lowering costs, it has the potential to completely transform a variety of industries, from healthcare and finance to manufacturing and transportation. The potential for bias and discrimination in decision-making, as well as the effects on employment as machines become more capable of performing tasks that have traditionally been performed by humans, are some of the major ethical and societal concerns raised by AI (Shneiderman, 2020). To ensure that AI is developed and implemented in a safe, responsible, and equitable manner, careful consideration and management are necessary (Leslie et al., 2021).

2.2.7 Challenges in the Global Telecommunications Industry

Ameen and Willis (2016) undertook a study using a desk review to examine the current and anticipated challenges in the telecommunications industry in the Arab world (Qatar, Kuwait, United Arab Emirates, Bahrain, Saudi Arabia, Oman, Jordan, Lebanon, Tunisia, Egypt, Libya, Iraq, Sudan, Morocco and Yemen). The study focused on the regulatory environment in the telecommunications industry in the countries mentioned above. The data used for analysis were gathered from annual companies' reports, reports from governments and regulatory agencies and journal articles on mobile usage. Ameen and Willis (2016) found that the main challenges in the

telecommunications industry include: inadequate mobile wireless broadband infrastructure, difficulty in developing a transparent, effective and efficient regulatory environment to improve the infrastructural network and the utilisation of ICT; high government control in the industry affecting the ability of the industry to swiftly develop and implement the regulatory framework and improve competitiveness in the market; lack of healthy competition in the industry disadvantaging consumers due to high influence and ownership of the governments in the market; poor harmonisation of the spectrum band in the industry; high prices of mobile handset and mobile broadband service.

Kumar (2017) studied the challenges in the telecommunications sector in India. The author points out the main challenges as confronting expensive smartphones for smooth, good Internet browsing, download of music, documents and videos; translating content on the internet into local languages; excessive interference of the government in the telecommunications industry, and creating high bureaucracy and slowing down innovation; difficulty in maintaining the adequate spectrum, and inability to adopt new technologies and techniques to serve customers effectively.

A study by Afande (2015) in Kenya determined the challenges that confront and hinder the ability of the telecommunications industry to achieve growth. The study used a descriptive research design and included internal stakeholders of the telecommunications industry: Safaricom limited, Airtel Kenya limited, Orange, and Essar telecommunications limited. With selected respondents and the application of questionnaires and simple descriptive statistics to analyse the data, the study found that challenges in the Indian telecommunications industry can be grouped into customer-based challenges (including customer loyalty and changes in consumers' tastes and preferences); and industry-based challenges (such as inter-firm competition and changes in technology). The study also found that these challenges have a high influence on the growth and survival of the telecommunications industry and must, therefore, be effectively managed. Possible solutions to these challenges were also proposed.

2.3 TELECOMMUNICATIONS INDUSTRY IN GHANA

The rising demand for mobile and internet services has spurred significant growth in the Ghanaian telecommunications sector in recent years. Four major companies dominate the market: MTN, Vodafone, AirtelTigo, and Glo Mobile, which together account for most of the nation's mobile subscribers (Kessey, 2019). Ghana has a comparatively high rate of mobile penetration, with more than 40 million mobile subscribers by 2021. The industry has also seen sizable investments in infrastructure, such as the introduction of 4G and 4G+ networks, which have improved access to digital services and enabled faster internet speeds. A National Communications Authority was established to oversee the industry, and policies were introduced to encourage investment in broadband infrastructure, among other actions the government has taken to encourage competition and innovation in the sector. The need to address issues with service quality, network coverage, and affordability, particularly in rural areas, remains a challenge (Saarnisaari et al., 2020).

Telecommunications plays an important role in every country's economic growth and development. As such, the deployment of telecommunications infrastructure has significantly impacted the lifestyle of individuals and the business management of organisations in Ghana. Ghana, a democratic state in West Africa, is a formidable political, economic, cultural, and environmental pillar in the world today, bordered by countries such as Togo, Cote D'Ivoire, Burkina Faso and the Gulf of Guinea to the south. The global telecommunications industry has received tremendous investment and expansion opportunities in the 21st century (Osei-Owusu, 2015; Moshi1, Mwakatumbula & Mitomo, 2013). Since the 1980s, the telecommunications industry in Africa has developed, expanded and improved its service delivery (Zahra, Azim & Mahmood, 2009).

Rajasekar and Rae (2013) note that approximately 1.2 billion telephone lines comprising 527 million in developing countries, and 692 million in developed countries, were fixed; and that 4.6 billion cellularity, 667 million mobile broadband, 1.8 billion internet and 479 million fixed broadband services are currently in use. Ghana has experienced its fair share of development in telecommunications. There has been a massive improvement in the Ghanaian telecommunications industry since 1886. However, the growth and expansion after its independence have been

phenomenal. As of 2015, data subscribers in the Ghanaian telecommunications industry stood at 18 million, with a penetration rate of 25.74% and mobile voice subscribers were estimated at 35 million in December 2015.

The telecommunications industry has played an important role in promoting economic growth and development in the world. The history of the industry has it that the Persian Emperor, Cyrus, was the first emperor in the world to formalise communication. The Roman, Egyptian, and Chinese kingdoms followed with communication inventions. The modern telecommunications industry has undergone a gradual transformation since the invention of the acoustic telephone by Robert Hooke in the latter part of the 1700s. The commercialisation of the telegraph was started by Sir William Fothergill Cooke and Sir Charles Wheatstone in 1839. Alexander Graham Bell invented telephony in 1876, and the commercialisation of the telephone began in 1880. The expansion and growth of the industry took place mainly due to the promotion and implementation of neoliberal globalisation. The main organisation in charge of streamlining the activities of the telecommunications industry is the International Telecommunications Union (formally called the International Telegraph Union).

2.3.1 Ghanaian Telecommunication Industry ecosystem

A variety of stakeholders, including network operators, equipment vendors, content providers, regulators, and consumers, make up the Ghanaian telecommunications industry ecosystem. The network operators, who offer the services and infrastructure necessary for connectivity and communication, are at the centre of the ecosystem. MTN, Vodafone, AirtelTigo, and Glo Mobile, Ghana's four main network providers, compete for customers by providing a variety of voice, data, and value-added services like mobile money and digital content (Mattern & McKay, 2018).

Along with network operators, the ecosystem also consists of equipment suppliers who offer the hardware and software required to support telecom infrastructure, including base stations, switches, and routers. These vendors include both regional businesses that offer support and maintenance services as well as major international players like Nokia, Ericsson, and Huawei. As they provide digital content, applications, and services that run on top of the telecommunications

infrastructure, content providers are another crucial part of the ecosystem. Social media platforms, news websites, and music streaming services are a few examples of content providers in Ghana (Demuyakor, 2020).

In the Ghanaian telecommunications industry ecosystem, regulators are also crucial because they are in charge of ensuring fair competition, defending consumer rights, and encouraging innovation and investment. Ghana's primary regulatory body, the National Communications Authority (NCA), is in charge of issuing licences, establishing standards, and enforcing laws pertaining to telecommunications. As they utilise and profit from the services offered by network operators, equipment vendors, and content providers, consumers are the ecosystem's final component. Through their purchasing choices, feedback, and advocacy for laws that support access and affordability, consumers can also influence the ecosystem (Union, 2020; Mattern & McKay, 2018).

2.3.2 Challenges in the Ghanaian Telecommunications Industry

The Ghanaian telecommunications industry is confronted with many challenges that impede its ability to develop and grow effectively. These challenges have prevented the telecommunications industry from having massive impacts on the Ghanaian economy in terms of job creation, revenue to the state, contribution to GDP and the undertaking of corporate social responsibilities. The challenges in the telecommunications industry include undermining the effective operations of operators; and the ability of the operators to deliver good quality and efficient services to their customers and to increase their capital base. Mustapha (2015) points out that operators in the telecommunications industry have indicated their concerns about the high and numerous tax payments they make to the government.

Lokko (2016) reveals that in 2014 and 2015, MTN Ghana paid GHC 605 million, GHC 675.6 million and GHC 605 million, respectively, as well as GHC 43.7 million as regulatory fees to the NCA. High expenditure was incurred on equipment due to breakdown and damages resulting from an unstable and irregular power supply, box fraud, high fibre cuts and thefts of tower accessories and fibre optic cables, affecting the quality and efficient delivery of telecommunications services. Macro-economic challenges in the country also pose a serious threat to the survival of the

telecommunications sector. Bruce (2016) indicates that major macro-economic challenges include rapid depreciation of the Ghanaian cedi, which increases import bills, and high energy costs, which account for almost 60% of the operating cost in the telecommunications industry. Lokko (2016) also points out that the telecommunications sector in Ghana is facing challenges accounting for the inability of many operators to break even. Most of them are recording losses due to the high cost of operations which negatively affects the operators to recover their investments. The industry is also faced with intense and sometimes unhealthy competition.

2.3.3 Institutional arrangement of the Telecommunications Industry in Ghana

The telecommunications industry's institutional arrangement in Ghana includes regulatory institutions and stakeholders who have a major influence on the industry. They include institutions that have direct and indirect supervision in this industry. Below is a summary of the institutional arrangement in the telecommunications industry.

Ministry of Communication: The Ministry of Communication (MoC) was established by the Civil Service Law, 1993 (PNDCL, 327), as amended by the Civil Service (Amendment) Act, 2001 (Act 600) and Executive Instrument (EI) 6, 2003. The MoC was established to ensure the convergence of communication technologies to promote a viable integrated national development process within a global setting. The main mandate of the MoC is to initiate and develop national policies that will promote cost information and communication infrastructure and services to promote economic development. The MoC exists to initiate and formulate ICT policies that meet the needs of the Ghanaian people; to coordinate, monitor and evaluate the efficiency and effectiveness of the performance of the communication sector; to develop appropriate regulations to protect consumers and to stimulate competition in the communication sector, and to build capacity for the ICT sector. The MoC, furthermore, provides overall policy direction for the telecommunications industry (Ministry of Communication, 2018b).

Ministry of Environment, Science and Technology and Innovation (MESTI): MESTI was first created in 1993 as the Ministry of Environment and Science and later dissolved in 2006. In 2009 it was re-established as the Ministry of Environment, Science and Technology (MEST). In 2013,

it was renamed the Ministry of Environment, Science, Technology and Innovation (MESTI) under Executive Instrument (EI) 1 Civil Service (Ministries) Instrument, 2013. MESTI provides policy directions on the environment and gives the overall policy direction on the environmental effects of telecommunications operations in Ghana (Ministry of Environment, Science, Technology and Innovation, 2018).

Parliament of Ghana: The current Parliament of the Republic of Ghana was established on 7 January 1993. The main function of the Parliament is law-making, and it enacts legislation to regulate the telecommunications industry in Ghana. The Parliament of Ghana, furthermore, assumes oversight responsibility over the Ministry of Communication (Parliament of Ghana, 2018).

National Communications Authority: The National Communications Authority (NCA) was established in 1996 by the National Communications Authority Act 1996, Act 524, as amended by the National Communications Authority Act, 2008, Act 769 to regulate information communication technology in Ghana. The NCA facilitates innovative, reliable and sustainable communication solutions to meet stakeholders' expectations. It transparently regulates the telecommunications industry to promote fair and sustainable competition, stimulates innovation, encourages investment, protects stakeholders' interests, and facilitates universal access to quality communication services for national development. It is the sole institution that licenses and grants authorisation for players in the industry to operate communication systems. It is also the responsibility of the NCA to ensure fair competition among licensed operators. The organisation also ensures that the services and products provided by the telecommunications operators meet national and international standards and legislation and that it also protects the interests of the consumers in the industry through education. The NCA, furthermore, authorises type approval, enforces equipment standards and ensures that international frequency is effectively coordinated (National Communications Authority, 2018).

Ghana Chambers of Telecommunication (GCT): The GCT is the association of mobile network operators in Ghana that was registered as a limited by guarantee-company in 2010. It was inaugurated in 2011 to spearhead advocacy in the industry and to direct telecommunications

policies, legislations and regulations. It also does research to help improve operations in the industry (Ghana Chamber of Telecommunication, 2018).

Consumer Protection Agency (CPA): The CPA represents consumers by soliciting the support of policymakers to enforce, manage and measure basic standards in the industry. It advocates and safeguards the interest of telecommunication consumers. It also engages in public education and awareness campaigns to educate consumers on their rights (Consumer Protection Agency, 2018).

National Commission for Civic Education (NCCE): The NCCE was established in 1993 under Article 231 of the Constitution of the Republic of Ghana and the National Commission for Civic Education Act, 1993 (Act 452) to promote and sustain democracy and to inculcate in the Ghanaian citizenry, the awareness of their rights and obligations, through civic education. It undertakes public education on the rights and responsibilities of the citizens (National Commission for Civic Education, 2018).

Information Service Department (ISD): It is the main public relations outfit of the government both at home and abroad. The ISD disseminates government policies and regulations on the telecommunications industry to the public (Information Service Department, 2018).

Environmental Protection Agency (EPA): The EPA is the leading Ghanaian public institution that protects and improves the environment in Ghana. The EPA ensures that air, land and water are properly managed so that future generations can access a cleaner, healthier world. The EPA ensures environmental safety in the activities and operations of telecommunications providers (Environmental Protection Agency, 2018).

Ghana Atomic Energy Commission (GAEC): The GAEC was established by Act 204 of 1963. It is the main and only institution in Ghana responsible for all matters relating to peaceful uses of atomic energy and radiation protection. It monitors the radiation effects of telecommunications operations (Ghana Atomic Energy Commission, 2018).

2.3.4 Operators in the Ghanaian Telecommunications Industry

This section of the study provides information on the telecommunications industry in Ghana. The section discusses the various operators in the industry. It also highlights the number of voice and data subscribers for telecommunications operators in Ghana.

MTN: Sankaran *et al.* (2011) note that MTN (Mobile Telephone Network) has its headquarters in South Africa. The MTN Group is present in 22 countries in Africa, Asia and the Middle East. According to Zaney (2018), MTN registered as a company limited by liability in 1994 as Scancom Limited under the trade name, Spacefon. It started operations in 1996 with only 20 employees (14 expatriates and 6 Ghanaians). This company was registered and licensed to operate the Global System for Mobile Communications (GSM) system in Ghana. The company expanded its coverage to Kumasi and Obuasi and Takoradi, Bibiani, Tarkwa and Cape Coast in 1997 and 1999, respectively. Scancom went through a change of ownership and trade to Areba, and in 2006 the MTN Group assumed ownership of Scancom, and the trade name changed to MTN Ghana.

Currently, MTN Ghana employs 1,919 employees (685 direct employment, 57 contract staff and 1 177 third-party contractors). Zaney (2018) and Business World (2016) point out that, as of the beginning of 2016, the total infrastructural investments made by MTN Ghana are estimated at USD 2.5 billion, with an additional USD 96 million budgeted to be invested (USD 62 million in the traditional network, USD 16 million in information technology and USD 18 million Long-Term Evolution (LTE) deployment to boost 4G mobile communication). Sankaran *et al.* (2011) indicate that MTN Ghana has more than half of the total mobile network subscribers in Ghana. MTN Ghana subscribers increased from 2.5 million in 2006 to approximately 17 million subscribers as of December 2016.

MTN Ghana also has strong data services such as a 2G and 3G network and well-equipped data centres with state-of-the-art facilities and technology. It developed the West African Cable System (WACS) and had more than 5 000 kilometres of fibre in 2016. MTN Ghana also operates Mobile Money.

TIGO: TIGO is operated as Millicom Ghana Limited (TIGO). It is owned by a Swedish company called Millicom. It was the first mobile telecommunications service in Ghana, registered in 1991 and started operations in 1992 (Millicom, 2018). For the past 26 years, TIGO has consistently delivered excellence in mobile and data communication services to Ghanaians. It is recognised as one of Ghana's most affordable telecommunications providers (Joy Business, 2015). Using the NCA definition of the active subscriber as of December 2016, TIGO has more than 5 339 million mobile customers. The total number of employment created in Ghana is made up directly and indirectly of more than 670 people (Millicom, 2018). TIGO Ghana also provides insurance packages for its subscribers called the TIGO Insurance Plan.

Vodafone: Sankaran *et al.* (2011) note that Vodafone is the world's second-largest mobile telecommunications provider. Vodafone Ghana is the oldest telecommunications company in Ghana. It started in the colonial era and was later called the Post and Telecommunications Department of the Civil Service. In 1996 it was renamed Ghana Telecom, and the Government of Ghana owned it. The management of Ghana Telecom underwent two diversions. It was first diverted to G-Comm Limited and to a Norwegian management services company called Telenor Management Partners (TMP).

In 2008, the Government of Ghana sold 70% shares of Ghana Telecom to Vodafone Group PLC. The company initially operated fixed and mobile telecommunications services in Ghana. Since 2009, Vodafone Ghana has invested approximately USD 1 billion to improve its infrastructure in Ghana, excluding its acquisition price. It has a subsidiary company called Vodafone Wholesale, a wholesale telecommunications service provider dealing in fibre optic products and related services. Vodafone Wholesale was previously called the National Communications Backbone Company Limited (NCBC). Vodafone Ghana deals in data, voice, fixed line and mobile money services and employs approximately 3 400 Ghanaians.

Globally, Airtel is the sixth largest mobile telecommunications company. The parent company is from India. Its presence in Ghana was due to its acquisition of Zain Inc. in the latter part of 2010. Its operations are geared towards connecting communities across Africa by providing affordable, relevant and innovative mobile solutions to every individual (Airtel, 2018). Airtel also deals in a

money transfer service called Airtel Money and in mobile data services. It is mostly present in towns in Ghana.

Glo Mobile: Glo Mobile is a telecommunications company originating in Nigeria. It is a Nigerian company which commenced operations in Nigeria on 29 August 2003. Glo has a 9 800 km long submarine cable network laid under the sea to connect Ghana to West Africa and the world by using high-speed data and internet traffic (Ghana Investment Promotion Center, 2018). The submarine cable stretches from the United Kingdom to Nigeria. Glo Mobile started operations in Ghana in 2012. Its first initiative was aimed at attracting, maintaining and widening its market base with the "Reserve Your Number campaign" (Business Desk, 2012).

Expresso: Expresso is owned and operated by the Dubai company *Expresso Telecom Group*. Expresso was formerly Celtel Limited, which was established in Ghana in 1993. In 2003 the brand name was changed to Kasapa Telecom Limited (Ghana News Agency, 2010b). The brand name later changed again to Expresso after it was sold to Expresso Telecom Group, the Dubai-based operator (Bloomberg, 2018). Expresso operates mobile voice and data services. It also provides prepaid, voice-mail, data transmission, ISDN, internet and other wideband services, and it is the only telecommunications services provider in Ghana that uses a CDMA network. Ghana also has cell tower management companies in the telecommunications industry. These companies include the American Tower Company (ATC) Ghana, Eaton Towers Ghana Limited, and Helios Tower Ghana (HTG) Managed Services Limited.

American Tower Company (ATC) Ghana: ATC is an American company operating globally. The headquarters of ATC is in Boston, Massachusetts, with offices in many countries, including Ghana. ATC Ghana is the largest independent owner and operator of shared wireless infrastructure in the Ghanaian telecommunications industry. ATC Ghana deals in the provision of towers, in-building systems, power solutions and services to speed up network deployment in the industry. The company also operates by leasing space on towers, managing rooftops and customising collocation solutions through the utilisation of outdoor distributed antenna systems, in-building systems and other right-of-way options. ATC has a portfolio of more than 170 000 sites globally (ATC Tower Ghana Limited, 2018).

Eaton Towers Ghana Limited: Eaton Towers Ghana Limited was founded in 2009 and operated on the African continent. Eaton Towers Ghana Limited acquires, builds and leases shared infrastructure services on its tower sites to mobile operators in Ghana and Africa. According to Eaton Towers (2019), the Eaton Towers is a leading independent pan-African tower company with over 5 000 tower sites in five African nations: Ghana, Uganda, Kenya, Burkina Faso and Niger.

Helios Tower Ghana (HTG) Managed Services Limited: The company was formed in 2009 with the vision of dominating Africa's mobile markets by providing quality infrastructure in the telecommunications industry. The growth of Helios Tower was made possible through the acquisition of tower networks from mobile network operators. Helios Tower has also built its towers across many African countries (Helios Tower, 2018). In Ghana, HTG started operations in 2010 by acquiring 831 towers from Millicom.

2.3.5 Legal and policy framework of the Ghanaian Telecommunications Industry

ICT for Accelerated Development (ICT4AD) Policy: This policy was created in 2003 to help change Ghana's economy and society into a knowledge-based. It mapped Ghana's information society and economy through developing, implementing, and leveraging ICT (Ministry of Communications, 2016). This policy paper was developed with Vision 2020, GPRS I & II, and the Co-ordinated Programme for Economic and Social Development of Ghana in mind. The policy paper enables Ghana's socio-economic development in the rising information, knowledge, and technological age, which is dominated by knowledge-based economies (Republic of Ghana, 2003).

National Telecommunication Policy (NTP): Ghana's Ministry of Communications created this policy in 2005. The policy describes Ghana's ICT vision and mission. NTP defines the foundation for Ghana's telecommunications sector to fulfil international standards. The NTP aims to provide universal access to efficient and cost-effective telecommunications services such as telephone, internet and multimedia by promoting penetration of universal telecommunications services throughout the country (Government of Ghana, 2004). Though the policy's goals have not been

entirely accomplished, it has helped Ghana become an ICT society and economy since its beginning.

National Communication Authority Act, 1996, Act 524: This is a 1996 Act that established Ghana's National Communication Authority. Act 524 outlines the NCA's functions and objectives, as well as the Minister and the board's power. It gives the NCA the mandate to licence and regulate telecommunication providers. The Act also covers how diplomatic missions in Ghana run radio communication equipment, customer complaints, dispute settlement, and ministerial responsibility.

National Communication Authority Act, 2008, Act 769: This Act amended the 1996 Act that created the NCA due to developments in the worldwide telecommunications industry. The Act outlines the NCA's goals, powers, and duties. The NCA Board of directors' powers is also outlined. It outlines ministerial responsibilities and directives, NCA divisions, director-general, deputy directors, secretary, and staff appointments. It discusses the NCA's funding sources, expenditures, yearly reports, and audits. The Act's final section covers miscellaneous topics, which clarifies the Act's ambiguities.

National Information Technology Agency Act, 2008, Act 771: The Act gives the National Information Technology Agency the power to licence and regulate ICT in Ghana. The National Information Technology Agency ensures Ghana's ICT is efficient, high-quality, and meets national and international standards. The Act requires the National Information Technology Agency to develop and implement policies to ensure competitive and quality ICT markets.

Electronic Transactions Act, 2008, Act 772: This Act regulates electronic communications and their related transactions in the telecommunications industry.

Electronic Communication Amendment Act, 2008, Act 775: This Act controls electronic communications, broadcasting, electromagnetic spectrum use, and other business matters. The Act covers Ghana's electronic communications and broadcasting networks. The Act exempts the military and other security agencies, government sites, and personal use of electronic

communications and broadcasting services on vessels, aircraft, or automobiles. The Act requires the NCA to licence enterprises to operate electronic communications and broadcasting services for profit and to revoke licences from violators.

Electronic Communication Amendment Act, 2009, Act 786: This Act revised the Electronic Communications Act, 2008 (Act 775) to calculate a minimum rate for international inbound electronic traffic and other electronic affairs. This Act regulates electronic communications, broadcasting, the electromagnetic spectrum, and other electronic matters in the telecommunications industry. The Act requires telecommunications companies to charge their clients no more than the NCA's minimum rate.

Communications Service Tax Act, 2008, Act 754: This Act authorises the Ghana Revenue Authority to collect and account for Communications Service Tax (CST). Consumers who use Ghanaian telecom services pay the CST. Act 754's first section regulates CST. The Ghana Revenue Authority has authorised communications service providers to collect CST from consumers and report monthly to the Domestic Tax Revenue Division. The Communications Service Tax Act requires the Ghana Proceeds Authority to deposit all CST revenue into the Consolidated Fund.

Communications Service Tax (Amendment) Act, 2013, Act 864: The government also took the opportunity to use Act 769 to amend the *Communications Service Tax Act, 2008 (Act 754)*. By amending the *Communications Service Tax Act, 2008 (Act 754)*, the scope and coverage of the communication tax were clarified to enable effective calculation, collection and accountability of the revenue accruing from the tax.

2.3.6 Contribution of the Telecommunications Industry to the Ghanaian economy

The telecommunications industry contributes significantly to the growth and development of Ghana. The industry has created direct and indirect employment for a large portion of the Ghanaian population, which includes skilled and unskilled and technical and administrative staff. According to Teppah (2011), employment generated by the telecommunications industry from 2008 to 2010

is estimated at 6 000 full-time employees and more than 1.5 million indirect employment positions in the retailing of telecom accessories and scratch cards.

The telecommunications industry contributes to the Ghanaian economy through the payment of corporate income tax, a national fiscal stabilisation levy, people taxes, product taxes and property taxes. Appiah (2016) points out that the telecommunications operators in Ghana have paid approximately GHC 4.92 billion as taxes and other statutory fees to the government from 2011 to 2016. According to Quist (2015), the companies in the telecommunications sector in Ghana contributed GHC 1.04 billion and GHC 1.05 billion in 2013 and 2014, representing 6.9% and 5.4% of the total tax revenues in Ghana for 2013 and 2014, respectively.

The National Communications Authority (2017) indicates that the size of the ICT sector (of which telecommunications is part) measured in gross value added (GVA) in 2010, 2011, 2012, 2013 and 2014 were estimated at GHC 1,411,176,528, GHC 1,674,440,420, GHC 2,069,651,848, GHC 2,292,015,319 and GHC 2.5 billion respectively. This represents percentages of 3.1%, 2.8%, 2.8%, 2.5% and 2.2% in 2010, 2011, 2012, 2013, and 2014 respectively. Kelvin (2015) acknowledges that the total tax payment by MTN to the Government of Ghana in 2014 stood at GHC 605 million. Teppeh (2011) points out that about 9.2% of the total government revenue mobilised in 2010 came from the telecommunications industry, contributing approximately 2% to the Ghanaian Gross Domestic Product. The investment from the telecommunications industry in the Ghanaian economy stood at more than USD 300 million in 2010. The Gross capital formation of the telecommunications industry from 2010 to 2015 stood at GHC 5,508,705.17. Appiah (2016) furthermore hints that telecommunications companies from 2011 to 2016 invested GHC 3.82 billion in the Ghanaian economy in the form of capital expenditure.

The telecommunications industry also supports the economy of Ghana through corporate social responsibility activities (Abukari & Abdul-Hamid, 2018). In 2014 the MTN Ghana Foundation implemented 95 projects. These projects are estimated at GHC 15.5 million. They have impacted the lives of more than 213 000 people directly and indirectly on the lives of 2.5 million people (Kelvin, 2015). The Vodafone Foundation has also undertaken major corporate social responsibilities in health care, education and charity works (Vodafone Ghana, 2018), while Tigo

Ghana has undertaken corporate social responsibilities in the educational sector, specifically the Shelter for Education.

The youth population is also instrumental in the telecommunications industry. This industry provides direct and indirect employment to many people, creates income for households, increases productivity, improves social ties, and contributes to economic growth and development through the injection of foreign direct investment and payment of taxes to support the economy's running. Against this background, the industry has also intensified disaster management, security, and the exchange of important intelligence.

2.4 CONCLUSION

Ghana has a rich political history and is the icon of democracy in Africa. The country has passed through a series of development challenges since its independence. The onset of a political and military coup destabilised the economy and Ghana's social and political development. The history of the telecommunications industries globally and, more specifically in Ghana, was extensively reviewed in the Chapter. The review posited that there had been an incredible and impressive development in the industry. The invention of smartphones, high internet connectivity and satellite communication applications are major developments in the industry. The review indicated that the Ghanaian telecommunications industry is vibrant and is growing steadily. Against this background, the prospect of the Ghanaian telecommunications industry is bright. The review also indicated that the institutional and regulatory mechanisms in the industry are robust.

There are many vibrant institutions and agencies whose activities directly or indirectly affect the operations and management of the Ghanaian telecommunications industry. The National Communications Authority, the regulatory agency in the industry, is well structured and positioned legislatively to regulate the activities of telecommunications service providers. The activities of the operators of the industry are effectively supervised and monitored against enacted regulations and policies.

The Ghanaian telecommunications industry has received massive investment in infrastructure and human capital over the years. The investment in the industry has propelled it to grow steadily over the past twenty years. The industry has also contributed substantially to the economic growth and development of Ghana through the creation of direct and indirect employment, payment of taxes to the government, performance of corporate social responsibilities in the areas of education, health, social services and livelihood improvement, and provision of telecommunications services to business, homes and government agencies. However, the Ghanaian telecommunications industry is also confronted with challenges that can derail the gains made over the years. Some of these challenges include overlapping institutional functions and cumbersome policies and regulations impeding the effective operations of the industry.

CHAPTER THREE

THEORETICAL FRAMEWORK

3.1 INTRODUCTION

The Chapter includes the study's theoretical framework, which sets the foundation for the literature review. It discusses theories related to the study and supports the explications of the findings towards the end of the research. It, furthermore, presents definitions of stakeholders and consumers, types of stakeholders, and stakeholder management. It also details the various forms of stakeholder theories relevant to the study. Theories play a significant role in shaping concepts and ideologies in research. Some relevant theories that can help achieve the objectives of this multi-disciplinary study are extensively discussed. The history behind each of the theories is also addressed. The relevance of these theories is reviewed and discussed concerning the studied topic. The theories cut across the relevant academic disciplines, with specific reference to communication management and business management.

The Chapter also presents and discusses definitions of communication, the history of communication, elements of communication, and types of communication. It, furthermore, reviews the literature on the flow of communication in an organisation, and strategies and barriers to effective communication. Research similar to the topic under study have also been included. The empirical literature discusses the studies conducted by experts and scholars related to the topic.

It is important to have effective interactions with stakeholders and consumers. Communication is a two-way process that requires the sender and the receiver to be on the same page to receive the consent and support of stakeholders on implementing policies and strategies. In this context, communication can be categorised into formal and informal communication. Some experts also group communication into internal and external communication and written and oral communication. Communication occurs among internal stakeholders, such as employees, management, and shareholders, and between the organisation and external stakeholders, such as

regulatory agencies and the organisation's management. In most instances, communication among internal stakeholders takes the form of memos and verbal instructions, while communication between the organisation and external stakeholders takes the form of official letters.

Effective communication requires the selection of appropriate channels of communication to achieve the intended outcome of the communication process. Some of the major channels include written (paper) means, verbal (speaking) means, electronic means, visual means, radio channels, and television channels. Theories are significant in research, especially in the social sciences, because they provide a basis for analysis and application in practice to solve societal and developmental dilemmas (Osanloo & Grant, 2016).

Communication is a strategic organisational tool employed to disseminate information among stakeholders. It, therefore, makes the study of communication vital in any management style employed in an organisation. Communication has become the engine of effective management in the 21st century. It is one of the concepts that have been extensively researched over the past few decades. It has varied definitions provided by many scholars and experts. It is the pillar of any effective engagement or negotiation in the corporate world.

Communicating is a process, and a break in any part of the process will result in poor and ineffective communication, and the sender will not achieve its purpose. The key processes include the following: the development of a clear and accurate message; identifying the appropriate sender for the message; encoding the message, thereby giving it meaning; selecting the appropriate medium to transfer the message, and ensuring that the receiver effectively decodes the message and sends feedback to the sender to complete the communication process.

The application of speech to communicate continued until 30 000 years ago, when symbols such as cave paintings, petroglyphs, pictograms, and ideograms were introduced into communication (Mudasser, Latif, Sharif & Ayub, 2012). Lambert (2018) points out that writing as a form of communication was invented in approximately 3200 BC in Iraq and Egypt. By 2000 BC, 1200 BC, and 600 BC, writing dominated communication, using symbols to signify words in Egypt, China, and the Americas, respectively (Nguyen, 2017). Galaxy (2018) points out that in 150 BC, Palybius

converted Greek alphabetic into numeric characters to easily send messages using coded torch smoke signals.

3.2 META-THEORY

3.2.1 Systems theory

Systems theory is critical in research and has been identified as the meta-theory for the study. The systems theory is founded on Aristotle's holism, which states that knowledge is gained through knowing a complete concept, not simply its parts. The Austrian biologist Karl Ludwig von Bertalanffy pioneered systems theory in the 1920s by criticising Newtonian closed systems and linear cause-and-effect in his book, "Organismic System Theory" (Anderson, 2016). In 1954, Karl Ludwig von Bertalanffy and his colleagues Kenneth Boulding, Anatol Rapoport, and Ralph Gerard founded the Society for General Systems Research to promote the concept of the System Theory (Adams, Hester & Bradley, 2003; Boulding, 1956). Biel (2018) indicated that ecologists accepted systems theory around 1971. Karl argues that a system cannot be reduced to individual pieces working independently; instead, the whole must be investigated with an emphasis on the interrelationships between the parts (Von Bertalanffy, 1968). The key scholar who has written extensively on systems theory is Von Bertalanffy (1950, 1968, 1973) in "General System Theory: Foundations, Development, Applications", "An outline of general system theory" and "The meaning of general system theory". Other scholars who have helped shaped the theory are James Grier Miller (the Living Systems Theory); Mihajlo D. Mesarovic, Wayne, A. Wymore, and George J. Klir (Mathematical Systems Theory); Norbert Wiener, Ross, W. Ashby, and Jay Forrester (Cybernetics); Talcot Parsons, Walter F. Buckley, and Niklas Luhmann (Social Systems Theory); and Ervin Laszlo and Mario Bunge (Philosophical Systems Theory).

Systems theory views an organisation, concept, or phenomenon as a system with integrated pieces that must be coordinated for efficiency and effectiveness. The theory is mostly used in Biology and Medicine and is based on the fact that living things are made up of complex parts forming systems. Living things survive when their parts and systems work together efficiently. Drack and Schwarz (2010) and Adams (2011) and Adams (2012) suggest that systems theory is applied to

management and other disciplines to help researchers analyse complex, transdisciplinary social concerns. This study's application is enhanced by the systems theory's nature which allows researchers and practitioners to explore phenomena holistically (Mele, Pels & Polese, 2010).

In the 1980s and 1990s, management science extensively used systems theory (Straub, 2013). It provides a framework for investigating occurrences from a broader perspective. According to Weinberg (2001), systems theory investigates reality from an integrated and interacting perspective, where the many characteristics of the individual components are examined as a whole. According to systems theory, all elements are rationally connected to achieve a certain objective (Chikere & Nwoka, 2015). A phenomenon can be carefully examined and comprehended if all of its elementary components are studied simultaneously. It is hard to comprehend the reality of a phenomenon while examining its constituent parts individually. Ng, Maull, and Yip (2009) and Leighninger (1978) define a system as an entity, a coherent whole having a boundary to distinguish internal and external elements and specify input and output.

This study uses systems theory to examine communication interests in the telecommunications industry in Ghana. The application of the systems theory enhances the use of a holistic approach to stakeholder communication interest management through group alignment and analysis of complicated communication challenges. Chikere and Nwoka (2015) and Straub (2013) explain that a system's interconnected parts must be coordinated for efficiency and effectiveness. This study used systems theory instead of specific stakeholders. In this study, the systems theory is employed to view all telecommunications stakeholders and their communication interests as interconnected components. An extensive review of stakeholders' communication interest management create difficulties because the communication interests of the stakeholders are related. When analysing the communication interests in telecommunications, it is vital to include operators, regulators, legislators, and consumers in the analysis. The study was able to examine the communication interests of the stakeholders comprehensively to gain a deeper insight into them. It is critical to identify and comprehend the functional and efficient processes that affect communication in the telecommunications industry. Systems theory focuses on the overall system and studies discrete elements as a whole. All stakeholders work together to achieve a common communication goal

using the systems theory. By evaluating the basic concerns affecting stakeholders, communication interests may be more useful, accurate, and efficient in the industry.

However, systems theory presents challenges in real settings, since not all parts have equal influence or contribution (Basile & Caputo, 2017; Berman, 1996). Determining the effective means of promoting communication interests for all stakeholders in the telecommunications industry is difficult. Some communication strategies and challenges will affect some stakeholders more than others. Given Ghana's ambiguous political, social, and economic system, it is hard to analyse all communication interests as a whole. Periodic assessment is needed to improve the management of stakeholders' communication interests in the industry. Chapter 7 includes further references to systems theory and its relevance to the research questions and objectives of the study.

3.3 THEORIES

3.3.1 Stakeholder theory

According to Goyal (2020) and Basile and Caputo (2017) in "Strategic Management: A Stakeholder Approach", Dr F. Edward Freeman introduced contemporary stakeholder theory and indicated that success is dependent on satisfying the interests of all stakeholders. Organisational theorist Ian Mitroff first conceptualised the stakeholder theory in 1983 (Scott, 1985; Ruscoe, 1984). Haataja (2020), Mathur, Price, Austin and Moobela (2007), McGrath and Whitty (2017) and Matuleviciene and Stravinskiene (2015) note that stakeholder theory describes personal or institutional interests, viewpoints, ideas, and activities in a community, industry, or business. The stakeholder theory shows how policies, legislations, and programmes affect industry players and consumers. A state, organisation or individual's actions and inactions impact stakeholders. This study uses the stakeholder theory to suggest that consumers and institutional players can influence communication interests in the telecommunications industry. Communication in the industry has effects on all stakeholders. Stakeholder theory defines the Ghanaian telecommunications industry as the linkages among people and organisations engaged in developing and implementing policies, procedures, and products and services, as well as consuming telecommunications products and services. Stakeholders impact or are influenced by communication in the industry. Consumers,

service providers, legislators, regulators, consumer protection organisations, and academia, among others, are actively involved in the communication processes in the industry.

Descriptive, normative, and instrumental stakeholder theories were identified by Donaldson and Preston (1995). Wijnberg (2000) states that the normative theory is utilised in stakeholder management. Enyinna (2013) notes that normative theory bases philosophical ethics on connections between persons and institutions. Normative stakeholder theory prescribes what should be done to sustain favourable, high-power, interest, and influence stakeholder relationships. It discusses why there is a need to consider stakeholder needs. Straka (2017) revealed that normative stakeholder theory is rooted in stewardship principles and corporate legitimacy. Some stakeholders have the legitimate authority and influence to change an organisation's fortunes, while others' legitimacy to engage with the institution stems from its ethical commitments. It means that normative stakeholders include persons and groups who must show fair treatment above industry players because they are human. Industry players must pay attention to these stakeholders since they run the organisation.

Descriptive stakeholder theory explains how and why stakeholders' interests are represented (Fontaine, Haarman & Schmid (2006). Descriptive stakeholder theory sees industry or an organisation as a bundle of competing interests (Friedman & Miles, 2002). Egels-Zandén and Sandberg (2009) revealed that a critical study of descriptive stakeholder theory helps institutions account for stakeholders' interests and manage different stakeholders' interests to increase profitability, expansion, and sustainability.

Instrumental stakeholder theory describes how actions and behaviours affect stakeholder relationship management (Jones, Harrison & Felps, 2018; Jones, 1995). Fontaine *et al.* (2006) illustrate how instrumental stakeholder theory helps the management of stakeholders and achieve organisational goals. The instrumental stakeholder theory discusses the relationship between organisational practices and stakeholder management results (Scholl, 2001; Bridoux & Stoelhorst, 2014). The instrumental stakeholder theory is used to understand organisational behaviour (Egels, 2004). This theory examines how controlling stakeholder interests affect organisational performance.

Consequently, normative and instrumental stakeholder theories were employed in this study to comprehend the issues regarding stakeholder communication interests properly. It will help the researcher to focus largely on the communication interests of persons and institutions by connecting them to other individuals and organisations. Also, with the adoption of normative stakeholder theory, the study adequately connects institutions and persons with true influence and power. In this study, normative stakeholders can influence the execution of appropriate strategies and policies for managing communication interests among stakeholders. Thus, applying normative stakeholder theory, the study explicitly specifies how, where, and what kind of regulators, providers, and customers should communicate to sustain strong stakeholder communication ties, interest, and impact.

Furthermore, applying the instrumental stakeholder theory, allowed the study to explain how organisations and individuals influence other stakeholders. In this study, instrumental stakeholder theory efficiently controls stakeholder interests inside the industry. The study successfully examines the link between regulators' functions and the effects of their operations on telecommunications service provision and consumption. Using the stakeholder theory, the various interests, concerns, and challenges that all stakeholders experience while communicating in the telecommunications industry, can be understood.

From the perspectives of Freeman (2017) and Ambler and Wilson (1995), some of the fundamental issues of stakeholder theory are identifying stakeholders' interests, validity, and rights. This research must also identify and monitor varied interests, legitimacy, and rights to communicate in the industry. Sadly, a few of the stakeholder's communication interests may not be legitimate, yet are important to their existence. They need to obtain reliable information to make educated decisions. Even if such judgments may go against some stakeholders, the decisions are crucial to enhancing the operations and boosting efficiency and competitiveness. Thus, rigorous compliance with laws and regulations to provide information to all stakeholders may look harsh to some stakeholders, but non-adherence may generate substantial communication issues among stakeholders and would have detrimental consequences on the performance in the industry.

3.3.2 Agenda setting theory

The agenda-setting theory is prominent in the mass media. However, it is also considered relevant for stakeholder relationship management and specifically for this study, because the agenda-setting theory can be employed to enhance the communication interests of stakeholders in the telecommunications industry by using the media. In 1972, two gentlemen from Chapel Hill, North Carolina, Maxwell McCombs and Donald Shaw, propounded the agenda-setting theory. This theory traces its roots to "The world outside and the pictures in our heads" and "Public Opinion", books published by Walter Lippmann in 1922 (McCombs & Valenzuela, 2007; Wahl-Jorgensen & Hanitzsch, 2009). The agenda-setting theory is based on the research conducted by McCombs and Shaw, who analysed the 1968 presidential election in the United States of America and how the media contributed to the electoral victory. The theory analyses the level of importance that the media place on issues and the level of significance that the public ascribes to those same issues.

The agenda-setting theory is premised on the notion that the mass media is the key player that determines the kind of information that the general public deems newsworthy and relevant. In this study, the application of the agenda-setting theory is relevant in deciding what type of information is communicated by one stakeholder to other stakeholders. The media has become an important medium through which information is communicated to consumers. Due to the number of consumers in the industry, the application of the agenda setting theory has become important. The mass media decide the level of attention and the length of airtime they will allocate to a news story. Davie and Maher (2006) point out that the theory was divided into four main stages by McCombs, namely: the original hypothesis, the mass media communicating relevant public issues to the public, contingent conditions and agenda of attributes, including candidate images and investigations into the persons or organisations that set the media agenda.

Feezell (2018) points out that the media is influential in shaping the public agenda by directing the attention of the audience; and highlighting the perceived importance of public opinion on certain issues. The stakeholders, especially the regulators and the service providers, mostly employed the media to set their agenda. They influence the media to publish the kind and types of information they want other stakeholders to get in the industry. The regulator employs the media to shape the

information released to the public. Similarly, when the service providers want to get their messages across to the other stakeholders, they employ their agents in the media to set the agenda for them. Also, when the customers are unsatisfied with issues in the industry and want to vent their frustration, they use the media to communicate to the regulators, legislators and service providers. The media select the key points in the messages that must be communicated to the stakeholders and highlight these key points for emphasis. The agenda is set in the media, and the stakeholders respond accordingly.

The agenda-setting theory indicates that the media can control the public's mindset and determine which public opinion is important and which is not. The theory is practised on the basis that the media can decide to give importance, notoriety and prominence to some social, cultural, education, religious, legal, security, health, economic and political issues in the industry. The media serves as the mouthpiece for the less powerful stakeholders whose communication interests must be addressed. The use of the agenda-setting theory requires the effective utilisation of practical strategies and methods by stakeholders to win the attention of the public or the other stakeholders on the issues being discussed and issues intended to be discussed in future.

The agenda-setting theory is relevant to stakeholder communication since, through this theory, the media can generate a salient public agenda that concerns stakeholders, and it can transfer the agenda to the public domain for criticism, discussion, deliberation and debate to enable stakeholders to make relevant decisions that increase profitability and promote growth. The stakeholders in the telecommunications industry employ the agenda-setting theory to frequently communicate and interact with influential, powerful and legitimate stakeholders. Stakeholders who cannot communicate their interests directly to organisations can channel their concerns through the mass media. With the proliferation of social media, the agenda-setting theory is conducive to all stakeholders since these media are easily accessible. Stakeholders' interests can easily be communicated through social media and the internet to the appropriate individuals and organisations to prompt immediate responses. The theory is an effective means for creating public awareness and conducting public education on the various communication interests of stakeholders.

McCombs, Shaw and Weaver (2014) indicate that the agenda setting theory can be grouped into seven key facets:

The first level of agenda setting is the setting of the basic agenda and the determination of the impact of the media agenda on the public. The agenda revolves around the importance of public issues and other matters of interest. Because every media has its level of impact, it exerts on a message. Therefore, applying the agenda-setting theory in the telecommunications industry demands that the stakeholders evaluate the types of media they select to communicate to other stakeholders.

The second facet concerns the setting of agenda attributes. It involves the identification and measurement of the impact of the media agenda on the public agenda, involving the salience of the attributes of the agenda and the public figures and organisations involved. Before information is communicated to the stakeholders in the industry, the stakeholders need to ascertain the level of impact they expect the media to generate on the messages. In this study, information with high agenda is communicated through media houses of channels with high impact and the capability to reach the intended audiences on time without diluting the messages' context and relevance.

The third facet is the network agenda setting. It requires the assessment of the networked media agenda's impact on the stakeholders. In communicating with stakeholders through the media in the telecommunications industry, the stakeholders must assess how the agenda set in the media affects the other stakeholders. The important thing to check is the ability of the agenda to get its intended impact on the targeted audiences.

The fourth facet is about orientation. It requires the sender of the message to carefully examine each stakeholder's psychology during encounters with the media. It requires the stakeholders to conduct a stakeholder assessment to determine the communication interests of each stakeholder. It helps to develop targeted messages for stakeholders using the media.

The fifth facet is the identification of the consequences resulting from the effects of setting the agenda for attitudes, opinions, and behaviour. The media agenda must not be set anyhow, but it

must be set to influence the stakeholders and consumers to achieve a purpose. The level of results expected from using the media to communicate in the industry must be assessed.

The sixth facet is the identification of the origins of the media agenda. The stakeholders and consumers must assess the prevailing cultural and ideological environment, news sources, the influence of the media, the norms and routines of journalism, and the individual characteristics of journalists before employing the media to set the agenda. In a most cultural and religious-sensitive environment in Ghana, the stakeholder must be careful in selecting a media channel to communicate their communication interests to avoid conflicts.

The seventh facet is agenda melding. The stakeholders and consumers who intend to use the media agenda theory must find the means to merge the media's civic agendas and valued reference communities, as well as personal views and experiences to create a satisfying picture of the issues for the public.

The agenda-setting theory also experiences some challenges. Drew (2022), Alvernia University (2021), Bajracharya (2018), Davie and Maher (2006), and Scheufele (2000) analysed some criticisms of the agenda-setting theory and explicated them as follows:

Firstly, people place value, premium and importance on the messages differently because understanding, meaning and acceptance of information are based on various factors such as culture, educational background, and beliefs, among others. Hence, it is fallacious to assume that once the messages of the same content are released or communicated in the industry, stakeholders and consumers will have the same meaning and understanding.

Secondly, every stakeholder or consumer wields different levels of power, interest and legitimacy. Every stakeholder or consumer absorbs information based on the premium it places on the information and the relevance of the information to the stakeholders and consumers. The stakeholders and the media may consider every piece of information differently. Therefore, not all information will be passed on to the other stakeholders. However, the agenda-setting theory does not pay attention to the differences in interests among the stakeholders in the telecommunications industry.

Thirdly, though the agenda setting theory is useful in the mass media, one must consider that it is technical, mechanical and scientific. It does not recognise the special actors in the information dissemination process. The human aspect of the theory is minimal. Therefore, its application in managing the communication interests of the stakeholders and consumers will be limited because it is difficult to study human behaviour, in that stakeholders in this study are mostly institutional, and humans manage them. Moreover, consumers' behaviour is dynamic and based on different circumstances, their behaviour changes over time.

3.4 MODELS

3.4.1 Press-agentry model

The press-agentry model is the earliest and most prevalent of the four good models created by James Grunig and Todd Hunt (Grunig & Grunig, 1997; Grunig & Grunig, 2013). Press-agentry is sometimes referred to as the press agent/publicity model. Daniel Boone, Phineas Taylor Barnum, Ivy Lee, Andrew Jackson, Calamity Jane, Edward Bernays and Buffalo Bill Cody are often regarded as the founders of the press-agentry model. The press-agentry model is a well-known communication model that encourages propaganda because of the one-way nature of communication, with truth and facts being irrelevant in the communication process (Mulatu, 2017; Laskin, 2008; Highley, 2000; Grover, 1992). Consequently, applying the press-agentry model in the Ghanaian telecommunications industry produces unbalanced consequences that exclusively favour the communication interests of the senders in the communication process. In the telecommunications industry, there are instances where legislators and regulators use the press-agentry model to enforce policies. In this case, only the regulators and legislators communicate pressing issues related to enforcing regulations and quality services. In most cases, communicators employ the press-agentry model to obtain favourable coverage in the mass media (Chen, 2008; Grunig, 1997).

Press-agentry is a model that employs strategies aimed at capturing the public's attention by fabricating news through staged events, public relations stunts, phoney rallies or gatherings,

spinning, and hype (Coombs & Holladay, 2013; Newsom, Turk & Kruckeberg, 2012). In the press-agentry model, communicators use persuasion and manipulation to sway the ideas and views of essential audiences to act in the way the organisation desires and to increase the company's reputation within the target audience (Matthews, 2010; Fitzpatrick, 2007; Heath, 2001; Duffy, 2000). The press-agentry model is centred on self-interest and the potential for attention-seeking, and it may be utilised to exploit a situation for organisational or individual advantage (The Arthur W. Page Center, 2022). The primary goal of press agentry is to alter audience behaviour without altering the sender's behaviour, as the press-agentry model is one-way communication, with information flowing exclusively from sender to receiver. The press-agentry model is a classic source-to-receiver communication model in which those who distribute messages disregard the replies of other parties (Asante, 2016).

In the telecommunications industry, the services providers and the regulators have well-established public relations departments that craft messages to convince stakeholders and consumers to use their products and services. In most cases, the stakeholders (services providers) spin messages to sound convincing to the consumers. Similarly, the consumers also employ the press-agentry model to convey their concerns to the stakeholders. The press-agentry model is mostly employed in advertisements and resolving service delivery issues in the telecommunications industry. This mode of communication only favours the communication interests of the senders (in this case, the service providers), and the receivers (in this case, the consumers) have no chance of providing feedback to the sender through the same medium. When charges for telecommunications services and products are high, consumers express their concern to the regulators, legislators, and service providers in the form of demonstrations and rallies. Consumers undertake demonstrations and rallies to vent their frustration in the industry. The regulators, legislators, and service providers will receive the concerns of the consumers but cannot respond to messages, provide feedback or initiate new communication through demonstrations and rallies. With this, the communication interests of the consumers is served but not the stakeholders' interests.

The press-agentry model of communication is highly criticised by communication and ethics researchers because it is a one-way communication model in which the public interest is ignored, favouring the sender's interests (Grunig, 2009; Laskin, 2009; Sriramesh, Kim & Takasaki, 1999).

The press-agentry model pays little attention to audiences. Practitioners of the press-agentry model are not very interested in conducting surveys or performing research to assure the correctness and trustworthiness of the information they communicate to the public (Waters & Williams, 2011; Watson & Noble, 2007; Morsing & Schultz, 2006). In the telecommunications industry, when the press-agentry model is utilised, those who initiate the communication process do not care about the communication interests of the receivers. All that matters is the need to get the information across. With this, there is a high tendency for some stakeholders or consumers to communicate inaccurate and deceptive information to other stakeholders and consumers.

Moreover, little attention is paid to audience feedback. The senders of the information do not regard research to analyse the communication interests of the receivers. The emphasis is on sending the messages to the audience and not what will satisfy the communication interests of the audience. The stakeholders and consumers do not solicit audience input or perform audience analysis research. The press-agentry model is primarily concerned with manipulating the receivers (Xifra, 2010; McMillan, 2002). When stakeholders and consumers use the press-agentry model, the focus is on the outcome rather than the processes involved. The stakeholders and consumers prioritise the result over the means through which the result is obtained. As a result, the press-agentry model is frequently recognised as an unethical communication style in practice. Furthermore, the press-agentry model has an element of propaganda.

3.4.2 Public information model

The public information model originated with Ivy Ledbetter Lee's efforts in 1904 when he changed public relations practice by emphasising the need to convey the truth to the public. When James Grunig and Todd Hunt proposed the excellence thesis in 1984, they popularised the public information model. According to Grunig (2013), the objective of the public information model is to provide accurate and factual information to the general public via mass media and controlled media. The public information model ensures that communication with the public is effective. The public information model is intended to educate the public about accurate facts and provide all relevant information to stakeholders (Grunig *et al.*, 2002). The public information model eschews

manipulative approaches in favour of more accurate information to garner stakeholder approval (Grunig & Hunt, 1984).

With the application of the public information model in telecommunications in Ghana, stakeholders and consumers provide factual information that satisfies the communication interests of all players in the industry. The stakeholders and consumers ensure that communication in the industry is based on what is required to make an informed decision and not what will benefit only the sender. The public information model provides information about the industry's goals, requirements, enquiries, and success stories, among other things. The primary function of the public information model is to generate press releases (Newsom *et al.*, 2012; Alfonso & Suzanne, 2008; Jacquie, 2007). The public information model aims to disseminate information to the public, typically through the media, hoping that someone would take the information.

The public information model is a one-way exchange of messages from the sender to the recipient with the primary goal of improving the image in the eyes of stakeholders by publishing only information relevant to their requirements (Matthee, 2011; Grunig & Hunt, 1984). The public information model's primary objective is to enhance the industry's image and reputation, as well as providing audiences with accurate and timely information (Guidry, Jin, Orr, Messner & Meganck, 2017; Doorley & Garcia, 2015; Palttala, Boano, Lund & Vos, 2012). When the public information model is used in the industry, communication processes place a premium on disseminating accurate information to inform the public (stakeholders and consumers) without regard for publicity. It means that stakeholders and consumers are not particularly concerned with enhancing the individual communication interests, but the overall communication interests of all stakeholders and consumers in the industry.

The public information model represents an ethical advancement in communication by applying professional, ethical norms and principles. The public information model emphasises the qualities of honesty and truth and promotes their constant use (Bowen, 2010; Bowen, 2007; Fawkes, 2007). In the public information model, communication must contain information and messages suitable for public consumption (The Arthur W. Page Center, 2022). The use of the public information model in the telecommunications industry enjoins stakeholders and consumers to be ethical in the

communication process. All ethical processes involved in the communication process must adhere to the management of the communication interests in the industry. In applying the public information model, stakeholders and consumers convey information to influence target audiences via innovative and informative messaging.

However, the public information model is criticised for maintaining one-way communication (Gyan, Asibi, Baimbill & Johnson, 2017; Kelly *et al.*, 2010; Manier, 2007; Stoker & Tusinski, 2006). The application of the public information model does not permit stakeholders and consumers who are recipients, to be involved in the communication process by providing feedback. The public information model pays no attention to the quality research in the communication process (Suyono & Hanathasia, 2017). Moreover, the application of the public information model does not allow the senders in the communication process to undertake a quality analysis of the communication interests of the receivers to inform their strategy and methods. Compared to the press-agentry model, the public information model lacks formal research, yet delivers trustworthy and genuine information. However, the public information model's incapacity to undertake research makes it impossible to correctly grasp its audiences' communication interests.

3.4.3 Two-way asymmetrical model

The two-way asymmetrical model was established primarily in response to World War I information and propaganda studies (Guiniven, 2002). James Grunig and Todd Hunt proposed the two-way asymmetrical model in 1984. However, the origins of the two-way asymmetrical model may be traced back to the 1920s, when propaganda was an essential means of communication, particularly during World War I. George Creel and Edward Bernays laid the groundwork for the two-way asymmetrical model (Laskin, 2009). The two-way asymmetrical model is a two-way communication process that uses persuasive communication to affect the attitudes and behaviours of essential stakeholders (Wilkes-Allemann, Deuffic, Jandl, Westin, Lieberherr, Foldal & Jarsk, 2021). The two-way asymmetrical model provides a more "scientifically compelling" way of interacting with crucial audiences via research (Shah & Kausar, 2019). Even though the two-way asymmetrical model is based on research, it is designed to benefit the sender more than the receivers (McMillan, 2002; Duffy, 2000). Additionally, the two-way asymmetrical model

incorporates data from research on the public's views and behaviours to create convincing messaging.

In applying the two-way asymmetrical model, the stakeholder or consumers who send messages in the industry can understand the audience's views and behaviours, which may be used to shape the messaging context and style of communication with the audience. The connection between the stakeholder or consumers (sending and receiving messages) is lopsided when applied in the telecommunications industry, because it benefits the sender more than the audience. That is, when stakeholders and consumers provide information, the communication interests of the senders is paramount in the communication process. However, the communication interests is based on scientific evidence. In most cases, the service providers and regulators undertook research to understand how they can position their products and services as the best in the minds of the consumers. Hence, service providers do research to understand consumers' needs so that their advert can portray good images of the service providers. In applying the two-way asymmetrical model, the service providers try to enhance their communication interests and not that of the consumers.

Though the two-way asymmetrical model is less ethical than the two-way symmetrical model and more akin to the press-agentry model, it provides feedback from target audiences through research (Duffy, 2000; Grunig, 1993). Applying the two-way asymmetrical model allows the stakeholders and consumers to assess the ethical benefits and costs associated with communication with other stakeholders and consumers and make necessary ethical adjustments. However, the two-way asymmetrical model builds on the public information model's merits (Wu & Baah-Boakye, 2009; Jo & Jung, 2005; Rhee, 2002). Additionally, the two-way asymmetrical model has been criticised for favouring the senders in the communication process over the receivers. The two-way asymmetrical model is more concerned with converting stakeholders and consumers to its viewpoint, rather than with altering the sender's (stakeholders and consumers) views about the communication interests in the industry.

3.4.4 Two-way symmetrical model

The two-way symmetrical model is a critical communication model that ensures that decisions benefit internal and external stakeholders (Davidson, 2016; Grunig, 2009; Grunig, Grunig & Dozier, 2002). According to Alvin (2017) and Simpson (2014), the two-way symmetrical model is the most ethical paradigm in communication and is most frequently employed by tactical and strategic communication management professionals. The two-way symmetrical approach is centred on communication that establishes and maintains mutually beneficial connections with stakeholders (Whiting, 2022). The central principle of the two-way symmetrical model of communication in this study is that it is based on negotiation between stakeholders involved in communication (senders and receivers are typically public) to promote mutual understanding in the telecommunications industry. It means that applying the two-way symmetrical model requires an effective appreciation of the communication interests of all stakeholders to avoid miscommunication that yields no results. The stakeholders, especially the regulators and the service providers, must ensure that the consumers and other stakeholders have a chance to provide feedback and initiate communication.

The two-way symmetrical communication model derives from communication specialists such as John Hill, Ivy Lee, and Bernays Edward. They established a shared understanding of the importance of communication among stakeholder interactions (Matthee, 2011). In 1984, in their book "Managing Public Relations" James Grunig and Todd Hunt established the two-way symmetrical model as the *de facto* standard. However, James Grunig and Todd Hunt drew inspiration for their scholarly works from the writings of Carter F. Richard, Chaffee H. Steven, McLeod M. Jack, and Joan Schleuder. Since its inception, many scholars have also worked to shape the two-way symmetrical model, such as Models of public relations and communication management (Grunig 2013); Excellence theory in public relations: Past, present, and future (Grunig, 2008); Toward a theory of the public relations behaviour of organisations: Review of a program of research (Grunig & Grunig, 1989); Models of public relations in an international setting (Grunig, Grunig, Sriramesh, Huang & Lyra, 1995); and The excellence theory (Grunig *et al.*, 2002), among others.

The two-way symmetrical paradigm combines research and discussion to resolve conflict, increase understanding, and strengthen stakeholder relationships by influencing internal and external stakeholders to alter their behaviour (Kent & Lane, 2021; Guiniven, 2002). The two-way symmetrical model is intended to change the behaviour of the stakeholders in the telecommunications industry to improve the management of the communication interests of all stakeholders. In applying the two-way symmetrical model, no stakeholder or consumer will view its communication interests as superior to others and will endeavour to respect the communication interests of consumers and stakeholders. However, in applying this approach, stakeholders are not easily swayed by public demands (Kelly, Laskin & Rosenstein, 2010; Grunig, 2001; Grunig, 1994).

In the telecommunications industry, stakeholders have many competing communication interests who wield authority and power. In such a situation, applying the two-way symmetrical model will ensure that no stakeholder is pressured to communicate anything that is not in the entire industry's best interest, but only to promote the stakeholders' communication interests. It can be done by mitigating possible power imbalances among stakeholders and adopting a broader perspective on responsibility in the telecommunications industry. Thus, from a two-way symmetrical model perspective, only a few stakeholders and consumers should not be viewed as the principal benefactors of the communication process; instead, all stakeholders should be considered in the communication process. Those communicating on behalf of a specific actor, operate as liaisons for one stakeholder or consumers in a two-way symmetrical arrangement (Tewes, 2016; Bosley, 2014; Durmaz, 2014). Therefore, the application of the two-way symmetrical model in this study ensures that stakeholders communicate on behalf of the entire industry; hence any information communicated must improve the communication interests of stakeholders and consumers in the telecommunications industry.

The two-way symmetrical model is an efficient method for managing interactions between a business and its stakeholders on both an internal and external level (Milojević, 2015; Macnamara, 2012; Kelly *et al.*, 2010). Through communication, the two-way symmetrical approach guarantees that corporations efficiently interact with the public to ensure that all involved parties gain, hence generating a mutually advantageous scenario (Steyn, Steyn & van Rooyen, 2011; Stoker & Tusinski, 2006). The two-way symmetrical communication model distributes power between the

organisation and its stakeholders. Additionally, communication becomes reciprocal when a two-way symmetrical model is used, and all sides are willing to modify their attitudes and behaviours (Gower, 2006; Holtz, 2004). Similarly, utilising the two-way symmetrical model in the telecommunications industry, aims to distribute information fairly to all stakeholders and consumers. It is because, in most instances, stakeholders with low power and authority, as well as consumers, are not often recognised in the communication process in the industry. With the application of the two-way symmetrical model, every stakeholder and consumer has the right to initiate the communication process and receive feedback accordingly.

The two-way symmetrical model has generated much controversy in communication studies. Some communication and public relationship scholars criticise the two-way symmetrical model, claiming that it is utopian and takes a naive approach to communication due to its emphasis on normative rather than positive theory (Kenny, 2016; Davidson, 2016; Kelly *et al.*, 2010; Laskin, 2009). It is illogical to believe that a simple relationship among stakeholders in the telecommunications industry in a developing nation like Ghana, for example, can be symmetrical just because the relationship is symmetrical in form. Because access to resources is limited in developing nations for both some stakeholders and consumers, symmetrical public relations may form an unfair and self-destructive discourse approach for the consumers, the weakest participants. As a result, when a two-way symmetric model is used, it becomes difficult to locate a target public willing and engaged enough to participate in the communication process (Willacy, 2016; Simmons, 2007). Again, the two-way symmetrical model falls short of adequately defining symmetry, since there is an imbalance in stakeholder and consumer power and authority, as the act of conversation frequently benefits stakeholders more than the consumers. It can imbalance power, resulting in the manipulation and control of consumers and some stakeholders with low power and authority over its members (Browning, 2015; Duffy, 2000).

3.4.5 Transmission model of communication

Communication has attracted several varied definitions from scholars and practitioners. These definitions are explicit and implicit in explaining, defining, describing, comprehending and analysing the concept of communication for academics and practitioners. The definitions,

descriptions, meanings and explanations of communication have been published in books, journal articles, internets, pamphlets, and lecture notes, among others. Explaining the no consensus on the definition of communication, Newman (1960) and Lesko and Hollingsworth (2011) acknowledge that the lack of consensus on the definition of communication among experts and scholars is due to a lack of common understanding of the nature, scope and function of the definition of communication. However, there is no disagreement on the knowledge of communication or communication as a process.

The lack of consensus on the definition of communication is also based on the fact that communication is important in building effective family, friendship and business relationships. According to Brun (2010), communication is critical in managing business entities because it is an integral part of administrative and operational duties. It is also important to communicate effectively with all stakeholders to improve organisational efficiency, productivity, profitability, growth and survival (Lutgen-Sandvik, 2010). Communication has become the lifeblood that energises, rejuvenates and strengthens business relationships. Experts classify communication as a social glue that holds organisational activities, employees, the vision and mission, and other internal and external stakeholders together.

The word communication originated from the Latin word “communis” or “communicare”, which connotes common or participate (Lunenburg, 2010). According to Velentzas and Broni (2014), communication, therefore, means to make common information, to participate in information sharing, whether verbal or non-verbal, and through electronic means or physical interaction, between or among humans. Communication was promulgated based on the notion of sharing. Every aspect of the communication process is coined to promote information sharing. Munodawafa (2008) opines that communication is about transferring verbal and non-verbal information from a sender to a receiver through a channel.

Mudasser *et al.* (2012) posit that communication is the process of carrying a message or information from one point to another by exchanging thoughts by speech, visuals, signals, writing, or behaviour. Cacciattolo (2015) also defines communication as the instrument in the form of human language used to transmit information by speaking and writing. Losee (1999), furthermore,

indicates that communication is the movement of information from the input to a processing unit to the output and the inverse of the process. It can be seen as the mechanism employed by persons or organisations to direct the activities of an individual, an organisation or a state. Similarly, Velentzas and Broni (2014) point out that communication is a process and it involves the sharing of information, ideas and feelings, and opinions between groups of individuals, communities and institutions or corporations using speech, writing and body language. Accordingly, Nordquist (2018) states that communication is the act of sending messages through either thoughts or actions, pictures and signs. Craig (2017) notes that communication is an interaction that transfers information through human beings and machines.

Kourkouta and Papathanasiou (2014) also define communication similar to the definition provided by Nordquist (2018), indicating that it is the exchange of information, thoughts and feelings among people using speech or other means. Communication can, therefore, be defined as the means of sending information intentionally or unintentionally from an individual, group of persons, business entity or industry to another individual, group of persons, business entity or industry through a clearly defined medium about needs, aspirations, opinions, perceptions, desires, and expectations among others. Communication is a complex process which requires the person sending a message to clarify the message to avoid unnecessary interference and distortion (Munodawafa, 2008). According to Kanerva, Kivinen and Lammintakanen (2015), it is important to create an open communication culture that encourages open discussion and allows every stakeholder to be heard. For effective communication, the transmission model of communication indicates that it is also important that staff are active in collecting information.

Communication is characterised by the transfer of information, processing of information in the communication systems; active involvement of the sender and the receiver in a communication system; and dynamism in the quality of communication. The transmission communication model is successful and completed when the sender receives feedback from the receiver. Hence, it requires the actors in the communication process to fully understand behaviours associated with both the sender and receiver to remove all possible barriers that may be present in the communication process.

i. Elements of communication

Communication comprises elements, including source/sender, message/idea, encoding, channel, decoding, receiver, feedback and context (Gemma, 2013; Chand, 2018). It ranges from the exchange of information to full conversations and mass communication (Dima, Teodorescu & Gîfu, 2014; Erasmus-Kritzinger, Bowler & Goliath, 2017; Jahng, 2012; Roy, 2001). Communication among stakeholders in the telecommunications industry passes through these communication elements. The message is initiated by a stakeholder and passed through a medium to another stakeholder. The absence of any of the elements in the communication process results in an ineffective process.

Source/ sender: The source or sender of communication includes living things or non-living things. In this study, the sender is a stakeholder or consumer in the telecommunications industry. The communicating stakeholder/consumer or recipient stakeholder/consumer comprises a person, group of people, community or organisation providing, sharing or receiving the information in the industry. The stakeholders or consumers acting as a source of the communication initiate the communication process by conceiving ideas, intentions and thoughts that will be transferred and received by other stakeholders and consumers (Lunenburg, 2010). The stakeholders or consumers inputting the message and sending it out to other stakeholders or consumers must filter the message to achieve its intended purpose (Coates, 2009). The message filtration is necessary because the stakeholders or consumers determine the purpose of the message being transferred. Without effective filtration by the stakeholders or consumers, the purpose of the message could be lost in the communication process. The message's source in the communication process must also be evaluated to determine its authenticity and validity. Hjørland (2012) notes that the effective evaluation of the source/sender of information can be done using the checklist approach, peer review (either modified or classical), evidence-based evaluation, and comparative studies; the credentials of the sender, the reputation of the sender and broader criteria.

Message: This is the information developed and transferred by the stakeholders or consumers. The message is about what the stakeholders or consumers want to communicate in the industry. The message can be verbal or non-verbal, in writing, symbol, or artistic impression. In the

telecommunications industry, the message is in the form of policies, tariff charges, complaints on services, and regulatory issues, among others. For the communication to be effective, the messages must be of high quality and meet the needs of all stakeholders and consumers. Jens-Erik (2013) hints that a message must have the following qualities for effective communication: accurate, appropriate, authentic, authoritative, balanced, believable, complete, comprehensive, correct, credible, current, good, neutral, relevant, reliable, objective, true, trustworthy, understandable, useful, usability and valid. Therefore, the message communicated in the industry must meet the needs of the stakeholders or consumers because messages lacking good qualities will not achieve their purpose. The stakeholders or consumers must formulate the message in a way that will receive good feedback.

Encoding: After the stakeholder or consumer has formulated the message to be transferred in the communication process, it is relevant to ensure that the intended recipient effectively understands and interprets the message (Eke, 2020; Umeozor, 2020; Márquez, 2022). It will help the stakeholder or consumer that sent the message to achieve its communication purpose. Without proper encoding, the message may be blocked or rejected by the stakeholders or consumers. Therefore, the stakeholders and consumers must put policies, tariff charges, complaints on services, and regulatory issues, among others, into one component to promote effective comprehensibility and remove any obstacle that might prevent the receiver from proper interpretation (Morrison, 2010). The messages communicated by the stakeholder or consumer must have the same meaning and understanding as the information, ideas and thoughts received by the other stakeholders and consumers. Though many codes in communication are natural, since they have been completely normalised over time, it is important for the sender to properly develop codes for the message by recognising and classifying the information, ideas and thoughts (Rabin, 2019; Gemma, 2013). In the telecommunications industry, there are various stakeholders with different interests; therefore, communication with any stakeholder must be properly encoded.

Channel: After the stakeholder or consumer has successfully encoded the message, it transfers it through a channel to the intended stakeholders and consumers (Petersons & Khalimzoda, 2016). Channels of communication are means identified and employed by the message originators to communicate with other persons, groups, communities, or organisations (Zhang & Chen, 2020;

Mokaila, 2019) because every channel is unique. The choice of a communication channel is based on the analysis of the receiver, communication purpose, and availability of resources to use (Rehman & Marou, 2008). Therefore, in selecting a particular channel for communication among stakeholders and consumers, it is very important to understand the uniqueness of the intended stakeholders or consumers who will receive the message in the telecommunications industry. The inability to properly assess the various channels and their applicability to the stakeholders or consumers should also be noted. The communication channels can be verbal, non-verbal, personal, non-personal, writings on paper, or the application of ICT (Sanina, Balashov, Rubtcova & Satinsky, 2017; Men, 2015; Gemma, 2013). According to Sanina *et al.* (2017) and Zizka (2014), channels of communication can also be grouped into:

1. Broadcast media such as television, radio, information centres and information van, and post office
2. Print media: newspapers, flyers, brochures, reference cards, leaflets, billboards, posters, calendars, magazines, pamphlets, coupons, signs and notice boards
3. Phone: SMS, calls, voice messages, other mobile applications
4. Internet: email, blogs, e-news, webinars, and online networks.
5. Social media: Facebook, Twitter, Instagram, WhatsApp, and LinkedIn, among others.
6. In-person: face-to-face such as peer educators, meetings
7. Animation, infographic, audio and video clip, advertising.

Therefore, channels of communication in the telecommunications industry can be in the form of one-on-one meetings, workshops, conferences, social media, webinars, text messages, phone, letters, reports, flyers, brochures, leaflets, newsletters, newspapers, radio, television, information centres, among other.

Decoding: Ineffective decoding of messages among stakeholders will result in ineffective communication affecting the relevance and purpose of the communication process. It is the reverse of encoding, where the receiver listens to and pays critical attention to the messages in the information, ideas, and thoughts received from the source through the communication channel (Trenholm, 2020; Bui, 2019). At the decoding stage of the communication process, the stakeholders or consumers must listen attentively to the messages sent by the other stakeholders or

consumers and change the messages into images in their minds to understand the impulse of the messages. The stakeholders and consumers who receive the messages must carefully read and interpret the message in a manner that makes sense to them (Raetzsch & Bødker, 2016).

Receiver: The receiver is the ultimate person or institution that receives the message in the communication process (Wahyudi & Laturrahkmi, 2021; Tian & Li, 2018; Genç, 2017). In the telecommunications industry, the receivers include stakeholders and consumers that receive messages from the other stakeholders and consumers. The stakeholders and consumers become the ultimate target of the communication process. The stakeholders and consumers decode and give interpretation and meaning to the message. Successful completion of communication depends on the conception of the receiver and how the message was framed (Van Ruler, 2018; Munodawafa, 2008).

Feedback: Feedback is a message sent by the receiver after receiving and decoding a message (Lim, 2017; Winstone, Nash, Rowntree & Parker, 2017). Once a message in the form of policies, tariff charges, complaints on services, or regulatory issues, among others, are sent out in the industry, the stakeholders or the consumers that sent the message must receive feedback from the other industry players to assess the effectiveness of the policies, tariff charges, complaints on services, regulatory issues, among others. The stakeholder or consumer sending the message must analyse the feedback from the other stakeholders and consumers that receive the messages to rate the success of the communication. Without effective feedback, the communication process will be truncated, and the purpose of the communication will be defeated (Akilandeswari *et al.*, 2015).

Context: The context in the communication process is the environment in which the message is delivered, requiring that the context be conducive for communication to thrive (Adair, Buchan & Chen, 2010). Therefore, in the telecommunications industry, the context should aid stakeholders and consumers in comprehending the message's genuine meaning. The circumstances requiring communication and the elements influencing it must be properly evaluated. Customers and stakeholders should be able to change the communication environment to make it more resilient.

ii. Types of communication

There are many types of communication identified by experts and practitioners of communication. The most widely used forms of communication in the corporate world include verbal, non-verbal, written, formal, and informal communication.

Verbal communication: Verbal communication is the spoken form of communication. It uses language, sounds, words, and speech forms of communication. With verbal communication, the sender decodes the message through language and voice (Leung Oates & Chan, 2018; Srinivasan Eigsti, Gifford & Bhat, 2016). The emphasis is on applying language embedded with symbols to inform meaning (Mehrabian, 2007). In the application of verbal communication among stakeholders and consumers, talking to each other encourages effective participation and interaction. In most instances, verbal communication in the industry comes in public speeches. Stakeholders and consumers use verbal communication to convey their ideas to the other stakeholders and consumers in a meeting, to understand varied points of view from stakeholders and to solve problems in the industry or among stakeholders.

Jumaa, Mohammed, Elfakki and Hilal (2018), Manker (2018), Markovic and Salamzadeh (2018), Kusuma (2017), Craig (2016), and Jackson (2015) point out that verbal communication can be grouped into informal and formal. Informal verbal communication includes face-to-face conversations, conversations through the telephone, voice messages, and discussions at business meetings. Formal verbal communication includes formal presentations at business meetings, lectures in the classroom, public speeches at public meetings and radio and television.

Business Communication (2013), Jawabreh (2015), and Erasmus-Kritzinger *et al.* (2017) reviewed some advantages and disadvantages of verbal communication to businesses and stakeholders. Some of the advantages of verbal communication include the following:

It is inexpensive: Stakeholders and consumers normally do not have to spend money to procure materials such as computers, papers, pens, pencils, stamps and other written materials before they can improve communication.

Time-saving: Due to its fast, direct and personal nature, stakeholders and consumers spend a few minutes communicating and channelling their energy into other activities. It helps stakeholders and consumers to take quick action, as they do not have to sit down and formulate messages on paper.

Successful delivery of message: With verbal communication, the stakeholders and consumers are assured of delivery of their messages, as it is delivered by the stakeholders and consumers themselves to other stakeholders and consumers with no third-party interferences.

Quick feedback: Verbal communication enhances prompt communication as the sender stakeholders and consumers instantly receive feedback from the audience.

Enhance the resolution of conflict: In difficult situations, stakeholders and consumers employ verbal communication to convince other stakeholders and consumers because they have ample time to ask questions and receive instant explanations.

Effective communication: The use of verbal communication assists stakeholders and consumers in managing their pitch, tone and voice intensity to transfer different messages and meaning to the receiver on a timely basis.

Flexibility in communication: Verbal communication enables stakeholders and consumers to give and also vary messages based on the demand of the situation, without going through formalities.

Maintain secrecy of information: When stakeholders and consumers want the information to be kept secret, confidential and out of reach from other stakeholders and consumers, the information is delivered verbally.

However, verbal communication is also saddled with some disadvantages, including the following:

Highly non-legal: The legality of verbal communication can easily be contested among stakeholders. The admissibility of verbal communication in court is low, as the legal scope of verbal communication is very low and in most cases, non-existent.

It encourages poor record keeping: Verbal communication does not encourage stakeholders and consumers to record messages for future records effectively; therefore, communication lacks reference value and can easily be forgotten.

Loss of message import: The probability of messages and their objectives being distorted among stakeholders and consumers is high.

Cost: It can be expensive in a situation where the stakeholders and consumers must be transported to a meeting place before communication can occur.

Inadequate accountability: Stakeholders and consumers can associate or disassociate themselves from the message because of a lack of records, which makes stakeholders and consumers non-accountable for their actions or inactions during communication.

High rate of errors: There is a high probability of miscommunication and misunderstanding among stakeholders and consumers, particularly when the stakeholders and consumers decode a message in a language different from the language that the other stakeholders and consumers may encode the message.

Non-verbal communication: Communication is more than the use of words. Body language carries more meaning than even the words we speak in the business world. Hence, when communicating verbally among the stakeholders and consumers in the telecommunications industry, the non-verbal aspect of the communication is important and has to be effectively managed to inform good meaning. When communicating among stakeholders and consumers, actions such as sitting style, facial expression, the gestures we portray, the movement of our mouth, and our eye contact impact significantly on the meaning of the messages carried in the verbal communication being sent from the sender to the receiver. According to Rahmah and Kholiq (2018) and Cherry (2018), non-verbal communication includes: paralinguistic, facial expression, gestures, eye contact, body language and posture, proxemics, haptics, appearance, and use of artefacts such as objects and images. Therefore, non-verbal communication among stakeholders and consumers in the telecommunications industry can be in the form of looking straight into the audients' eyes, handshake, and use of appropriate tones that are acceptable socially and culturally among the stakeholders and consumers. The stakeholders and consumers assess the acceptance or rejection of the messages by gauging the reactions of the audients. In the views of Mehrabian (2007), most of the messages communicated are in the form of body language. The movement of the bodies of stakeholders and consumers signifies disbelief, disgust, shock, disbelief, confusion or doubt during the communication process.

Nonverbal communication plays an important part in communication. Nonverbal communication is sometimes more subtle and powerful than verbal communication. Silent communication affects stakeholders' and consumers' social relationships and encounters (Maloney, Freeman & Wohn, 2020; Paranduk & Karisi, 2020; Bambaeroo & Shokrpour, 2017). By interacting with other

stakeholders and consumers, nonverbal communication allows stakeholders and consumers to transmit messages more rapidly and efficiently. Stakeholders and customers can employ non-verbal communication to convey their thoughts and emotions without using words (Sibiya, 2018; Bui, 2018; Jumaní & Chaudhary, 2015). Nonverbal communication is frequently more successful than verbal communication since stakeholders and customers tend to subconsciously pay extra attention to physical facial gestures, voice tone, and body posture during communication (Sutiyatno, 2018; Phutela, 2015). Without utilising spoken or written words, this communication style consists of gestures, facial expressions, eye contact, closeness, and touching, among other things. Therefore, it is quite beneficial for illiterate stakeholders and customers (Ash, 2016; Yang, 2015). However, nonverbal communication is ineffective at providing precise messages and frequently leaves stakeholders and customers unsure of the outcome of the communication process. It is less specific and increases the likelihood that stakeholders and customers may misunderstand the messages communicated in the industry (Di Nota *et al.*, 2021; Ndlela, 2019; Markovic and Salamzadeh, 2018).

Written communication: Written communication is the most significant form of communication because effective written communication is the foundation for successful communication among stakeholders in the industry. Markle, Brenneman, Jackson, Burrus and Robbins (2013) note that written communication contains different types of messages with multiple characteristics. Hence, stakeholders and consumers that want to employ written communication must be able to read and write. Using written communication, stakeholders and consumers should develop and maintain effective skills to meet the communication interests and needs of other stakeholders and consumers. Written communication is the preferable type among stakeholders and consumers, as it is highly legally acceptable and can easily be referred to and tendered as evidence when disagreement breaks (Sparks, Song, Brantley & Liu, 2014). Hence, it is important to consider essential components of written communication, such as the structure, organisation, tone and style and content of the text, to meet the needs of the stakeholders and consumers. A communication delivered in a written form must be clear, concise, simple, comprehensive, composed, accurate, appropriate, and related to the specific needs of all stakeholders and consumers. Written communication can take place among stakeholders or between stakeholders and consumers. It means written communication among stakeholders can be internal such as policy briefs, reports,

bulletins, emails, and instant messages. Written communication among stakeholders and consumers can take the form of email, websites, official letters, policy announcements, legislations and regulations, and news releases.

Erasmus-Kritzinger *et al.* (2017), Mowahed and Kabiri (2011), and Manker (2018) indicate some advantages of written communication:

1. One key means of officialising communication among stakeholders and consumers is by putting the information on paper. It makes communication official and authentic among stakeholders.
2. The use of written communication increases the legal scope of the information communicated to consumers and stakeholders. Stakeholders and consumers can rely heavily on written communication to ascertain the originality of official communication. Messages communicated in a written form serve as evidential material and are highly admissible in court.
3. Written communication among stakeholders and consumers is more accurate than verbal communication because the stakeholder or consumer using the written communication can proofread and revise the necessary corrections many times to shape the content of the message to maximise effects.
4. Written communication enables the stakeholders and consumers to control the flow of messages they are communicating. The stakeholders and consumers can decide when to release information to other stakeholders and consumers to achieve a particular purpose.
5. Sending information through emails can save money and time. With telecommunications, a stakeholder or consumer can send messages to all other stakeholders and consumers over a longer distance through emails, the internet and letters, among others. The audience can receive their messages without having to converge in one place.
6. Written communication is an official means of keeping a record of communication among stakeholders and consumers. It serves as a reference point for correspondence and future communication.

Written communication also has some disadvantages (Quintero, Vergel, Arredondo, Ariza, Gómez, & Pinzon-Barrios, 2016; Siddiqui & Rasheed, 2016; Jones, 2015), which stakeholders and consumers must carefully manage.

1. Written communication lacks secrecy. The use of written communication allows all stakeholders and consumers to access the information. Information in written form is kept and recorded for future reference.
2. It is expensive to stakeholders and consumers, compared to verbal communication, since it involves the procurement of papers, pencils, printers, computers, and the hiring of people in the case of illiterate consumers to write and proofread the messages before sending them out to the other stakeholders and consumers.
3. It is time-consuming. Written communication involves proofreading and editing, which waste the time and energy of stakeholders and consumers.
4. It delays feedback. Feedback from written communication requires the stakeholders and consumers to carefully read and also have time to draft, read and proofread the messages before the stakeholder or consumer that sent the message (sender) can receive feedback.
5. It is too mechanical and does not promote flexibility. It mostly favours stakeholders due to its organisational nature but serves as a disincentive to consumers. This form of communication must follow a specific pattern and formalities. Non-conformity to the established formalities results in no communication.
6. Written communication is not friendly to illiterate consumers who cannot read and write, rendering this form of communication useless to illiterates.

Informal communication: Informal communication refers to the type of communication that flows in all directions and circulates freely amongst stakeholders (Eke, 2020; Jiang, Du, Zhou & Cui, 2020). Informal communication is very common among stakeholders and consumers (Koch & Denner, 2022; Chen & Ke, 2016; Sosa, Gargiulo & Rowles, 2015). It requires communicating in an informal atmosphere where in some cases, the stakeholders and consumers are not even aware of the communication process, and it is based on social relationships. Informal communication is routinely undertaken by stakeholders or consumers (Saleem & Perveen, 2017; Temby *et al.*, 2017). In the telecommunications industry, stakeholders such as regulators and service providers often meet; hence some communications among the leaders become informal. For example, when

regulators get complaints from consumers about service quality, the regulatory agencies can call the operators of the services and inform them before official communication is sent out. A brief phone call to explain a message is a prime example of informal communication unless the conversation is a scheduled call or one in which a predetermined agenda is covered. Informal communication does not have any prescribed format and style, and it takes place outside the formally arranged channels of communication (Hanlon, 2019; Beins, 2016).

Some of the advantages of informal communication provided by Oliveira and Almeida (2022), Țăpuru (2019), Kola (2018a), Kim (2017), and Kumar (2015) include the following.

1. By employing informal communication, stakeholders and consumers may gain a deeper understanding of the issues at hand and discover what other stakeholders and customers truly believe. Informal conversations might encourage stakeholders and customers to share input on concerns they would have otherwise kept to themselves.
2. When just formal communication is done, it is not easy to develop strong relationships between stakeholders and consumers. By combining social connections through informal communication with more formal communication, stakeholders and consumers can develop rapport.
3. Informal communication may foster a more collaborative atmosphere in which new solutions to problems among stakeholders and consumers can be produced. It facilitates the exchange of ideas, sentiments, and opinions, which can foster a sense of belonging among stakeholders and consumers.

Some of the advantages of informal communication provided by Oliveira and Almeida (2022), Țăpuru (2019), Kola (2018a), Xu and Li (2013), and Lai (2016) include the following.

1. Informal communication is often unreported and unreliable.
2. Due to its spontaneity, stakeholders and consumers often misinterpret messages communicated informally. Informally, the message may not be well articulated as in formal communication for redress.
3. Informal communication can mislead stakeholders and consumers.
4. Informal communication can propagate exaggerated or erroneous news among stakeholders and consumers.

5. Unchecked informal communications might shut off new stakeholders and consumers who lack networks which can cause them to be less enlightened on issues in the industry.

Formal communication: According to Albalawi and Nadeem (2020) and Enyia and Eze (2016), formal communication is a predetermined, premeditated and pre-planned form of communication. Stakeholders and consumers using formal communication have a plan in place before the communication occurs. Communication also occurs in formal settings, structures, and channels of communication (Nwogbaga, Nwankwo & Onwa, 2015; Lunenburg, 2011). The stakeholders and consumers in telecommunications have a structured way of communicating formally among themselves. For messages to be recognised among the stakeholders and consumers, they must be formally communicated. Formal communication has a prescribed and detailed methodology for sharing information among stakeholders. It is used to maintain authority and promote uniformity of information communicated (Kumar, 2018; Tenhiälä & Salvador, 2018). Formal communication requires regulated, purposeful information flow. Hence, stakeholders and consumers must understand the process involved in formal communication to get the messages sent to other stakeholders and consumers.

Some of the advantages of formal communication listed by Barns (2020), Polat, Lynn, Akgün, and Emre (2018), Saleem and Perveen (2017), and Amanyia (2015) include the following:

1. When the industry's stakeholders and consumers understand the purpose and relevance of formal communication, they can carry out their obligations to improve the industry's performance.
2. The document of official communication is kept as both a hard copy and a soft copy to give resolutions to problems.
3. Formal communication assists stakeholders and consumers in developing mutual understanding; coordinating and integrating their efforts to achieve the intended results; and promoting the industry's effective operation.
4. Formal communication assists stakeholders and consumers in establishing the relationships required to improve the structure and operation of an industry.

However, there are some disadvantages of formal communication, as provided by Kapur (2020) and Rogers *et al.* (2020).

1. When stakeholders and consumers wish to interact, they must transmit messages through many channels, which can be time-consuming; messages may not be accessible promptly.
2. Formal communication between stakeholders and consumers might provide difficulties when decisions and judgements must be taken immediately.
3. Formal communication lacks versatility.
4. In formal communication, norms and regulations must be adhered to, which imposes expenses on stakeholders and consumers since some must engage professionals to communicate for them.

Internal communication: Internal communication is a collection of methods or technologies that facilitate successful information flow and cooperation among participants (Yeomans & FitzPatrick, 2017; Verčič & Špoljarić, 2020). Internal communication requires specific expertise to aid in making good strategic contributions (Verčič & Vokić, 2017; Welch, 2012). The objective of internal communication is to facilitate an efficient information flow (Verčič, Verčič & Sriramesh, 2012). By keeping them informed, internal communication ensures that all participants in an industry can carry out their duties properly. Therefore, internal communication entails communication between stakeholders and consumers with comparable functions. Open and honest communication is an excellent method for ensuring that stakeholders and consumers comprehend the industry's goals and laws. The stakeholders and consumers can employ internal communication to convey the appropriate message to the appropriate audience inside their association without necessarily informing the industry regulators. Again, consumer groups may utilise internal communication to develop strategies for positively influencing the industry through internal communication.

External communication: External communication involves the exchange of messages between an organisation and other persons or organisations outside the institution's internal environment (Jouany & Martić, 2022; Bobocea Spiridon, Petrescu, Gheorghe & Purcarea, 2016). Therefore, external communication in this study can connote the communication between a stakeholder or consumer with different interests in the industry and other stakeholders or consumers. External

communication is utilised for communicating with external stakeholders on the activities or policies of an industry stakeholder. In most cases, external communication is utilised to enhance the public's view of a stakeholder's activity (Colley, Walch & Rukzio, 2020; Reilly & Larya, 2018). External communication consists of carefully crafted official letters, reports, presentations, and web pages for industry stakeholders.

Vertical communication: Information flowing in a vertical direction can be in the form of downward or upward communication. Lunenburg (2011), Illia, Lurati and Rocca (2006), and Tariszka-Semegine (2012) reveal that vertical communication takes place between hierarchically positioned persons (either downward or upward flow of communication). In the telecommunications industry, vertical communication can take place between powerful stakeholders and other stakeholders and consumers. With downward communication, information flows from the top down. The messages among the players in the industry can come from the regulator to the service providers and consumers on regulatory policies, whereas between service providers and consumers on the service charges. In this type of communication flow, the regulators send the message to the service providers and the consumers. The regulators, in this case, control the communication processes. Downward communication is more common than upward communication in a regulated environment where regulatory measures must be followed (Tariszka-Semegine, 2012). Downward communication flow manifests in situations where those with authority command others to obey to sanitise the industry. Muhamedi and Ariffin (2017) and Global Edulink (2016) posit that effective downward communication is achieved through the clear identification of the objective and purpose of the communication, delivering an accurate, clear and concise message, and the employment of a communication technique that suits the purpose and intent of the communication. However, the application of downward communication results in excessive bureaucratic delays.

Upward communication is the direct opposite of downward communication. In upward communication, information moves from superior to subordinate (Bergman, Dellve & Skagert, 2016). Therefore, in this study, upward communication involves the movement of information from stakeholders with low power to stakeholders with high power in the hierarchical order. In most cases, consumers convey formation to industry regulators or service providers on poor service

delivery. The application of upward communication is an effective means of affording the stakeholders in lower positions or with low power and influence to provide feedback and to express their concerns, suggestions and opinions to stakeholders in higher positions or with high power and influence (Tourish & Robson, 2004; Milliken, Morrison & Hewlin, 2003).

Lateral communication/horizontal communication: This involves the dissemination of information among stakeholders with the same power, interest and influence along the same hierarchy or line of authority (Femi, 2014). It is a parallel means of communicating in an industry. There is no high power and low power stakeholder relationship in this form of communication. It is usually employed to develop a special relationship to share information and resolve challenges and conflicts (Mahmoudi & Haghgooyan, 2016). In the telecommunications industry, stakeholders such as service providers or government agencies can use lateral communication to discuss issues related to the industry. Lateral communication reduces the amount of time wasted in communication. It is also an effective means of promoting coordination and communication among stakeholders (Trajkova, Andonov & Mihajloski, 2014).

Diagonal communication: This is the form of communication that flows across hierarchical levels. Diagonal communication cut across horizontal and vertical communications. With diagonal communication flow, information flows among stakeholders and consumers of one working group and stakeholders and consumers of other working groups or departments (Trajkova *et al.*, 2014; Mahmoudi & Haghgooyan, 2016). Diagonal communication enables information to flow between people operating in different functional divisions or departments (Kwateng, Osei & Abban, 2014). Hence, in the industry, the application of diagonal communication can involve communication between consumer protection agencies and environmental protection agencies on the environmental consequences of the operations of telecommunications service providers.

3.5 Variable framework

A framework containing variables was developed from the theoretical framework depicted in Chapter 2. It shows the linkages among the adopted variables of the study. It aims to support efficient and effective management of communication interests within the telecommunications

industry of Ghana. The framework, as indicated in the Figure below, shows how demographic indicators of stakeholder groups; communication interests of stakeholders; communication challenges; and communication strategies and mechanisms to improve stakeholder communication, have the propensity to improve efficient and effective management of communication interests within the telecommunications industry of Ghana.

Stakeholder in the telecommunications industry is defined as individuals, business entities, and organisations that have the legitimacy, power, and interest to affect the operations of the telecommunications industry of Ghana and who can also be affected by the operations of the telecommunications industry of Ghana. In this study, stakeholders in the telecommunications industry are grouped into two main categories: consumers and all other stakeholders. A detailed discussion of the term stakeholder is included under heading 4.1 Definition of stakeholder.

Stakeholder interest in this study refers specifically to only communication interests in the telecommunications industry.

Stakeholder communication is defined in this study as the exchange of information among individuals, business entities, and organisations that have the legitimacy, power, and interest to affect the operations of the telecommunications industry of Ghana and who can also be affected by the operations of the telecommunications industry of Ghana.

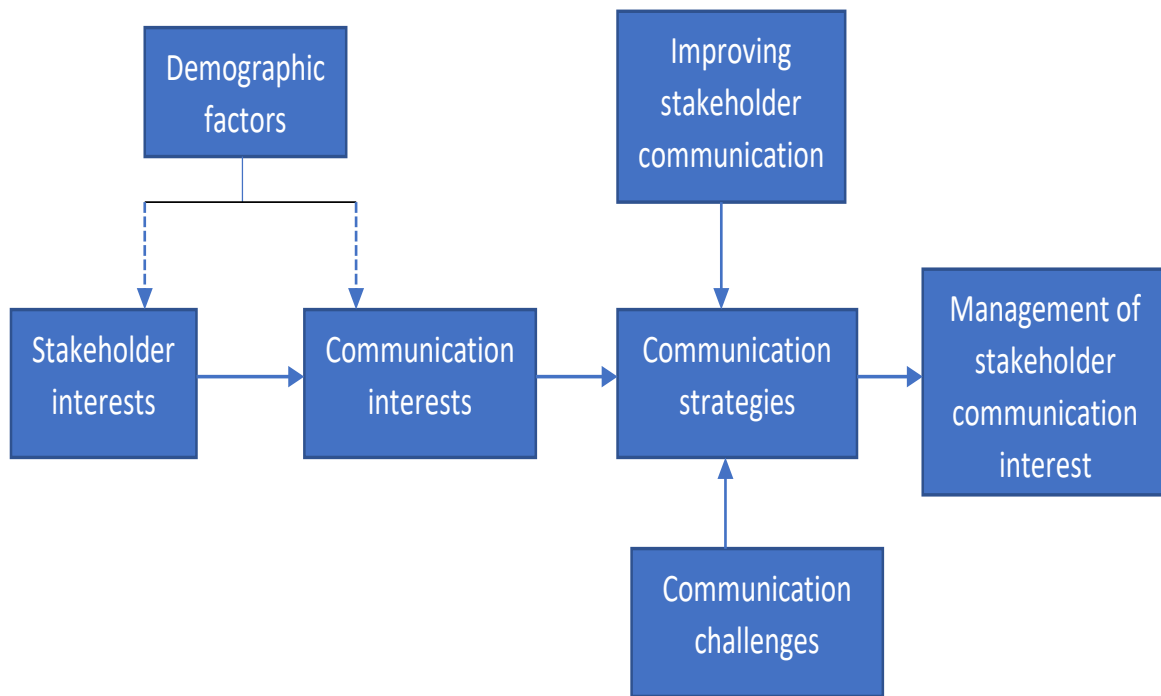
Stakeholder communication interests is defined in this study as communication desires and needs stakeholders, including consumers, seek to achieve as well as the benefits (outcome) they realise through communication in the telecommunications industry.

The indicators of communication interests, as used in this study, include the strategies used to communicate among consumers and stakeholders; awareness and challenges in the management of consumers and stakeholders' interests in communication; communication challenges among consumers and stakeholders; and measures that consumers and stakeholders can use to improve communication in the telecommunications industry of Ghana.

Stakeholder, as used in this study, means the institutional stakeholders such as investors, civil society organisations, mass media, regulators, elected officials, regulators and ministries, departments and agencies.

Consumers, as used in this study, mean every individual who used the services and products provided by the telecommunications service providers. They are the end-users of services and products provided by telecommunications providers. They form most individuals, business entities, and organisations in the telecommunications industry. Moreover, individuals in the business entities and organisations consume services and products provided by telecommunications providers. The terms consumers and customers will be used interchangeably in the text.

Figure 3.1 Variable Framework



Source: Author's conceptualisation (2022).

The literature review informed the application of the variables in the framework on the concepts of stakeholder and communication. The variable framework shows that it is proposed that interests

of the various stakeholders and the management of communication interests are related in the telecommunications industry. The study adopted the structure of the conceptual framework developed by Schiller, Winters, Hanson and Ashe (2013) and modified it to suit the topic and objectives of the study. Based on the theories and concepts reviewed, the key variables used in the variable framework included: demographic factors, stakeholder interests, communication interests, improving stakeholder communication process, communication strategies, communication challenges and management of stakeholder communication interest.

The framework indicated that the management of the communication interests of stakeholders in the telecommunications industry could be influenced by demographic characteristics such as age, gender, social status and industry of the stakeholder, among others. The demographic factors of the stakeholders affect the nature and type of interest. Stakeholders of different ages, gender, and social status require different communication needs and interests. The framework indicates that demographic factors of the stakeholders determine their communication interests. It calls for an intensification understanding of the various stakeholders' demographic factors to determine their communication interests.

The framework further indicates that communication interests in the telecommunications industry affect the kind and types of communication strategies that players in the telecommunications industry employ to communicate with the stakeholders. The communication strategy utilised by stakeholders is informed by communication challenges and the need for stakeholders to improve communications among stakeholders in the telecommunications industry. The communication strategies are also influenced by communication challenges impinging effective communications and the factors that promote effective communication among stakeholders in the telecommunications industry.

Strategies adopted by the players in the telecommunications industry to communicate with other stakeholders are determined and influenced by the communication interests of the stakeholders. Stakeholders employ a communication strategy to meet their communication interests. All the above variables discussed in the conceptual framework invariably influence the management of stakeholder communication interests in the telecommunications industry. It requires effective

identification, understanding and management of the variables to promote and improve the management of stakeholders' interests in communication. Hypotheses for the study were developed based on the above conceptual propositions.

3.6 CONCLUSION

This Chapter has extensively reviewed the theoretical framework for the study. The literature review indicates that the theoretical framework forms the foundation for quality research. The wide-ranging theories, which include the systems theory, stakeholder theory, agenda-setting theory, Grunig and Hunt's four public relations models and the transmission model of communication, lay a solid foundation for studying stakeholder communication in the Ghanaian telecommunications industry. The review points out that stakeholder concepts are complex and require comprehensive analysis to decipher the issues surrounding them effectively. Stakeholders are important actors that need to be taken seriously. They can negatively or positively impact an organisation's growth, profitability and survival. Communication has also been defined and includes the distinct elements of the source/sender, message/idea, encoding, channel, decoding, receiver, feedback and context. Each stakeholder requires a specific type of communication to improve the effectiveness of the communication process.

A breakdown in communication results in a breakdown in the effective operations of an industry. Effective communication creates a perfect platform for all stakeholders to voice their suggestions, grievances, opinions and contributions. Key types of communication include verbal, non-verbal, written, and formal and informal communication. Verbal communication utilises language, sounds, words, and speech, while non-verbal communication includes body language, facial expressions, gestures, eye contact, proxemics, haptics, paralinguistics, appearance, and the use of artefacts. Written communication is the foundation for official communication among stakeholders in any industry. Informal communication is the most widely used type of communication within organisations because it is not codified and does not follow any strict format. Formal communication is a predetermined, premeditated and pre-planned means of communication and can flow in many ways among stakeholders and consumers. These include vertical, horizontal, diagonal, small group and external communication.

CHAPTER FOUR

STAKEHOLDER COMMUNICATION

4.1 INTRODUCTION

Stakeholders are influential in the telecommunications industry. It is, therefore, necessary to properly define the concepts of stakeholders and consumers in the context of this industry. Due to the broad nature of the concept, different scholars and experts have defined stakeholders in different contexts with varied perspectives. The study of the stakeholder concept gained traction in the academic field in 1963. It became popular after Edward Richard Freeman wrote extensively on the definition of "stakeholder" in his seminal work, *Strategic Management: A Stakeholder Approach*, in 1984. Key types of stakeholders include: demanding stakeholders, discretionary stakeholders, dormant stakeholders, dependent stakeholders, and dangerous stakeholders.

The stakeholders in the telecommunications industry in Ghana include, among others, the industry regulators, training institutions, telecommunications service providers and consumers. The main regulator for the industry in Ghana is the National Communications Authority, with supervisory authority from the Ministry of Communications. However, other industry statutory authorities and agencies, such as the Environmental Protection Agency, Ghana Atomic Energy Commission, and Ghana Revenue Authority, are also key stakeholders in the industry. Though these authorities and agencies do not have direct supervisory authority over the activities of the telecommunications industry, their functions cut across the industry to safeguard the environment, promote the health and safety of the people, and streamline and mobilise adequate and commensurate revenue from the operations of the telecommunications service providers to the government.

The actions of stakeholders in the industry, of which consumers is an important group, directly or indirectly impact the performance of telecommunications in Ghana. It is, therefore, important for players in the industry to undertake a comprehensive analysis of all its stakeholders to identify

their interests, needs, and power. Identifying stakeholders', and specifically consumers', interests must concentrate on the communication interests and needs of all relevant stakeholders in the industry. In response to this, relationships with stakeholders and consumers must be managed effectively to minimise misunderstanding and confusion in the industry. As such, the industry should devise strategic plans that include and manage the interests of all relevant stakeholders and consumers.

4.2 DEFINITION OF STAKEHOLDER

A stakeholder is an important concept in management and governance. The importance attached to the concept has generated research interest in understanding the intricacies of the concept. The concept of stakeholder has received wide popularity. It is one of the concepts in management and governance that has attracted several definitions from experts. Many studies by astute researchers and practitioners on the definition of stakeholder emerged over the past few years, in an attempt to defuse, clarify and explain confusing elements surrounding the application of the concept in management and governance arenas. McGrath and Whitty (2017), Deverka Lavallee, Desai, Esmail, Ramsey, Veenstra and Tunis (2012) and Yang, Shen, Ho, Drew, and Xue (2011) note that stakeholders can be effectively defined based on the field, interest and activity of the person defining it.

According to Matuleviciene and Stravinskiene (2015), the definition of the concept of stakeholder can be grouped into four main categories after answering the following questions:

1. Is there any existing relationship between the organisation and its stakeholders?
2. Is there a power dependence in the organisation? The definition seeks to ascertain whether an organisation depends on stakeholders or vice versa. It also takes into consideration a mutual power dependence relationship.
3. What is the basis for the legitimacy of the relationship between the organisation and the stakeholder?
4. Is the stakeholder interests-legitimacy implied or not implied?

Mathur *et al.* (2007) also note that the definitions of stakeholders are based on organisational management, public policy, and (international) development projects. On the organisational management front, a stakeholder is defined as a person or institution that must be taken seriously. A stakeholder is defined to ascertain the effects of policies on the people's needs on the public policy front. In defining stakeholders in the context of international development projects, the emphasis is placed on identifying individuals and institutions that will be affected or are affected by a design and implementation project.

The concept of "stakeholder" was first introduced in 1963 by the Stanford Research Institute, which defined it as groups that support an organisation's existence (Florea & Florea, 2013). The definition was further researched and expanded by the American philosopher and professor of business administration, Edward Richard Freeman (Vinten, 2000; Fontaine *et al.*, 2006; Matuleviciene & Stravinskiene, 2015). Freeman's first definition of stakeholder was published in 1984 in his seminal work, *Strategic Management: A Stakeholder Approach*.

In defining stakeholder, Freeman (1984) notes that a stakeholder is any group or individual who can affect, or can be affected by, the pursuit and attainment of an organisation's mission and objectives. This definition was based on the effects of the organisation on an individual or group of individuals. Mitchell, Agle and Wood (1997) posit that though Freeman's definition of stakeholder has received global accolades, there is still no consensus on the definition. The position of Mitchell *et al.* (1997) was buttressed by Friedman and Miles (2006) in their book *Stakeholders: Theory and Practice*, where they indicate that it is managerially prudent to view the organisation as a grouping of stakeholders and that the objectives of an organisation should, therefore, be effectively managed to consider the interests, needs and viewpoints of the stakeholders.

A stakeholder can be defined as an individual or group whose ability to achieve their goals depends on the organisation and on whom the organisation also depends to achieve its objectives (Johnson & Scholes, 2002). Florea and Florea (2013), and Roloff (2008), define stakeholders as human beings, organisations, institutions, and formal and non-formal groups, who are interested in the affairs of an organisation, or who can be affected by its affairs. According to Bourne (2015),

stakeholders are a wide and diverse group, some supportive and useful, others negative and obstructive, and all with different needs and aspirations.

Leach (2002) introduces an important aspect of human development into the definition of stakeholder. The definition expands on actors who form the stakeholder group and their ability to influence the decisions and activities of the organisation. The different dimensions introduced in the definition play a critical role in the management of an organisation. The management approach adopted by an organisation has a direct relationship with its growth, profitability and survival. Stakeholders are people whose welfare rests substantially on the outcomes of the partnership between an organisation and persons related to it. This welfare includes the personal or professional welfare of people and groups directly or indirectly related to an organisation.

4.3 TYPES OF STAKEHOLDERS

The effective identification and classification of the various types of stakeholders associated with an organisation or project require particular skills and tenacity (Kumar, Rahman & Kazmi, 2016; Rahman, Ali, Malik, Ahmad & Asmi, 2017). It is based on the fact that every stakeholder has enormous experience, ability, knowledge and insight to contribute and share concerning the core objectives of the organisation or project. Brugha and Varvasovszky (2000), and Vos and Achterkamp (2006), note that the identification and classification of stakeholders can assist groups, individuals and organisations to accumulate relevant knowledge about the stakeholders to effectively understand and explain their intentions, interests, behaviour, interrelations, agendas, resources, and the influence each individual can contribute to or exert for strategic and tactical decision-making processes.

Good stakeholder identification and classification mechanisms can aid in the development of appropriate strategies to manage the identified stakeholders' needs, and support and facilitate the development and implementation of organisational goals and objectives, as well as appreciate policy context and evaluate the viability of future policy directions in the organisation. Stakeholders are managed in this complex, changing and the unpredictable business environment

when they are effectively identified, assessed and classified (Aapaoja & Haapasalo, 2014, Mainardes, Alves & Raposo, 2012; Cappelen, 2004).

Two main models have been developed for the identification of stakeholders. Sinka (2018) notes that an effective way of identifying stakeholders falls into two models, namely: the traditional management model and the stakeholder model. The traditional management model indicates that stakeholders can only comprise four groups (employees, shareholders, customers and suppliers). On the other hand, the stakeholder model posits that stakeholders cannot be limited to only four groups of people, but can include a wide range of individuals and institutions, depending on the organisation's operations. Mainardes *et al.* (2012) indicate that stakeholders can be grouped into six types: regulator, partner, controller, passive, dependent, and non-stakeholder. Mitchell *et al.* (1997) indicate that based on attributes including urgency, power, and legitimacy in every environment, stakeholders are distinguished into the following eight main categories:

Demanding stakeholders: These are types of stakeholders who possess an urgent claim. However, they can pressure the industry's profitability, growth and survival. These stakeholders do not possess any power or legitimacy, and the industry often does not pay particular attention to them.

Discretionary stakeholders: These stakeholders have the requisite legitimacy, but no power or urgent claims. They have the right to establish a relationship, but they cannot be pressured into it. Organisations can ignore these types of stakeholders, because they do not have the power to affect the industry's growth adversely.

Dormant stakeholders: These stakeholders have the right and power to influence the organisation's activities. They are powerful enough to impose their will on the organisation, though they do not have any legitimate relationship with the organisation and do not have any urgent claim to make. Their inability to make their relationship legitimate and have an urgent claim makes their power useless, since they cannot use the power they possess.

Dependent stakeholders: These categories of stakeholders have both urgent claims and legitimacy, with no power. Therefore, they have to depend on other stakeholders to acquire the necessary power to enforce their legitimacy and realise their urgent claim.

Dominant stakeholders: These are stakeholders who are both powerful and legitimate but with no urgency. Their possession of power and legitimacy helps them build good relationships with the organisation and gives them the strength to influence the organisation's operations to achieve their expectations.

Dangerous stakeholders: These stakeholders are very powerful and have the urgency in influencing the operations of the organisation, though they have no legitimacy. Their identification as dangerous stakeholders is because they can exhibit violent behaviours to get their will. They can exercise their power to coerce organisations to kowtow to their demands.

Definitive stakeholders: These stakeholders have all the attributes: urgency, power and legitimacy. They have the power to influence the organisation's operations to achieve their will. They are given preferential treatment when they present urgent claims, and their claims are urgently addressed.

The above types of stakeholders are identified based on their influence on the organisation. This categorisation is important in measuring the powers that each stakeholder group exerts. Challenges associated with the categorisation of stakeholders include that it does not identify the specific stakeholders who deal with an organisation. This challenge is addressed by distinguishing stakeholders into individuals, groups and organisations (Brugha & Varvasovszky, 2000). Through this categorisation, industry players can identify whether their activities and decisions are affected by or affect individuals or groups, and the organisation can then devise appropriate strategies to deal with them. Though some individuals can be powerful and have legitimacy, there is a need also to consider the larger population consisting of individuals, groups and institutions who have urgent claims. It is specifically critical when enacting and implementing national policies and projects.

According to Mitchell *et al.* (1997), stakeholders can be identified in nine main categories either as:

1. Primary or secondary stakeholders
2. Persons, groups or institutions who own the organisation, or persons, groups or institutions who are non-owners of the organisation
3. Persons, groups or institutions who own capital, or persons, groups or institutions who own tangible assets
4. Persons, groups or institutions whose actions affect the organisation, or persons, groups or institutions who are acted upon by the organisation
5. Persons, groups or institutions who exist in a voluntary relationship with the organisation, or persons, groups or institutions who exist in an involuntary relationship with the organisation
6. Rights-holders, contractors, or moral claimants
7. Persons, groups or institutions who provide resources to the organisation, or persons, groups or institutions who depend on the resources of the organisation
8. Persons, groups or institutions who are risk-takers, or persons, groups or institutions who are influencers
9. Persons, groups or institutions who are legal principals to whom agent-managers bear a fiduciary duty.

According to Brugha and Varvasovszky (2000) and Florea and Florea (2013), stakeholders can be grouped into individuals, groups and organisations. This categorisation of stakeholders connotes that the stakeholder can be one person who has control over the organisation's activities or whose survival is based on the activities of an organisation. A stakeholder can also be a group of persons whose collective interest is affected by the activities of an organisation. Again, a stakeholder can be another organisation or institution which wields power to control the activities of an organisation and on whom an organisation's activities impact greatly - hitches in the operation of the organisation can cause their failure.

Aapaoja and Haapasalo (2014) and Surbhi (2015) indicate that organisations normally group their internal and external stakeholders based on the ability of the stakeholders to control the resources needed by the organisation. Depending on the context, the internal stakeholders are often known as primary stakeholders, and the external stakeholders are called secondary stakeholders. Torland,

Weiler, Moyle and Wolf (2015), and Moraru (2012), point out that internal stakeholders constitute the formal members who are part of an organisation or project, and they also have the power to control organisational resources. The main responsibility of internal stakeholders is to serve the organisation.

Internal and external stakeholders: These stakeholders include employees, owners, board of directors, managers and investors. On the other hand, external stakeholders are informal members of an organisation or project. These persons, groups or institutions who do not possess direct control over an organisational resource can influence the profitability, growth and survival of an organisation or project. External stakeholders are not part of the organisation, but they are affected and influence the activities of an organisation. Examples of external stakeholders include suppliers, customers, creditors, clients, intermediaries, competitors, society and governmental and statutory bodies.

Shareholders: These are important internal stakeholders (Carrillo, 2007). They are the owners of a company or an organisation. They invest by purchasing shares to inject capital into the organisation. They are influential in the organisation's running, and they have the legitimacy and urgent claim to receive fair revenue for their investment. Shareholders are, therefore, the real owners of an organisation and their main interest is to increase and improve organisational efficiency, minimise direct and indirect costs, increase profitability and receive high dividends on their shares (Velasco, 2010; Largani, Kaviani & Abdollahpour, 2012).

Board of directors: These are the persons who steer the affairs of a company/organisation (Yusoff, 2010). The minds that think for and represent the will of the company. They make strategic decisions to achieve the vision and mission of the organisation. They monitor the relationships between: the board of directors and management, and the company and its stakeholders. The ultimate responsibilities of the board of directors are to seek the shareholders' welfare and provide effective corporate governance for the organisation. Traditionally, corporate governance focuses on regulating the directors' duties for the maximum welfare of the shareholders (Muswaka, 2015).

Employees: They are critical to the success of an organisation. They bring on board their skills, energy, experience and professionalism to contribute to the organisation's development. The interests of the employees in any organisation are to have job protection; receive the appropriate and correct level of remuneration; experience a flexible work environment which is appropriate and safe; undertake professional and personal development courses; and receive promotion and development opportunities at all levels of the organisation. It must be noted that the attainment of the interests of the employees will increase the cost of labour and dwindle the interest of shareholders (Greenwood, 2014; Okigbo, 2012).

Managers: They are vital in the organisation and are responsible for its efficient management and growth (Ukandu, 2011; Wambaire, 2011). They are involved in strategic and tactical decision-making, such as regarding mergers, acquisitions, liquidation and market penetrations. Their main interest is business expansion.

Customers: These are persons and institutions who patronise the goods and services of an organisation. They have an urgent claim on the company to receive good value, high-quality services and products. They are influential as they can boycott the goods and services delivered by the organisation. Their main interest is to get value for money (Karel & Ales, 2012).

Suppliers: These are individuals and organisations that supply raw materials in the form of goods and services to support an organisation's operations. They are influential as any delay or nonfulfillment of supply obligations could cripple the organisation's activities (Ferrell, 2014). Their main interest lies in developing long-lasting business relationships that are mutually beneficial to all parties and promote the interest of suppliers. Suppliers place urgent claims on organisations based on mutual advantage and promotion. They expect companies to pay them promptly (Lammi, 2016).

Community/society: These types of stakeholders expect the company operating in their locality to adopt and practice ethical business operations and exhibit sound business, environmental and social moral behaviour. The community/society requires the organisation to develop, implement and ensure the practice of environmental values (Emtage, 2012). The community/society members

also expect the organisation to periodically undertake corporate social responsibilities through the provision of community mobilisation, financial donations, sponsorships, charity work, promotion of cultural heritage and educational support.

Creditors: These are persons and groups or organisations that the organisation is owing. They have a legitimate interest in the operations of the organisation and would, therefore, ensure that the organisation has enough financial resources to settle them. Creditors provide resources for payment to the organisation, and, therefore, the organisation should pay them. They must be managed carefully, as their refusal to give resources to the organisation in the future could lead to its collapse (Xu, 2013; Leonard, 2018).

Intermediaries: These are persons, groups and institutions that serve as a link to the organisation and the external environment. They serve as agents who act on behalf of the organisation. According to Frandsen and Johansen (2015), the main responsibility of intermediaries is to mediate the relationship between the organisation and its other stakeholders. They seek the interest of the organisation in the markets. Examples of intermediaries include distributors, matchmakers, consultants, evaluators and stock brokers.

Competitors: These are persons, groups and institutions who are into business operations similar to the business operations of an organisation under consideration. They produce the same or similar goods and services to the market and serve the same customers. They, therefore, compete for the same stakeholder group. Competitors always want to outdo the performance of another organisation (Malik, 2018; Archer, 2006). It is important for the organisation to effectively study its competitors and devise relevant strategies to remain competitive in the market.

Government and statutory bodies: These stakeholders have the mandate to ensure that the organisation conforms to statutory laws, policies and regulations. They exert influence on the operations of a business. They have the urgent claim to direct businesses to be ethical and lawful operations that save people's health and ensure fair trading in the market. They have the authority to close down any organisation that goes contrary to stipulated laws (Beach, Brown & Keast, 2009). Examples of such government and statutory bodies include the Ghana Revenue Authority,

National Communication Authority, Environmental Protection Agency and Ghana Atomic Energy Commission.

4.4 STAKEHOLDER MANAGEMENT

Stakeholders are important in every organisation or industry (Lee, 2007). It is necessary to identify all the stakeholders related to the organisation effectively, understand their various interests and devise strategies to meet their expectations. It will assist the organisation in harmonising all the different stakeholder interests to benefit the organisation. According to Harrison, Freeman and Sá de Abreu (2015), there are reciprocal relationships between stakeholders if organisations manage and treat them well. The stakeholders turn to exhibit positive behaviour, attitudes and influence. These are carried out through the provision of valuable information, purchasing the organisation's goods and services, performing their statutory obligation, providing better financial terms, investing more into the company and being truly loyal to the organisation. Stakeholder management is a meticulous activity that goes through rigorous processes or steps (Gomes, 2006). Jainendrakumar (2016) notes that stakeholder management is identifying relevant stakeholders such as persons, groups, and institutions that can impact or be impacted by a project or organisation's activities. It requires strategic analysis of the various expectations of stakeholders and the development of appropriate strategies to effectively engage stakeholders in the performance of the activities of an organisation. Many stakeholder management experts propound different stakeholder management steps.

Florea and Florea (2013) point out that stakeholder management has five main steps, including stakeholder identification, discovering and understanding stakeholder interests, stakeholder analysis/mapping, stakeholder management and evaluation of the stakeholder process. On the other hand, Chickha (2017) groups the process involved in stakeholder management into three main steps: stakeholder identification, analysis and assessment. Project Management and Leadership (2016), and Antônio, Geciane and Ornella (2015), combined the abovementioned points into two main steps and introduced additional two steps to the management of organisational stakeholders. These steps include: identifying stakeholders, planning stakeholder management, managing stakeholder engagement and controlling stakeholder engagement.

Stakeholder identification: The first step involved in effective stakeholder management is to develop a concise means of identifying all the stakeholders related to a project or activities of an organisation. It involves effectively identifying the power and influence of a stakeholder in the industry and how the stakeholder affects the industry's operations to liaise with key groupings and sub-groupings (Varvasovszky & Brugha, 2000). The identification of stakeholders must be carried out systematically, identifying those directly and indirectly affected by the organisation's activities. Some means of identifying include: interviewing, brainstorming, focus group discussions, questionnaire distribution, observation, and meeting with community members (Florea & Florea, 2013). According to Community Development (2015), the main stages involved in the identification of stakeholders include: Sketching the areas affected by the activities of the organisation into impact zones; identifying stakeholder groups in the impact zones; and ascertaining the stakeholder groups who are affected potentially in the impact zones.

Discovering and understanding stakeholder interests: Stakeholders have varied interests with different dimensions ranging from economic improvement, social welfare, cultural heritage protection, security of employees and commensurable employment benefits, health and safety and environmental protection. It is important to clearly identify stakeholders' interests and comprehensively understand all the areas of the identified interests (World Health Organisation, 2005). A good understanding of the various stakeholder interests will allow the organisation to effectively manage each interest to the satisfaction of the stakeholders and the organisation's interest.

Stakeholder analysis/mapping: This is a critical stage of the stakeholder management process to determine the stakeholders' degree of influence and interest. Stakeholders are grouped based on their positive and negative influences on the decisions and activities in the industry and vice versa. There are some stakeholders' interests that can be noticed and identified, while others are not obvious and cannot be easily noticed and identified. There is also the possibility of conflict among stakeholders' interests. Through the analysis of stakeholders, strategies are devised to work cordially with stakeholders with diverse interests. There are many approaches to analysing stakeholder interests in any project or organisation.

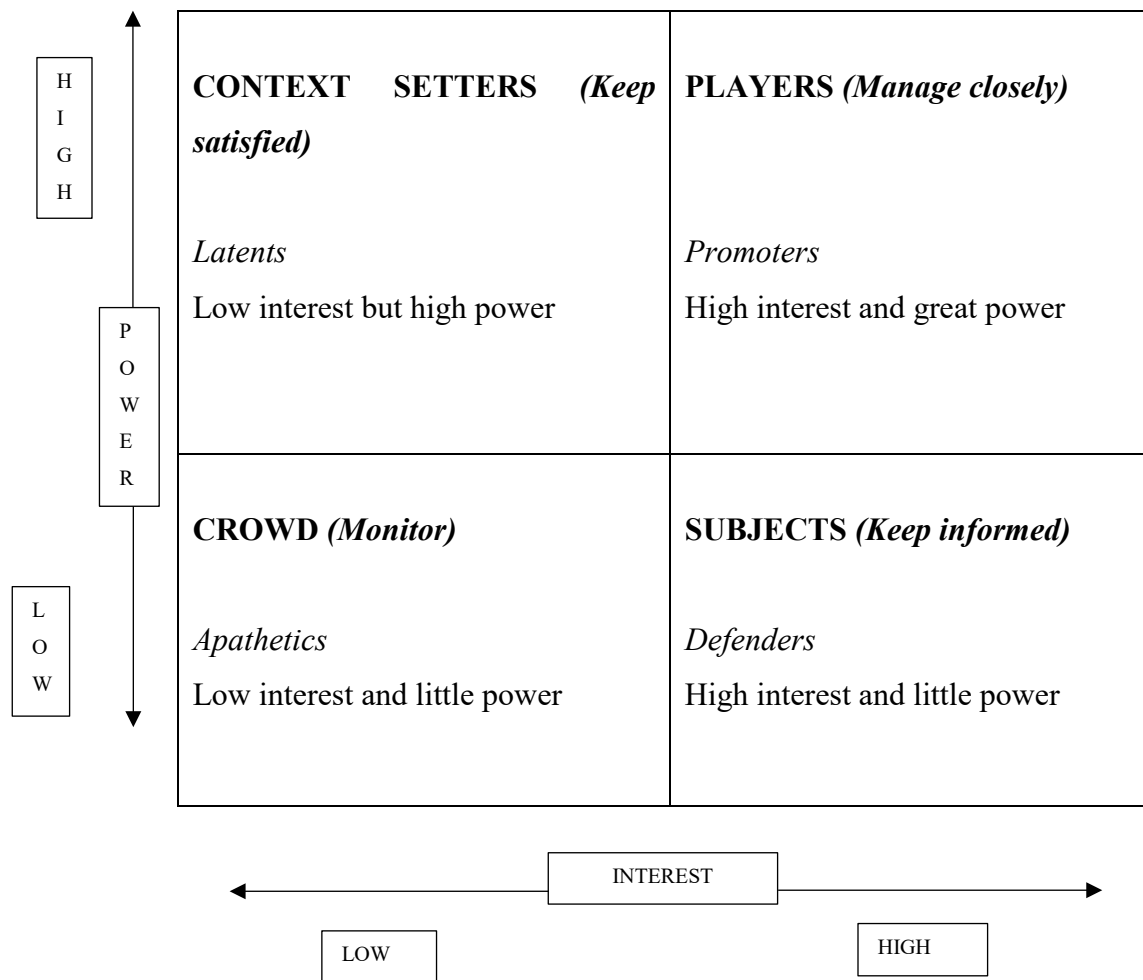
Experts call them stakeholder analysis techniques, and they include the importance/influence matrix, influence/interest matrix, power/interest matrix, power/influence matrix, influence/impact matrix, impact/priority matrix, problem-frame map, readiness/power matrix, support/opposition or constructive/destructive matrix, and power/legitimacy/urgency diagram (Mathur *et al.*, 2007; Bryson, 2004). The most common stakeholder analysis techniques include the power/interest matrix, also popularly called the power versus interest grid, influence/interest matrix, power/influence matrix, influence/impact matrix and the salience model.

The power/interest matrix helps to differentiate stakeholders. Fran Ackermann and Colin Eden developed the matrix in 1998 to analyse stakeholders and the levels of power and interest they wield (Bryson, 2004; Ackermann & Eden, 2011; Slabá, 2014). Four quadrants are drawn to categorise four types of stakeholders. The stakeholders are plotted on a grid based on their power and interest levels. Stakeholders with high power are located on the right-hand side of the grid, while stakeholders with high interests in the industry are placed in the top part of the grid. Stakeholders with high power and interest are classified as players and placed at the top right-hand quadrant of the grid. They are also called major stakeholders because they can control the industry. They are essential stakeholders whose support is necessary for the industry's survival. The players can have negative and positive effects on the operations and decisions of an organisation. Critical attention must be paid to the major stakeholder players and constantly have in-person interaction with them. It is important to have excellent interpersonal relationships with the players.

Stakeholders with high interest and low power are placed at the top left quadrant of the grid and called subjects. Their interests in the operations and decisions of the organisation can have positive and negative effects on the success or failure of the organisation. Strategies to manage the subjects should be tailored towards increasing the power of the stakeholders with positive interests in the operations and decisions of the organisation and converting them into players while neutralising the negative interests. It is necessary to keep the subjects satisfied through occasional interaction and information sharing in the form of emails and reports.

Stakeholders with high power and low interest are context setters placed in the bottom right quadrant of the grid. They have the power to influence the context within which an organisation operates. They also have the power to influence the future success or failure of an industry or organisation. Therefore, strategies must be devised to raise awareness and help stakeholders understand the importance of the industry or organisation's operations and decisions. It is important to regularly interact with the context setters and develop a close relationship with them. They will increase interest in the operations and decisions of the organisation and turn them into players. The stakeholders who wield low interest and low power are classified as a crowd. They are sometimes known as potential stakeholders or minor stakeholders. They are not regarded as essential stakeholders whose support is not directly needed for the industry's survival. Though their power and interest could increase, it is highly unlikely that resources will be spent to raise their power and interest. Their actions must be monitored to be in a position to manage them. They must be informed through public reports. The power/interest matrix is presented below.

Figure 4.1 Power/interest matrix



Source: Mathur *et al.* (2007); Bryson (2004); Florea & Florea (2013).

Stakeholder management: It is important to employ this step to devise appropriate strategies to win the support of stakeholders towards the operations and decisions of the organisation. The individual stakeholders must be defined thoroughly to identify their level of power and interest. Individuals with high power and interests, such as shareholders, employees, investors, customers, suppliers, and competitors in the industry, must be identified and categorised. Players with a positive influence on the operations must be carefully integrated into the organisation's decisions. They must be an integral part of the organisation. They must, therefore, be involved in the activities of the organisation. The players can be managed by paying attention to their opinions, comments, and suggestions. Where their opinions, comments, and suggestions are not rejected, they must be

provided with explanations. Failure to effectively use their energies and abilities can turn them into opponents who can collapse the business.

Moreover, all stakeholders with high interest but who possess low power must be grouped into subjects. Typical examples of subjects include civil society organisations and interest groups. Then strategies that pull them into the industry must be devised. All stakeholders with high power but little interest in the organisation's operations must be grouped as context setters. They include government institutions such as EPA, GRA and NCA. Managers must provide regular unambiguous information to the context setters, as they can jeopardise the organisation's fortunes. The other stakeholders with no power or interest must be grouped as a crowd. They monitor the company's operations and are interested in whatever happens in the organisation. They can be managed through public announcements and reports. An example of a crowd includes local community members. Evaluation of the stakeholder process: This is the last step in the stakeholder management process that must be carried out to ascertain if the above four steps are perfectly done.

4.5 STAKEHOLDER INTERESTS

Stakeholder interests comprise the diverse reasons and needs of the stakeholders (Lienert, 2022; Marjamaa, Salminen, Kujala, Tapaninaho & Heikkinen, 2021; Svensson, Petersson & Ekberg, 2010). Every stakeholder or consumer has interests in any sector, making it tough to please each stakeholder or consumer at a time (Freeman, 2010; Ogden & Watson, 1999). The interest of stakeholders differs from one stakeholder to another, since stakeholders have extremely distinct interests concerning the telecommunications industry. Stakeholders and customers will have diverse reasons and expectations for actions in the telecommunications business. The interest of industry stakeholders and consumers must be addressed when establishing the structure and processes that impact the appropriate function of the stakeholders in the industry. Hence, it is vital to establish ways to combine the interests of all the different stakeholders' interests into the policy document to increase the performance of the communications industry. Effective comprehension of the interests of stakeholders and consumers to grasp their wants, expectations, and values is necessary (Ayuso *et al.*, 2014; Lusch & Webster, 2011). Improving engagements among

stakeholders and consumers in the business depends on successfully harmonising the diverse shareholders' interests in the industry.

Ignoring the interests of a given segment of stakeholders and customers might have detrimental impacts on the functioning of the industry (Florea & Florea, 2013; Brignall & Modell, 2000; Rowley & Berman, 2000). Hence, it is vital to guarantee that the interests of diverse owners and customers in the communications business are balanced. The different interests of all sorts of stakeholders and consumers may be figured out by assessing the stakeholder's intentions, prospective advantages, the resources owned by the stakeholders, and the stakeholder's identification of other stakeholders. Some of the primary interests of stakeholders and customers in the telecommunications business include the cost-of-service charges, lively industry, quality services, the industry's performance, contribution to social and economic growth, health and safety, and data security. However, assessing whether these stakeholders' interests have been realised depends on good communication among the stakeholders and customers. Recognising stakeholders' interests will aid in discerning multiple viewpoints in the decision-making process and obtain the cooperation of all stakeholders and consumers in implementing industry policies and regulations.

4.6 IMPROVEMENT OF COMMUNICATION AMONG STAKEHOLDERS

Jurkštieņe, Darškuvienē, and Dūda (2008) studied stakeholders' interests in the telecommunication industry. The study focused on identifying modern and effective means of ensuring management control systems to provide information from different stakeholders' perspectives. Using a survey approach and selecting 78 managers from two telecommunication companies, Jurkštieņe *et al.* (2008) point out that management employs different management control systems to suit different information dissemination agendas in the telecommunications industry.

Furthermore, Gurabardhi, Gutteling, and Kuttschreuter (2007) carried out a research communication flow study in the telecommunication industry and illustrated how stakeholders participate in communicating risk in this industry. The study reviewed 349 peer-reviewed articles between 1988 and 2000 from scientific journals. The study noted that articles published on the

one-way flow of risk communication are gradually decreasing. The study also found an increase in publications on two-way communication. Gurabardhi *et al.* (2007) further indicate that stakeholder participation in risk decisions and communications is also increasing gradually and that risk communication strategies have not changed significantly over the years.

Similarly, Naqvi, Aziz, and Rehman (2011) studied how stakeholder communication impacts the outcome of a project in Islamabad. They found that there is a strong correlation and dependency of project outcome on stakeholder communication and, therefore, indicate that good, effective and quality stakeholder communication should be employed to maximise the outcome of projects.

Dragoi, Popa, and Blujdea (2011) performed a study on enhancing stakeholder communication. The study determined that the public relations support and awareness campaign enhances stakeholder communication using quantitative secondary data. Most awareness campaigns consist of nine meetings between stakeholders and the media.

Owusua (2012) also conducted a study to examine the practice of employee relations in a manufacturing company. The author found a system for communication such as durbars, notice boards, and departmental meetings in the Cocoa Processing Company. There are clear channels of communication in the company under study to communicate their concerns, complaints, and suggestions.

Bergman *et al.* (2016) conducted a study in Sweden to examine the communication processes used during workplace meetings. The study found that organisational communication flow is influenced by the frequency, physical setting, time allocated, and duration of the communication. The study also found that workplace meetings are instrumental in promoting communication between employees and management because they create an avenue for employees to influence decision-making.

4.7 STRATEGIC COMMUNICATION AMONG STAKEHOLDERS

Communication must be strategic and tailored to the needs and demands of all stakeholders and consumers. Stakeholders should devise mechanisms to promote and enhance strategic communication in their functions and operations. Strategic communication refers to the communication concepts, tactics, and campaigns that stakeholders adopt to further their purpose, objective, or principles (Hallahan et al., 2018; Zerfass, Verčič, Nothhaft & Werder, 2018; Lock, Seele & Heath, 2016). "Strategic communication" is the application of communication to achieve the overall industrial aim purposefully.

Similarly, Thomas and Stephens (2015) also acknowledge that strategic communication is the rational and purposeful application of communication by an organisation to achieve its mission from an integrated communication and multidisciplinary point of view. It can be done by extending ideas and issues grounded in various traditional communication disciplines. Heide, Platen, Simonsson and Falkheimer (2018) and the United States of America Department of Justice (2009) indicate that strategic communication is designed to establish a codified and unified communication framework to integrate all communication needs and functions to promote communication inclusivity. In addition to accuracy and timeliness, the information must be conveyed precisely to the intended audience (Stavridis, 2007).

Therefore, strategic communication is a plan to accurately communicate policies, plans, decisions, and activities in a timely and culturally sensitive manner through the proper channels in the industry to monitor and enhance performance. It is to present audiences with timely and accurate information to influence their support for the communicator's goals. Strategic communication incorporates communication methods from related fields, such as media relations, information dissemination, advertising, and corporate communication. It is, furthermore, based on coherent and feasible strategies that can be accepted by all stakeholders in the industry (Tibbie, 1997; Raupp & Hoffjann, 2012). It is adopted due to the changing nature of communication currently associated with technology (Thomas & Stephens, 2015). Effective communication depends on the evaluation and selection of relevant approaches and mediums that best address the communication needs of the stakeholders and consumers (Raupp & Hoffjann, 2012; Wonneberger & Jacobs, 2016).

Strategic communication among stakeholders and consumers can focus on the concept of purposeful messaging and exists at the convergence of management strategy and communication (Hallahan et al., 2018). It involves designing and implementing a strategy with a specific objective in mind (Patterson & Radtke, 2009; Hallahan et al., 2007). Strategic communication may be conveyed through various channels, including media releases, modern media such as social media, and traditional media such as radio, print, and television, among others, by stakeholders and consumers in the telecommunication industry. It focuses on the concept of purposeful messaging and exists at the convergence of management strategy and communication (Overton-de Klerk & Verwey, 2013). Therefore, in this study, strategic communication combines the creation of messages with extensive preparation and audience research to achieve a specific goal. By framing and developing a story, strategic communication highlights what is vital to the industry to improve performance.

Strategic communication is a critical part of any industry. A strategic communication plan is the basis for effective and productive communication. Therefore, stakeholders must develop a strategic communication plan or framework to enhance communication interests. In addition, Dillon (2022) explains that a strategic communication strategy is a documented outline of communication with stakeholders for a certain issue. It is a strategy for communicating with the intended audience (Tariq, 2021). The strategic communication plan is replete with messages and methods designed to engage stakeholders in a performance-enhancing approach. An effective strategic communication plan must include the stakeholders involved in the communication process, the rationale for communicating with stakeholders, how and when communication should occur, the content of the communication for each stakeholder, and the channels to use when communicating with stakeholders. Consequently, stakeholders and consumers in the telecommunications industry require a strategic communication plan that incorporates the industry's policies, plans, and activities. A strategic communication plan is a long-term plan developed to position the industry to be more effective in advancing stakeholders' and customers' communication interests.

4.8 STRATEGIES FOR EFFECTIVE STAKEHOLDER COMMUNICATION

Researchers and practitioners employ many strategies to improve stakeholder communication. This section of the study presents diverse views on the strategies used for stakeholder communication. Communication strategy has become an indispensable tool in modern communication and is required to ensure effective communication. It is, therefore, important to understand the meaning of communication strategies. Ahmed and Pawar (2018) define communication strategies as linguistic and non-linguistic strategies employed by communicators to compensate for insufficiency in their knowledge during communication, which is supported. Shannon (2018), Boxer and Cohen (2004), and Pincus and Acharya (1988) indicate that communication strategies are systematic efforts to integrate strategic policies and plans with communication measures to effectively enhance communication between external and internal stakeholders to achieve a defined goal. Mei, Lee and Al-Hawamdeh (2004) also point out that communication strategy is a key ingredient to garnering and rallying total support and commitment of the stakeholders toward the achievement of objectives. Oweis (2013), furthermore, acknowledges that communication strategy refers to the conscious and purposeful communication plans and strategies that are put in place when there are inadequate structures to carry the message to the receivers.

Moreover, Oxford (1990) also indicates communication strategies to overcome problems inherent in the communication process. Another definition of communication strategy by Brown (2014) positions communication strategy to mean conscious attempts to rectify and correct communication problems to achieve the proposed communicative goal. Again, Lin (2015) defines communication strategy as a systematic conversation skill used by a sender to convey the meaning of his or her message when encountering linguistic difficulty.

Communication strategies can influence effectiveness and efficiency, engagement, and public perception. Communication strategies are used to clarify any policies, plans, objectives, operational activities, and strategies while providing stakeholders with the opportunity to provide feedback with minimal or no challenges in the communication process. In effect, communication strategies are intentional plans designed to provide solutions to communication challenges

confronting stakeholders and consumers to achieve a common purpose or goal. Communication strategies also involve stakeholders and consumers acquiring effective communication skills to address communication challenges in the industry. Therefore, communication strategies provide a conducive platform for stakeholders and consumers to agree on meaningful communication.

Effective communication is vital for the growth and survival of any industry. For communication to be effective, it must be a two-way process (Beatty, 2015; Abbasi, Siddiqi & Azim, 2011). There must not be any unnecessary interruption in the communication process, and each party should be able to ask questions for clarity. The stakeholders and consumers should wholly interchange information (Akilandeswari, Kumar, Pavithra, Mariyam & Banu, 2015; Boykins, 2014; Lambrini & Loanna, 2014).

Effective communication requires adequate preparation to ensure that the message transferred through the communication channel reaches the target audience (Pedrini & Ferri, 2019; Akinnubi, Gbadeyan, Fashiku & Kayode, 2012; Bell, 2018). It means getting the message across to all stakeholders. Babatunde (2015), Goodman and Sanders (2017), and Bello (2017) state that for communication to be effective, it must: be a clear and concise message, have an appropriate communication channel, be encoded using the right format, have a credible source/sender, ensure that the message is not overloaded and ensure that the receiver's attention is secured. Husain (2013), House (2015), Kaps and Voges (2007), Akilandeswari *et al.* (2015), and Watt (2007) state that every effective communication effort must have accurate and reliable technical content while providing unfettered accommodation for the audience to process and understand the message to provide relevant feedback effectively. Effective communication tactics need the sender to state their ethos and purpose up front. Messages must be formatted correctly. Effective communication helps to influence decision-making positively and present decisions and solutions timely (Venkatram, 2012; Awotunde, Ayo, Ogundokun, Matiluko & Adeniyi, 2020; Baumann, 2019; Kelvin-Iloafu, 2017).

The following hypotheses were stated for the study, based on the above literature:

Hypothesis 7 (Stakeholders): Personal stakeholder challenges relates to improved communication efficiency

Hypothesis 8 (Stakeholders): Regulatory challenges relates to improved communication efficiency

Hypothesis 15 (Stakeholders): Personal stakeholder challenges relates to improved communication effectiveness

Hypothesis 16 (Stakeholders): Regulatory challenges relates to improved communication effectiveness

Hypothesis 22 (Consumers): Improved communication relates to NCA regulator challenges

Hypothesis 23 (Consumers): Improved communication relates to personal stakeholder challenges

Hypothesis 24 (Consumers): Improved communication relates to electronic and work challenges

Awareness creation: According to Adebola, Bamgbose and Adeoye (2014), awareness creation is the mechanism employed to alert defined groups of people or institutions and the general public of the existence of a phenomenon and how to reduce the challenges and maximise the benefits associated with the phenomenon. Awareness creation is a typical two-way process that fosters communication and exchange of information and ideas to improve mutual understanding and consent between the sender and the receiver (USAID, 2014). In the opinion of the International Labour Organisation (2003), awareness creation is a multiway communication or interaction process which creates a conducive atmosphere for both the sender and receiver of a message to have a mutual learning experience, build trust, empower stakeholders and strengthen their interest in communication. Awareness creation can be an effective tool to mobilise stakeholders to enforce a change in stakeholders' perception, beliefs, attitudes and behaviour regarding information being communicated. Awareness creation strategies are designed to promote mutual comprehensibility among stakeholders, as well as to enhance resource mobilisation and effectively direct traffic towards a specific phenomenon (Adebola *et al.*, 2014). Ozgur (2015) acknowledges that awareness creation is about informing and educating people on a specific issue to influence people's attitudes, behaviours and beliefs towards achieving a defined communication purpose. Awareness creation is designed to increase understanding of the message being communicated. It is regarded as constructive catalytic power to create a positive change in actions and behaviours.

Niederdeppe, Bu, Borah, Kindig and Robert (2008), Hinyard and Kreuter (2007) and Zillmann (2006) point out that awareness creation can be effective through effective message framing, accurate narratives, and improvement of visual imagery. Claire (2019) hints that awareness creation is a vital step to help the audience understand, influence opinion and motivate behaviour. The ultimate purpose of awareness creation is to attract the audience's attention to the communication process. Manickam (2014) furthermore indicates that awareness creation can be effective through TV, print, outdoor, store, the internet, competitions, and roadside drama.

Luoma (2017) notes that key steps undertaken by managers to promote effective awareness creation include scanning, planning, implementation and evaluation. Effective application of these awareness creation tools is vital for reaching a wide range of audiences to improve the dissemination of information. However, Niederdeppe *et al.* (2008) note that the effectiveness of awareness creation can be impaired through the inability to appropriately match the relevance of the awareness creation to the needs of the target audience. It can also be affected by biases in human attribution, individualistic tendencies, and ineffective journalistic norms and practices. Ozgur (2015) indicates that well-planned and thoughtfully presented awareness creation campaigns are regarded as efficient and effective mechanisms for communicating information and ideas on a specific issue to broader and geographically dispersed stakeholders.

Awareness creation is a fundamental requirement in the communication process (Awusi & Asare, 2016). Stakeholders in the communication chain should be aware of information that is required and disseminated in an industry (Okaka, Apil & Rwothumio, 2017). Awareness creation requires managers to frequently and continuously undertake open and participatory dialogue between the message's source and the receiver. Managers should plan awareness creation campaigns to effectively promote the communication of information among stakeholders, especially customers. Claire (2019) notes that awareness creation builds understanding among stakeholders and influences their opinion and behaviour. Once stakeholders are aware of policies, they are informed and enlightened on most of the policy directions. Claire (2019), furthermore, indicates that proper implementation of awareness creation includes undertaking adequate research to understand the

information needs of the stakeholders, mobilising support from internal and external stakeholders, persuading policymakers and legislators and providing information to all stakeholders.

The following hypotheses were stated based on the above literature:

Hypothesis 1 (Stakeholders): Awareness creation relates to improved communication efficiency

Hypothesis 9 (Stakeholders): Awareness creation relates to improved communication effectiveness

Hypothesis 1 (Consumers): Awareness creation relates to NCA regulator challenges

Hypothesis 8 (Consumers): Awareness creation relates to personal stakeholder challenges

Hypothesis 15 (Consumers): Awareness creation relates to electronic communication and work challenges

Moreover, awareness creation promotes good feedback among stakeholders on an issue. According to Kola (2018b), insufficient awareness of an issue can distort and truncate the communication process. Mckimm (2009) also points out that feedback is important in effective communication, which can be made possible if the sender and receiver are aware of the ingredients that promote effective communication. It will be practically impossible for stakeholders to give relevant feedback to enhance and strengthen the interests of the stakeholders in the telecommunications industry if there are no proper awareness creation mechanisms in place. Again, Hailikari, Katajavuori and Lindblom-Ylanne (2008) indicate that knowledge significantly influences stakeholders' (including customers') ability to give feedback to improve the communication process.

Additionally, stakeholders in the communication chain should be aware of information that is required and disseminated in an industry (Okaka *et al.*, 2017). Awareness creation requires communication to frequently and continuously undertake open and participatory dialogue between the message's source and the receiver. Awareness creation campaigns should be properly planned to effectively promote the communication of information among stakeholders, especially among customers in the telecommunications industry. Awareness creation is the prerequisite for effective consultation. According to Jacobson, Butterill and Goering (2005), regular consultation is a major strategy for transferring knowledge between senders and receivers, researchers and decision-

makers, and stakeholders. Regular consultation is an effective means of promoting an interactive process among stakeholders. Adisso, Borde, Saint-Hilaire, Robitaille, Archambault, Blais, Cameron, Cauchon, Fleet, Le'tourneau, Labrecque, Quinty, Samson, Boucher, Tchala, Zomahoun and Le'gare (2018) note that awareness creation enhances regular consultation processes, which is an effective means of promoting decision-making among stakeholders (including customers).

Awareness creation, furthermore, provides a fundamental platform for implementing policies, projects and programmes. The application of awareness in the telecommunications industry enhances the ability of the industry's stakeholders to communicate (Manickam, 2014). Communication is effective if all stakeholders (including customers) are aware of their interests and the appropriate means of communicating and addressing them. Hence, awareness creation needs to be carried out strategically and in line with relevant laws and procedures. Adebola *et al.* (2014) note that effective stakeholder communication strategies depend on applying mechanisms to define stakeholders' needs and ensure that all stakeholders are well informed of the various competing interests to reduce communication challenges. Creating awareness also requires an understanding of traffic communication in the telecommunication industry. The stakeholders must be aware of the flow of traffic among users of the telecommunication services. Once the stakeholders are aware of the traffic in the industry, it will better serve the communication interests of the stakeholders.

Similarly, Ozgur (2015) posits that effective communication awareness in the telecommunication industry can encourage stakeholders to have a common understanding and opinion of traffic communication. Di Taranto, Muppirisetty, Raulefs, Slock, and Svensson (2014) researched consumer awareness of how fifth-generation sites might benefit traffic management. Again, Ahmed, Li, Waqas, Sheraz, Jin and Han (2018) note that awareness improves traffic communication among device-to-device users. It can be viewed that there is a need to create awareness of traffic communication in the telecommunication industry in Ghana.

Traffic communication: It is applied in health science, transportation, telecommunication, management, and sports, among others (Mišić, Sporns & McIntosh, 2014; Bauza & Gozalvez, 2013; Meneguette Filho, Guidoni, Pessin, Villas & Ueyama, 2016). Therefore, traffic management

is important in any meaningful operation in an organisation. Traffic has attracted many definitions and meanings from many experts. In defining traffic in the context of humans and transportation, Hobbs and Jovanis (2020) define traffic as the movement of people and goods from one location to another along a defined guideway (facility, pathway, route, electronic). This definition comprises critical aspects such as human beings or goods or services; and transportation modes such as road, rail, air, and maritime using vehicles, trains, aeroplanes, and ships, respectively. Traffic occurs due to the large volume of humans, goods, and services being moved from one defined place to another defined place resulting in congestion.

Traffic is one of the highly featured indicators in communication among stakeholders and consumers in the telecommunication industry. In the telecommunication industry, traffic can be defined as the amount of data or the number of messages sent over a circuit over a specific period. Traffic in the industry analyses the relationship between attempts by users of the telecommunication services (voice and data) over traffic-sensitive equipment and the speed with which the telecommunication services (voice and data) are completed. Traffic is the application of a circuit to send a message over a distance within a defined period. According to the International Telecommunication Union (1988), traffic is the process of arrival and release of demands for resources in a network. Freeman (2019) hints that traffic is the messages transmitted and received over a communication channel. Traffic in telecommunications can be grouped into voice traffic, data traffic and image traffic. Understanding the concept of traffic in stakeholder communication allows stakeholders to determine the amount of bandwidth they need in their circuits for data and voice calls. In the application of telecommunications, traffic is the utilisation of the IP addresses by telecommunication to connect or retrieve information stored in a location different from where IP addresses are located, in a specific period, creating overcrowding. The overcrowding of the server results in delays in information retrieval, normally classified as traffic.

Oduro-Gyimah and Boateng (2018) note that telecommunications network traffic determination is an important approach that ensures efficient network planning and management. Telecommunication network traffic is univariate. In most instances, telecommunication prediction models have mostly been concentrated on single-input and single-output traffic. It must be noted that telecommunication network traffic assessment and prediction are vital strategies that enhance

network planning and management efficiency in the telecommunication industry (Yu, Song, Fu, & Song, 2013; Yang Guo, Jin & Wang, 2016). It also ensures that stakeholders' interests are protected and respected. The provision of accurate traffic information enables timely monitoring and management of a traffic network in any field (Djahel, Muntean & Murphy, 2015). Effective estimation and control of traffic in any field are highly dependent on the application of information and communication technologies (Kouvelas Chow, Gonzales, Yildirimoglu & Carlson, 2018). Therefore, it implies that information, communication technology, and traffic go hand in hand. The higher the stakeholder dependence on the information, the higher the volume of traffic recorded at any period. Traffic in the telecommunication industry is highly influenced by charges for telecommunications services and products (Wallsten, 2001).

One of the major tools managers in telecommunication service providers employ is frequently communicating traffic (voice, data and image) in the telecommunication network to stakeholders. Freeman (2019) defines traffic in the telecommunications industry as the transmission of messages/information by a person, which is received over the telecommunications network using a communication channel. It also includes the quantification of the usage of the telecommunications network. Three key traffic modes in the telecommunications industry are voice, data and image. The cost of the usage of the traffic in the industry must be frequently communicated to all relevant stakeholders in the industry, especially the industry regulator and the consumers of the telecommunication services.

Traffic in the telecommunication industry can be communicated by sending text messages to consumers and news releases to the general public to inform them of the nature of traffic, the speed of the traffic, the cost of the traffic and challenges in the traffic. Once the traffic issues in the telecommunication industry are communicated to the consumers, the regulators and other stakeholders in the industry, it will help promote effective communication among the telecommunication service providers and the other stakeholders in the industry. Since traffic communication forms the basis of the relationship between the service providers and the consumers, the effective communication of all the relevant matters concerning the flow of traffic will pave the way for effective relationships and minimise agitations and unrest in the industry.

The surest way to manage the traffic flow in the telecommunications industry is by establishing a relevant traffic monitoring system (Haryadi, 2013). The monitoring of the traffic system in the industry will safeguard the interests of the customers and the telecommunications operators. It will enable regulators of the industry to effectively monitor and supervise the operation of the telecommunication providers and the consumers in the industry. It is mostly carried out through lawful interception of traffic movement over the use of voice data that can disrupt the smooth flow of traffic for other consumers (Dawadi & Shrestha, 2017).

According to Meneguetto *et al.* (2016), traffic communication is one of the major indicators in accessing the effectiveness of the telecommunications industry. Therefore, traffic is the amount of data or the number of messages sent over a circuit over a specific period. This amount of data, or the number of messages provided by the telecommunication service providers and used by the consumers, are regulated by national laws and policies regulating the telecommunications industry. Effective adherence to traffic policies in the telecommunications industry is based on how well the policies are implemented and monitored by the relevant stakeholders. Implementation and monitoring techniques used by the telecommunications industry enable effective mainstreaming of traffic communication strategies and policies.

The following hypotheses were stated based on the above literature:

Hypothesis 2 (Stakeholders): Traffic communication relates to improved communication efficiency

Hypothesis 10 (Stakeholders): Traffic communication relates to improved communication effectiveness

Hypothesis 2 (Consumers): Traffic communication relates to NCA regulator challenges

Hypothesis 9 (Consumers): Traffic communication relates to personal stakeholder challenges

Hypothesis 16 (Consumers): Traffic communication relates to electronic communication and work challenges

Improving traffic communication among the telecommunication industry's stakeholders (including customers/consumers) is important. Information is used differently by different actors depending on their interests. Hence, there cannot be any effective stakeholder communication

interest management without a proper understanding of the concept of information related to traffic communication. Information forms the cardinal pillar of effective communication (Madden, 2000). Poor feedback in communicating traffic issues in the telecommunication industry affects the management of the stakeholders' interests. Oduro-Gyimah and Boateng (2018) note that providing appropriate feedback in the telecommunications industry promotes efficient network planning and management among telecommunications service providers. Communicating information on traffic in the telecommunications industry forms the basis for any successful management of stakeholders in any industry (Aditya, 2018). It also ensures that stakeholders' (including customers') interests are protected and respected. Communication in the telecommunications industry is completed and becomes effective when all the operational information necessary (including traffic communication) for the consumption of relevant stakeholders (including consumers) is released timely by the telecommunication industry's regulator and the telecommunication service providers. Consumers also express their satisfaction and reservation about the traffic communication through feedback. There is, therefore, some relationship between traffic communication and appropriate feedback.

Relevant operational information: Information comes in different forms and is used for different purposes. The study, however, concentrated on information for operational purposes. Operational information forms the basis for any successful management of stakeholders in any industry. Operational information relates to the core operations in an industry. Aditya (2018) indicates that operational information is derived almost entirely from internal sources, is highly detailed, relates to the immediate term, is task-specific, is prepared constantly and frequently, and is largely quantitative though some aspects are qualitative. Operational information must be accurately disseminated to relevant stakeholders to lead to effective decision-making in the telecommunication industry.

Communication in the telecommunications industry is complete and becomes effective when all the operational information necessary for the consumption of the relevant stakeholders is released timely by the industry regulator and the service providers. Such operational information must be correct and concise. Correctness and appropriateness are the foundation of effective communication of operational information (National Institute of Agricultural Extension

Management, 2010). Correctness and appropriateness make the source of the communication credible (Juneja, 2020). Any operational message saddled with ambiguity is bound to fail and will not achieve its purpose. The message being communicated must be clear and devoid of uncertainties. The message must be appropriate and must satisfy the needs of the senders and the receivers. Customers report poor service delivery to the National Communications Authority and the telecommunications service providers without making follow-ups to know the outcomes of their complaints (Eduku, 2017; Mensah, 2012). Most consumers' complaints are not attended to or responded to by the telecommunications providers regularly and promptly. The low mean recorded by this indicator could also result from unclear, unspecific and unconcise information communicated among stakeholders in the industry.

The stakeholders in the telecommunications industry are complex and sophisticated; therefore, any communication with any stakeholder must not have grammatical errors and incorrect sentence construction. The message must undergo rigorous proofreading. Effective communication possesses reliable and correct statistical data and analysis, and appropriate discussions should be included. The content of the message must be designed according to the requirement of each stakeholder. The channels employed to transfer the message to the receiver must be correct and appropriate. The sender must weigh each communication channel thoroughly and select channels that are appropriate and recognised by the receiver (Cohn, 2007).

The regulator and the service providers must ensure that operational information provided to the stakeholders contains only the relevant information they require. For effective communication to take place, the message must be succinct. The message must be straight to the point without overburdening the receiver. The regulator and the service providers must carefully encode and transfer messages to the receivers. A carefully encoded message attracts the receiver's attention, and the message becomes easily decodable within the shortest possible time. The information presented in the message must be arranged in a logical order with a coherent sequence. Baumann (2019) notes that it is important to ensure that every example used in the message is persuasive to convince the receiver that it is relevant to their needs, specific to the message being communicated and that it is detailed enough to inform clear understanding to make messages concise, (Akilandeswari *et al.*, 2015).

The following hypotheses were stated based on the above literature:

Hypothesis 3 (Stakeholders): Public information systems relates to improved communication efficiency

Hypothesis 11 (Stakeholders): Public information systems relates to improved communication effectiveness

Implementation and monitoring: Every successful execution of any project or policy requires comprehensive monitoring and evaluation of the activities of all players in the industry. It is necessary to recognise the importance of high-quality monitoring and evaluation systems because they offer tremendous opportunities to increase the relevance and utilisation of evaluation (Curry, 2018; Kimweli, 2013). The implementation of the concept of monitoring and evaluation in any operation is aimed at improving quality and efficiency in the execution of mandates and functions by players in the industry through tracking the progress of activities and performance review (Niyivuga, Otara & Tuyishime, 2019). According to Curry (2018), monitoring and evaluation represent two elements used to assess the merit or worth of an organisation or programme, encompassing assessment of both performance and impact for a broad range of different audiences and purposes. Njenga and Kabiru (2009) define monitoring as the continuous and systematic gathering of data and information during implementation policies, projects, programmes, activities and functions.

Njenga and Kabiru (2009) also define evaluation as a periodic and systematic gathering of data and information to make informed judgments about implementing policies, projects, programmes, activities and functions. Similarly, Yusuf, Otonde and Achayo (2017) indicate that monitoring is a continuous function that utilises systematic processes to collect data related to specified project indicators. The World Bank (2007) posits that monitoring is a continuing function that aims primarily to provide an assessment of an ongoing intervention with early indications of progress and achievement of results, while evaluation is the systematic and objective assessment of an ongoing or completed project, programme, or policy, and its design, implementation and results.

Yusuf *et al.* (2017) furthermore hint that evaluation is an organised and objective assessment of an ongoing or concluded policy, programme/project, its design, execution and results.

An effective monitoring and evaluation exercise improves current and future management of outputs, outcomes and impact of a project or policies. The monitoring activity in the telecommunications industry is intended to provide regulators of the industry and key stakeholders with ample information on the activities and occurrences in the industry. The telecommunications regulators are provided with the necessary data to ascertain the quality of services delivered by the telecommunications service providers. Similarly, based on the definition of monitoring and evaluation, service providers will also be able to evaluate the quality of services they deliver to stakeholders and devise means to communicate with them effectively. Effective monitoring and evaluation activities enable stakeholders to access timely, relevant, efficient, effective, and impactful data to assess the progress and sustainability of policies and programmes implemented in an industry (Myrick, 2013; Kissi, Agyekum, Baiden & Tannor, 2019).

Promoting effective strategic communication in the telecommunications industry requires the implementation and monitoring of operations of the telecommunications service providers by the telecommunications industry regulator (National Communications Authority). The regulator must develop and implement feasible and practical measures to streamline the operations in the industry. According to Cassidy and Ball (2018), effective monitoring and implementation in the telecommunications industry demand the regulator to understand its functions and how to perform them without any obstacles effectively. Effective monitoring and implementation in the telecommunications industry boost the confidence of stakeholders, especially the consumers (Cassidy & Ball, 2018).

O'Toole (2000) also points out that the core of policy or programme implementation and monitoring is the ability to create effective awareness among all the stakeholders in the industry. It is not an exception in the telecommunications industry, as policy implementation requires all stakeholders' understanding and involvement. Tezera (2019) indicates that policy implementation and monitoring are key steps in any successful policy development circle. These cannot be achieved if the project implementers and beneficiaries are not properly educated and aware of the

content and context of the policy. Awoke, Beyene, Kloos, Goethals and Triest (2016) observe that raising awareness improves pollution control policy implementation and monitoring. Also, Twaakyondo (2011) indicates that a lack of awareness about Internet governance has a detrimental effect on policy implementation.

Hudson, Hunter and Peckham (2019) note that when people are aware of the various issues in an industry, it becomes easy for them to identify the means of increasing the effectiveness of policy implementation and monitoring, as well as factors that can cause implementation and monitoring not to achieve its intended objectives.

The following hypotheses were stated based on the above literature:

Hypothesis 7 (Consumers): Implementation and monitoring relate to NCA regulator challenges

Hypothesis 14 (Consumers): Implementation and monitoring relate to personal stakeholder challenges

Hypothesis 21 (Consumers): Implementation and monitoring relate to electronic communication and work challenges

The telecommunication industry has many regulations, policies, projects and legislations due to its unique nature and application of highly sophisticated technology. There is a need to ensure that these regulations, policies, projects and legislations are implemented and monitored periodically to achieve their objectives, outputs and impacts. According to Niyivuga *et al.* (2019), implementation and monitoring in the telecommunication industry improve quality and efficiency in executing mandates and functions by stakeholders, tracking progress and performance. There is a need to access relevant information from stakeholders to effectively implement and monitor regulations, policies, projects and legislation in the industry. Such implementation and monitoring of information can be gathered through appropriate feedback from the stakeholders. Feedback is considered an essential component of the communication process. Such feedback information must be succinct, relevant and concise (Baumann, 2019). Feedback is vital in facilitating stakeholders' communications to monitor, evaluate, and regulate their concerns in an industry (Ferguson, 2011).

Feedback is also vital in promoting effective implementation and monitoring activities in the industry.

Appropriate feedback: Feedback is the information the receiver provides in the communication process. There cannot be effective stakeholder communication interest management without a proper understanding of the concept of information in communication. Information forms the cardinal pillar in any effective communication. It is important to enhance information gathering, processes, storage, and dissemination among stakeholders in the telecommunications industry to promote communication among stakeholders. Madden (2000) explains that one of the most difficult concepts in any field is the lack of a unified definition of information as a concept. Information is an important resource that cannot be overlooked by any stakeholder in any business, political, bureaucratic, or scientific environment.

According to Zins (2007), information comprises messages a sender uses to connote one or more concepts within a communication process to increase knowledge among the recipients. Losee (1997) defines information as one or more statements of facts received by humans that have some form of worth to the recipient. Information can be defined as an idea or knowledge that have value and worth, communicated by one person or institution known as the sender, and received by a person or institution known as the receiver. Information has the characteristics of the output of a process.

Feedback is considered an essential component in the communication process, though it comes with challenges. Feedback is a vital ingredient in facilitating stakeholders' communication effectiveness to monitor, evaluate, and regulate their stakeholders' concerns in an industry (Masantiah, Pasiphol & Tangdhanakanond, 2018; Ferguson, 2011). Feedback is the last stage in the communication process and provides a platform to ensure the receiver has received the message communicated by the sender and has interpreted the message accurately in the same way the sender intended it to be understood. The effectiveness of communication is improved with feedback. Feedback assists the sender in ascertaining the efficacy of the communicated message. According to Dixit (2018), feedback is the output of action returned from the receiver to the sender. Feedback

occurs when a message receiver gives back a response to the sender. Feedback generates responses in a communication process.

Jug, Jiang and Bean (2019) define feedback as the personalised information based on direct observation crafted and delivered so receivers can use the information to achieve their best potential. DeVito (2009) notes that feedback is the response from an audience that enables the sender to evaluate the effectiveness of the message sent. According to Omer and Abdularhim (2017), feedback is described as information regarding stakeholders' response to the communication process to improve the latter. The ability of a stakeholder in a project, policy, industry, or nation to provide and receive timely feedback is key for effective communication (Ion, Barrera-Corominas & Tomàs-Folch, 2016). According to Ahea, Ahea and Rahman (2016), feedback can be made more efficient by enhancing understanding of the essence of achieving communication purpose, simplifying the communication process, providing quality information to stakeholders, selecting the appropriate communication channel and enhancing the provision of positive feedback.

Effective identification and grouping of the various types of feedback can be secured during a communication process and is important to effective communication of the various interests of the consumers in any industry. Hardavella, Aamli-Gagnat, Saad, Rousalova and Sreter (2017) group the various types of feedback into informal, formal, formative, and summative feedback. Dixit (2018) notes that feedback has four key types: positive feedback, negative feedback, positive feedforward, and negative feedforward. Keya (2010), furthermore, hints that feedback can be grouped into positive/negative feedback, immediate/delayed feedback, and simple/complex feedback. Again, Josh (2017) points out that feedback comes in seven different types: positive feedback, negative feedback, deliberate positive feedback, deliberate negative feedback, immediate feedback, delayed feedback and no feedback. Feedback in the communication process can be in the form of verbal feedback or nonverbal feedback.

Hattie and Timperley (2007) indicate that feedback is conceptualised as information provided by a stakeholder(s) based on his or her understanding of the messages communicated. Feedback is based on the consequence of a communicated message between the sender and the receiver.

Effective feedback positively impacts the communication process and enhances the ability of stakeholders to analyse and assess the communication processes in the telecommunications industry (Mckimm, 2005; Agricola, Prins & Sluijsmans, 2019). Most messages communicated do not achieve their intended outcomes and impact due to a lack of or inappropriate feedback from the receiver.

Feedback enables one to assess the level of understanding between the sender and receiver and to lead them to make accurate decisions on an issue. According to Dixit (2018), feedback plays a major role in communication among stakeholders because it is the main basic ground which helps the sender to understand whether what he or she has spoken to the receiver is clear or not, understood or not; and to accept the relevant changes to be made to the message. Feedback in the communication process can be appropriate or inappropriate depending on the responses to the message sent by the sender. Appropriate feedback is specific, descriptive, relevant, timely, clear and valid, while inappropriate feedback is general, evaluative in nature, irrelevant, untimely, unclear and inaccurate (Friday, 2013).

Communication is completed if the sender receives feedback on the message he or she has sent to the receiver. Feedback helps the sender evaluate whether the message has achieved its purpose. Therefore, it requires the receiver to put in the effort to make the communication perfectly complete. The feedback must be concise and to the point, devoid of unnecessary obstacles that thwart the feedback flow and can defuse the feedback's content. The receiver must ensure feedback is delivered promptly to complete the communication. In most instances, factors that affect the formulation and delivery of messages also affect the formulation and flow of feedback. (Hardavella *et al.*, 2017). In the telecommunications industry, feedback is provided by stakeholders who receive a message.

Feedback from the stakeholders must be evaluated periodically to serve the interests of the stakeholders and provide an opportunity for them to ascertain whether the information communicated to them was accurate and well understood by them. In most instances, feedback in the telecommunications industry must be deliberate in bringing change in the communication systems in the industry (Watts, 2007; Uhm *et al.*, 2015). Appropriate feedback clears doubt among

stakeholders who sent the message and removed the stress from the minds of the stakeholder who received the message since the receiver can verify the issues he or she wants the sender to address. Feedback plays a vital role since, if given properly, stakeholders can implement relevant and feasible decisions that all players in the industry will accept. It motivates the stakeholders and boosts their morale so that they can interact efficiently with open mindsets (Dixit, 2018). The regulator and the telecommunications operators need to be circumspect in evaluating feedback received from other stakeholders in the telecommunications industry, as every feedback from each stakeholder has unique features (Josh, 2017; Sharma, 2017).

The following hypotheses were stated based on the above literature:

Hypothesis 4 (Stakeholders): Appropriate feedback relates to improved communication efficiency

Hypothesis 12 (Stakeholders): Appropriate feedback relates to improved communication effectiveness

Hypothesis 4 (Consumers): Appropriate feedback relates to NCA regulator challenges

Hypothesis 11 (Consumers): Appropriate feedback relates to personal stakeholder challenges

Hypothesis 18 (Consumers): Appropriate feedback relates to electronic communication and work challenges

Regular consultations: Stakeholder consultation is increasingly being promoted by policymakers and implementers, international and national organisations and researchers as an important pathway to achieving impact. Stakeholder engagement and consultation have gained traction in many fields of practice due to their ability to enhance the excellent delivery of policies and projects (Jolibert & Wesselink, 2012). Over the last decades, there has been a shift in recognition of the importance of seeking feedback and understanding the views of those who support a policy, project and industry and have a vested interest in the policy, project and industry (Emanuel, Wendler, Killen & Grady, 2004; Ives, Damery & Redwod, 2013). There has been an increase in the need to understand stakeholders' beliefs, attitudes and behaviours. Mere word-of-mouth feedback from those who interface with policies and projects was considered in the past. However, mere word-of-mouth is not of strategic importance.

Consultation is about seeking advice and information from stakeholders. Dickert and Sugarman (2005) hint that consultation is the process of eliciting feedback, criticism, and suggestions and seeking approval or permission from stakeholders. Effective consultation recognises and accommodates the relevant particularities in the industry for policies or projects (Valdiserri, Tama & Ho, 1988). Morgan (2019) indicates that stakeholder consultation involves the development of constructive, productive relationships over the long term to create relationships of mutual benefit and to identify trends and emerging challenges which are currently or will in the future impact the project, policy or business. Consultation can take the form of a specific project or policy-based consultation, as well as periodic consultation used to track and monitor stakeholder perceptions within the broader operating environment.

According to Morgan (2019), stakeholder consultation is a valuable source of information to improve project and policy design and outcomes, effective means of identifying and controlling external risks, and effective means of creating collaboration and partnerships. Effective regular stakeholder consultation and engagement involve the identification of potential stakeholders, identification of the right approach to engage and consult with stakeholders and the identification of rationales for engaging and consulting stakeholders (Boaz, Hanney, Borst, O'Shea & Kok, 2018). Motuapuaka, Whitlock, Kato and Uhl (2015), and Thizy, Emerson, Gibbs, Hartley, Kapiriri, Lavery, Lunshof, Ramsey, Shapiro, Singh, Toe, Coche and Robinson (2019) note that undertaking consultation in the formulation and implementation of projects and policies establishes credibility in project and policy implementation, anticipates controversy in project and policy implementation, ensures transparency and accountability in project and policy implementation, improves relevant project and policy implementation in the eyes of all stakeholders, enhances quality in project and policy implementation, and increases dissemination and uptake of finding related information to the implementation of policies and projects.

Andersson and Mattsson (2009) note that consultations have been related to a better understanding of complex issues affecting stakeholders and improving stakeholders' satisfaction and successful implementation of policies and projects. Andersson and Mattsson (2009) further note that stakeholder consultation enables decision-making processes to be more informed; promotes greater satisfaction from stakeholders with the outcome; provides greater opportunity for policies and

projects to be successfully implemented since stakeholders will own the policies and projects; and promotes good governance and transparency. Specifically, adequate consultation identifies and tracks the needs and expectations of stakeholders; identifies and tracks perceptions and attitudes of stakeholders; provides feedback on specific planned developments, policies and projects; evaluates implementations and actions of planned developments, policies and projects; and establishes the brand values. According to Nyirenda, Gooding, Lora, Kumwenda, McMorrow, Everett and Desmond (2018), regularly consulting with stakeholders and incorporating their distinctive values, culture, and social practices in the design and implementation of policies and projects in any industry demonstrates respect for potential participants, improves trust, and increases participation and long-term engagement in the research.

Effective communication in the telecommunications industry is based on the ability of the stakeholders to organise regular consultations to understand their needs and interests (Rabinowitz, 2020). It is a strategic means of creating a conducive environment to promote effective communication (Johnson, 2019; Zizka, 2014). The environment in which a message is communicated significantly influences the effectiveness of the communication process (Sanina *et al.*, 2017) because the message's meaning can be improved or distorted within an environment where there is poor consultation among the stakeholders. The industry regulator and the telecommunications service providers must evaluate the environment against the needs of the stakeholders through effective and regular consultations. It is based on the fact that receivers of messages may have different tastes of information at different points in time and circumstances, which can be achieved through regular consultation. Regular consultations must be conducted to elicit appropriate feedback from the stakeholders to achieve the purpose of communication. Regular stakeholder consultation processes in the telecommunications industry can provide opportunities for the stakeholders to get vital information communicated to them and receive relevant feedback on a timely basis. Regular consultation among stakeholders will enable them to be informed on policies and raise the necessary concerns on industry policies implemented by the regulator and the changes in the services provided by the telecommunications service providers.

There must be regular consultation to get the views of all relevant stakeholders (including consumers) to improve traffic communication in the telecommunications industry. Effective

promotion of traffic communication among stakeholders requires information gathering, processes, storage, and dissemination among stakeholders in the industry. It can be done effectively through regular consultation among stakeholders. Regular consultation among stakeholders is used to improve the usefulness and appropriateness of traffic communication (Juneja, 2020). Regular consultation among stakeholders is an effective means of assessing and predicting telecommunications network traffic to enhance network planning and management efficiency in the industry (Yu *et al.*, 2013). Stakeholder consultation is increasingly being promoted by policymakers and implementers, international and national organisations and researchers as an important pathway to achieving policy impacts. Regular consultations in the telecommunications industry help stakeholders understand stakeholders' beliefs, attitudes and behaviours to improve traffic communication management.

Moreover, to ensure that regulations, policies, projects and legislations are properly implemented and monitored, all stakeholders must agree on the mode and means of implementation and monitoring. Regular consultation is used by stakeholders to collect feedback, criticism, and suggestions and to seek approval or permission from stakeholders (Dickert & Sugarman, 2005). The stakeholders must be regularly consulted, their comments, views and opinion sought and integrated into the strategies deployed to implement and monitor activities in the telecommunications industry. Regular consultation must be carried out periodically to enable stakeholders to identify and accommodate relevant particularities in the industry. According to Morgan (2019), regular consultation provides constructive and productive relationships to create relationships of mutual benefit; and to identify trends and emerging challenges, which are currently or will in the future impact regulations, policies, projects and legislations implemented and monitored in the industry.

The provision of appropriate feedback by the stakeholders (including customers) in the telecommunications industry must be within the confines of national and industry regulations and legislation. Information in the form of feedback becomes useful to stakeholders in the industry if the consultation process is effective. The stakeholders must be consulted regularly to solicit their feedback on utilising telecommunications services and products, as well as the impacts of policies implemented in the industry. Boaz *et al.* (2018) indicate that to solicit effective and appropriate

feedback on issues in the telecommunications industry, stakeholders identify potential stakeholders, the right approach to engage and consult stakeholders, and the rationales for engaging and consulting stakeholders. Regular consultations among stakeholders in the telecommunications industry improve the credibility of feedback provided by the stakeholders. Regular consultations among stakeholders also improve transparency, enhance quality, and increase the dissemination of information. It implies that feedback depends on regular consultations among stakeholders, with particular emphasis on the customer or consumers. Based on the above information, the study predicts a positive link between appropriate feedback and regular consultations in the telecommunications industry, which led to the establishment of the following hypotheses.

Hypothesis 5 (Stakeholders): Regular consultation relates to improved communication efficiency

Hypothesis 13 (Stakeholders): Regular consultation relates to improved communication effectiveness

Hypothesis 5 (Consumers): Regular consultation relates to NCA regulator challenges

Hypothesis 12 (Consumers): Regular consultation relates to personal stakeholder challenges

Hypothesis 19 (Consumers): Regular consultation relates to electronic communication and work challenges

Use of public information systems: One of the most reliable means of promoting stakeholder communication interests in any industry is the application of public information systems to disseminate information among stakeholders. Public information can be defined as an information system designed by a public or private organisation, but for public consumption only, notwithstanding the owner structure of the system. Public information systems are information systems available for public consumption (Wang, Xiao, Suzek, Zhang, Wang & Bryant, 2009). Sundgren (2005) indicates that public information systems are specialised information systems designed to be used by the general public. A public information system is a specialised system designed to present information to the general public or a large audience within a specified period (Shea & Garson, 2010).

The utilisation of public information systems to disseminate information among stakeholders has increased over the years due to the advancement of information and communication technology

(Alam & Brooks, 2014). According to Tsidkenu (2016), public information systems are useful in stakeholder communication interest management by breaking physical and time barriers among stakeholders in the industry, managing information overload by making information retrieval easier through computerised information management systems, enlightening stakeholders on new policies and projects, and promoting harmony among stakeholders.

Sundgren (2005) and Orman (1989) indicate that key characteristics of public information systems include:

1. Information systems that make public data available to the public
2. Information systems support individual actors who need/want certain tasks vis-a-vis a public authority or institution in the public interest
3. Information systems that support social processes involving citizens, public authorities, and other players such as companies and civil society organisations
4. Information systems that support business tasks vis-a-vis individual actors, including persons, companies, civil society organisations
5. News media and their systems for informing the general public, scrutinising power, and advocating citizen interests
6. Information systems that support other public information systems
7. Infrastructural systems, such as systems coordinating agency task management and customer task management.

A key communication strategy in the telecommunications industry is public information systems. Public information systems include all information systems available for public consumption, either in the public or private sectors (Sundgren, 2005). The application of public information systems improves the dissemination of information to a larger group of people within a dispersed geographical setting. Tsidkenu (2016), and Markgraf (2019), point out that the application of public information is an effective communication strategy in the telecommunications industry of Ghana because public information systems help stakeholders, particularly the industry regulator and the telecommunications service providers, to break physical and geographical barriers of communication. Using public information systems also improves the management of information overloads and quick information retrieval. In the telecommunications industry, public information

can be effectively disseminated through the application of large display technology, such as web-based services, LED displays and networked display monitors, and billboards and public address systems (Wang *et al.*, 2009).

The following hypotheses were stated based on the above literature:

Hypothesis 3 (Consumers): Public information systems relate to NCA regulator challenges

Hypothesis 10 (Consumers): Public information systems relate to personal consumer challenges

Hypothesis 17 (Consumers): Public information systems relate to electronic communication and work challenges

Promotion of stakeholder alignment: Stakeholder alignment is fundamental for successfully formulating and implementing stakeholder strategy (Casey, 2019). There cannot be effective communication in the telecommunications industry without properly aligning the stakeholders' interests and needs (Herald, Alexander, Beich, Mittler & O'Hora, 2012). According to Smith and Murphy (2019) and Spires (2017), not paying attention to the importance of stakeholder alignment in policy formulation and implementation can be detrimental to the achievement of the policy's objectives. Stakeholder alignment allows each stakeholder and the inputs of stakeholders to be channelled effectively throughout a policy or project formulation and implementation. Stakeholder alignment is a major process that wins the trust and confidence of stakeholders in the industry. Halvorson (2017) defines stakeholder alignment as the agreement or cooperation among stakeholders who have a common cause or a position of agreement or alliance. Stakeholder alignment improves strategic planning in policy and project implementation, ownership of projects and policies, and the overall impact of policy and project implementation.

According to Casey (2017), the development of effective communication strategies for all stakeholders in the telecommunications industry is based on the ability of the managers and regulators to undertake stakeholder alignment between the industry players effectively. The inability of managers of the telecommunications industry to properly align stakeholders hampers the effective flow of communication among the stakeholders (Gardner, 2000). It is, therefore, important to get all the stakeholders on the same page when communicating in this industry

(Gardner, 2000). There must be proper designs to map out stakeholders and identify the interests and communication needs of the stakeholders to achieve proper stakeholder alignment in the telecommunications industry (Burns, 2018).

Casey (2019), Mgirard (2018), and Rodriguez (2020) note that stakeholders can be effectively aligned by identifying the relevant stakeholders, involving stakeholders and encouraging the stakeholders to participate in the activities in the industry fully. Accurate identification of stakeholders' needs, developing stakeholders' targeted message and getting the stakeholders aligned continuously at every stage in the industry are important considerations.

The following hypotheses were stated based on the above literature:

Hypothesis 6 (Stakeholders): Promotion of stakeholder alignment relates to improved communication efficiency

Hypothesis 14 (Stakeholders): Promotion of stakeholder alignment relates to improved communication effectiveness

Hypothesis 6 (Consumers): Promotion of stakeholder alignment relates to NCA regulator challenges

Hypothesis 13 (Consumers): Promotion of stakeholder alignment relates to personal stakeholder challenges

Hypothesis 20 (Consumers): Promotion of stakeholder alignment relates to electronic communication and work challenges

4.9 COMMUNICATION INTERESTS AMONG STAKEHOLDERS

Communication interests form the basis for communication among stakeholders in any industry. Understanding the communication interests in any industry promotes cohesion and fosters effective communication. Communication interest analysis has become important in this era of varied communication channels where the appetite to deceive the receivers of communication is high, the tendency to conceal information is on the ascendency, and the exaggeration of information is high (Godfrey-Smith & Martínez, 2013). This calls for the identification of common

communication interests among stakeholders and consumers in the communication process to improve communication in the industry. Analysis of the communication interests among stakeholders is vital for any successful communication campaign, since they have different interests that must be identified (Gómez-Carrasco, Guillamon-Saorin & Garcia Osma, 2021; Crane & Livesey, 2017).

The most important issue to consider in stakeholder communication is the communication interests of the stakeholders in the industry. According to Baker (2013), communication interests is the key to achieving success, and this interest can be in the form of interest in the subject matter, interest in the audience, interest in explaining the subject matter to the audience and interest in the part of the sender in messages communicated to the receiver. Without interest, stakeholders cannot communicate effectively (Baker, 2018). Effective communication occurs when the stakeholder or consumer knows and values the interests of other stakeholders. The stakeholders must maintain a minimum degree of common interest among them to maintain communication.

Management of communication interests is important to minimise situations where the interest of one stakeholder or consumer will conflict with the interest of other stakeholders or consumers, thereby distorting the flow and purpose of the message being communicated (Roberts, 2015). The communication interests of stakeholders and consumers vary in the telecommunications industry. Hence, every stakeholder must access the communication interests of other stakeholders and consumers to minimise stakeholder conflicts.

Managing stakeholder engagement and consultation is critical to the success of communication interest management. The communication interests of the various stakeholders must be managed to enhance effective communication among stakeholders (Tomasello, 2008). It must be noted that the management of stakeholder consultation is based on the ability to identify communication and other interests of stakeholders and consumers (Shannon, 2018). Therefore, the management of communication interests can be done through effective recognition of the various communication interests of all stakeholders involved in the telecommunications industry.

Stakeholder communication interests can originate from and be influenced by mass media, interpersonal views, political concerns, entertainment needs, advertising/persuasive communication, use of new technology, online platform, computer-mediated opinion and mobile communication policies, organisational policies and intercultural issues. It can also be affected by the legitimacy and power levels of stakeholders and consumers in the telecommunications industry. It is important to ensure a two-way information flow in the industry. Every stakeholder or consumer must have a conducive atmosphere to send and receive information without hindrance. Kathpalia, Ong and Leong (2019) also indicate that the proper management of the communication interests of stakeholders revolves around the ability of the stakeholders to understand the need to allow other stakeholders to ask questions and to answer the questions effectively; the ability to communicate ideas, opinions and suggestions on a timely and succinct basis; and the ability to organise stakeholders' concerns.

Proper management of communication interests also involves accurate and persuasive management of intercultural communication to prevent unnecessary cultural offences and effective management of senders and the receivers' expectations (Kathpalia *et al.*, 2019). Therefore, the stakeholders' communication interests revolve around timely and adequate reporting of issues in the industry, application of public relations strategies to reach out to a large section of the stakeholders within a short period and to undertake purposeful and targeted communication (Bourne, 2014). Based on the identified communication interests of the stakeholders in the industry, it is important to devise appropriate mechanisms to address all the various stakeholders' communication interests. The major communication interests include providing timely updates on the implementation success of policies and projects, emailing stakeholders periodically, updating websites to communicate the interests of stakeholders, making public presentations to stakeholders, and making telephone calls to targeted audiences.

Every stakeholder in the telecommunications industry has communication interests. Each stakeholder has a specific communication need that should be addressed (Roseke, 2019). Complex communication problems among stakeholders (including the unwillingness of stakeholders to share information with other stakeholders and communication deception among stakeholders) do not encourage stakeholders to frequently communicate among themselves, affecting the smooth

flow of communication among the stakeholders (Tomasello, 2008). Due to the inherent communication problems among stakeholders, it is important to assess the communication interests of all stakeholders to promote effective communication in the Ghanaian telecommunications industry (Gross, 2010). Godfrey-Smith and Martínez (2013) note that communication becomes viable and effective when there is a complete concordance of interests among stakeholders, particularly between the senders and the receivers of information. Identifying the communication interests of the stakeholders of the telecommunications industry results in appropriate coordination and sharing of information.

Effective stakeholder communication depends on the ability to identify the needs and interests of stakeholders and why these needs and interests are relevant to the stakeholders. According to Roseke (2019), communicating stakeholders' interests in the telecommunications industry depends on three key elements: stakeholder identification, stakeholder analysis and stakeholder management (Linton, 2019). Some stakeholders have both power and interest in the telecommunications industry; others have only power with no interests in the industry, while others have strong interests with no power to execute such interests. In communicating the interest of stakeholders, it is important to pay attention to the preferred communication channel, financial interests, religious and personal beliefs, demographic characteristics of the stakeholders, level of education and knowledge of the stakeholders on issues in the telecommunications industry, as well as the sources of power and interest of the stakeholders.

Ampomah (2012) notes that a high percentage of the communication interests of stakeholders in the telecommunications industry, especially in Ghana, is the communication on poor services by the telecommunications service provider. Gwynn (2017), Rowland (2018) and Thompson (2018) indicate that effective means of communicating the interests of stakeholders include the following: Rabinowitz (2020) identifies the following as some of the major interests of stakeholders: employment, racial harmony, involvement in decision-making, flexible working periods for workers, and health and safety of the employees, community members and consumers.

1. Set out the objective for communicating the interests of the stakeholders
2. Identify the interest and power of the stakeholders
3. Acquire basic knowledge and understanding of the telecommunications industry

4. Have a plan and monitoring mechanism in place to communicate the interests of the stakeholders
5. Select appropriate channels of communication to commute the stakeholders' interests
6. Explain the communication interests to the stakeholder and their associated impacts and consequences
7. Be open and transparent in communicating the interest of the stakeholders.

4.10 CHALLENGES TO EFFECTIVE COMMUNICATION

Though communication is important in an organisation, it faces many challenges and obstacles. Wroblewski (2018), Rani (2016), Jureddi and Brahmaiah (2016), Buyayisqui, Bordoni and Garbossa (2012), Klimova and Semradova (2012), Lunenburg (2010), and İşman, Dabaj, Altinay and Altinay (2003), indicate that communication barriers can be grouped into the process, attitudinal, psychological, or behavioural, cultural, language and environment barriers. These barriers obstruct the effective flow of communication and prevent stakeholders and consumers from achieving the intended communication purposes. Some of the major challenges in the telecommunications industry are poor network and service quality, forcing some consumers to often switch from one telecommunications network to another in an attempt to get good service delivery.

The study further categorised stakeholder communication challenges based on a review of literature into the following headings:

Difficulty in sharing information: Information is shared among stakeholders to build trust and develop mutual understanding among the stakeholders in the telecommunications industry (Sonnenwald, 2006). Information sharing is an effective means of ensuring that information is disseminated to the stakeholders. Information sharing is proactive or retroactive based on request. It can be in the form of information provision, clarification and confirmation, and verification of the level of understanding of policy. Information sharing is an important component of information behaviour (Davenport & Hall, 2002; Amanda & Charles, 2006).

However, information inflow is sometimes impaired by the actions and inactions of stakeholders and environmental factors. One of the major challenges in communication among stakeholders in any industry is sharing information among stakeholders. There are instances where information is available but cannot be shared easily among the stakeholders because of physical, language, legal and cultural reasons. A block in the flow of information in the telecommunications industry often hampers effective coordination of stakeholders (Jureddi & Brahmaiah, 2016; Buyayisqui *et al.*, 2012).

According to Sonnenwald (2006), key challenges in information sharing include the inability to recognise the differences in the implementation of shared symbols; the inability to share the implications of relevant information; the inability of the stakeholders to understand the differences in the role and expression of emotions when sharing information; and inability to build trust among stakeholders. Goldfarb (2014) also notes that challenges in sharing information include: differences in stakeholders' objectives and interests; and differences in the utilisation of technology in information gathering, processing, storing, retrieval and dissemination.

Khurana, Mishra and Singh (2011) indicate that challenges in sharing information can be grouped into six main levels: managerial, organisational, technological, individual, financial, social and cultural challenges. The Centre of Excellence for Information Sharing (2011) focuses its attention on cultural challenges in sharing information and acknowledges challenges involved in information sharing differences in organisational culture and trust; poor knowledge and awareness in sharing information; poor leadership and confidence level in information; and no common and agreed upon communication purpose. Therefore, the ability of stakeholders and consumers to share information in the telecommunications industry can be impacted by stakeholders' and consumers' culture, technological know-how, disintegrated communication agenda, and poor awareness of information available in the industry.

According to Hubert and Lopez (2013), other difficulties in sharing information among stakeholders in any industry include stakeholders with values, beliefs, and habits; lack of awareness of the information available in the industry; inability to manage the distance between the stakeholder that affect the rate of information sharing; differences in cultural and ethical

practices; poor stakeholder experience in information management; and time-wasting in information sharing.

Difficulty in realising new roles in the evolving telecommunication industry: The ability to formulate and assign roles to stakeholders and consumers in the telecommunications industry is necessary to promote effective communication. Allocation of new roles and responsibilities to the stakeholders promotes management efficiency. Communication among stakeholders becomes effective when all stakeholders know their roles and responsibilities (Edwards, 2019). Hence, consumers and stakeholders need to be assigned specific roles and responsibilities in the industry to promote communication interests and reduce conflict in communication. The promotion of misinformation and inadequate information is brought to a minimum among stakeholders (Capozzi, 2020).

According to Coggeshall (2010) and Knight (2016), when the roles and responsibilities of stakeholders in an organisation or an industry are clearly defined, and the stakeholders are assisted in knowing their roles and responsibilities, it positively affects the amount of time spent on executing roles, including communication roles. According to Jones *et al.* (2015), there is difficulty in realising that a new role in an organisation or industry is influenced by demand, policy context and future priorities, role clarity and standardisation; agreement and understanding of the role; and interprofessional working. Therefore, the consumers and stakeholders must understand their roles and responsibilities in the industry concerning information sharing. It will ensure that information is released on time to all consumers and stakeholders for decision-making efforts.

Mis-defined real needs and interests during communication: Communication among stakeholders is often confronted with challenges when the needs and interests in communication are not well defined. In most cases, the interests and needs of the stakeholders are not properly defined. Occasionally, certain stakeholders and consumers have hidden agendas and may interpret all communications regarding their requirements and interests. Therefore, it is essential to precisely define all communication requirements and customer interests. Baker (2013) states that when the main interest of stakeholders in communication is not properly defined concerning the other

stakeholders, it has the propensity to affect the success rate of the communication process (Godfrey-Smith & Martinex, 2013).

Working with different stakeholders with different views: It is important for all stakeholders in the telecommunications industry to fully take an active role in the issues that affect all stakeholders in the industry. Stakeholders' views are many and vary from stakeholder to stakeholder (Räisänen, Josephsson & Luvö, 2016). There are different views among stakeholders and consumers on an issue industry and must be analysed based on their strengths, weaknesses and opportunities for improvement. Giguere, Farmanova, Holroyd-Leduc, Straus, Urquhart, Carnovale, Breton, Guo, Maharaj, Durand, Légaré, Turgeon and Aubin (2018) note that when the needs and interests of stakeholders are not met, the stakeholders are not satisfied in the industry.

In the context of the above, stakeholders develop a cold attitude and are not committed to the industry. Industries need to redesign strategies geared toward stakeholders' needs and interests (Penttinen & Isomäki, 2010; Giguere *et al.*, 2018). A challenge occurs when the interests and needs of a few key stakeholders are considered when formulating policies. In contrast, the needs of most stakeholders are ignored and not properly addressed (Jebara, Cunningham, MacLure, Awaisu, Pallivalapila & Stewart, 2018).

Use of some modern communication channels: Communication is vital to relationship building. Modern communication channels have enabled stakeholders to be connected periodically from time to time and from any place in the world. The application of modern communication is important in this era of a global world. The advancement in technology has increased the available communication channels to stakeholders (Starks, 2019). Some of the modern communication channels include social media, SMS text messaging, email, blogging, voice calling, video chat, live web chat, telephone, mobile phones, intercom, broadcast media and conferences (Chiper, 2015; Terzić & Aščić, 2017).

Many such modern communication channels exist, but the application must be feasible to solve the communication needs of the stakeholders. The utilisation of modern communication channels in the industry must be related to the stakeholders' and consumers' ability to use the channel, the

time required to send information, the audience who will receive the message and the importance of the message. Terzić and Aščić (2017) note that the application of modern communication is influenced by the cost, confidentiality, safety and security, level of influence, the distance over which the communication will be carried out, the time involved in disseminating the messages, and the recipient of the message. These factors positively and negatively affect the use of modern communication channels in stakeholder communication (Oltarzhevskiy, 2019). In most parts of developing countries, many stakeholders in the communication industry are technologically inclined. The inability of the stakeholders to effectively use modern communication channels creates a major communication challenge in the industry (Williams, 2019). In most cases, a large proportion of consumers cannot use modern technology to communicate with other stakeholders in the industry due to illiteracy. Therefore, the communication interests of such consumers is affected.

Difficulty in providing feedback: In communication, feedback is important. Feedback is also considered a difficult communication issue (Hattie & Timperley, 2007; Ahea *et al.*, 2016). Feedback can positively or negatively impact the communication process because not all feedback is considered effective by the sender (Jug, Jiang & Bean, 2019). Feedback can be a major obstacle to effective stakeholder communication in the telecommunications industry. Without the delivery of quality feedback, stakeholders and consumers cannot measure the relevance and effectiveness of their message. Most stakeholders and consumers do not provide feedback on time or do not have the capacity to provide feedback at all, which affects the communication process in the industry.

In the telecommunications industry, some stakeholders and consumers attach personal sentiments to messages communicated, which affects the quality of feedback they provide. According to Andriotis (2018), the provision of feedback normally becomes difficult because receivers make feedback too personal, do not target the sender's interest, postpone feedback and do not release the feedback on time; and set vague expectations. Most feedback is also unclear, unconstructive, and dishonest, which does not serve the purpose of the communication (Duff, 2016; Jamshidian Yamani, Sabri & Haghani, 2019).

Lack of resources in ensuring effective communication: Resources play a significant role in improving communication among stakeholders. There cannot be effective communication among stakeholders without adequate resources. Resources are scarce and have competing needs affecting the number of resources allocated for effective communication among stakeholders (Harp, 2011). Suthers (2017) notes that one major means of improving communication among stakeholders is the judicious utilisation of available resources. Communication can be effective without adequate and appropriate resources. However, most stakeholders and consumers lack the resources to communicate in the industry. They do not know whom to send their messages to and which the communication should take.

Provide information on a regular and timely basis: Information is necessary for improving the effectiveness and efficiency of stakeholders' participation in policy formulation and implementation in any industry. Without information, no relevant decision can be made. However, the insufficient, irregular and untimely release of information is not fit for purpose. Sufficient information must be released on time and regularly to facilitate decision-making among stakeholders (Green, Whitten & Inman, 2011). Information expires and must be released on time (Barroso, Sandelowski & Voils, 2006). There are instances where stakeholders complain of a lack of information because one actor delayed releasing on time (Bell & Squire, 2017).

4.11 CONCLUSION

The literature review has revealed that communication is essential in the telecommunications industry. A communication breakdown can result in a breakdown in an organisation's operations. Effective communication creates a perfect platform for all stakeholders to voice their suggestions, grievances, opinions and contributions.

Communication can achieve its objectives if strategies are in place for effective communication. These strategies include awareness creation, traffic communication, relevant operational information, implementation and monitoring, appropriate feedback, regular consultations, use of public information systems and promotion of stakeholder alignment. Some challenges such as

process, physical, semantic, and psychological mitigate against effective communication. These challenges are termed communication barriers.

The Chapter reviews the literature on strategies, interests, challenges and improvements for effective stakeholder and consumer communication. Effective communication requires the selection of appropriate channels to achieve the intended outcome of the communication process. Some major communication channels include written, verbal, electronic, visual, radio and television. Stakeholders and consumers require specific channels that meet their communication needs. Communication must provide the opportunity for the sender to send accurate and reliable information to the receiver and to provide feedback at the appropriate time. It must also be a continuous process to be effective. Communication in a corporation must typically be sanctioned by management and receive approval from management and the board of directors.

Stakeholders and consumers should have a clear and specific objective before commencing any communication activity. Information is priceless in the telecommunications industry. Therefore, its dissemination among stakeholders and consumers should be carried out with precision and accuracy. A break in the communication process will result in poor and ineffective communication, and the sender will not achieve their purpose. The key process of communication includes the development of clear and accurate messages, identifying the appropriate sender for the message, encoding the message to give it a meaning, selecting the appropriate medium to transfer the message and ensuring that the receiver effectively decodes the message and send feedback to the sender to complete the communication process. Key principles that should be adhered to in the communication process in the telecommunications industry include understanding, attention, brevity, timeliness, appropriateness and feedback principles. Other key strategies for effective communication include awareness creation, traffic communication, implementation and monitoring, regular consultations, use of public information systems and promotion of stakeholder alignment.

CHAPTER FIVE

RESEARCH DESIGN AND METHODOLOGY

5.1 INTRODUCTION

Research methodology deals with the structural arrangement of actions undertaken by the researcher following research protocols, as well as the nature of the research objectives and the expected outcomes desired (Boateng, 2014; Sileyew, 2019; Goundar, 2012; Blumberg, Cooper & Schindler, 2005). The researcher adopted research methods based on a literature review and research design, which served as the roadmap for the study. The choice of a research activity requires the researcher to make choices that are consistent with the research approach and the purpose of the study (Saunders, Lewis & Thornhill, 2007).

The methodology underpinning the study is described and presented in this Chapter. The Chapter elucidates the research methods and techniques employed. The purpose of this section is to provide insights into the methods, techniques, procedures, and instruments used to achieve the overall aim of the study. It also explains how the methods were employed and applied to address the questions and objectives stated.

The study uses a mixed-method approach. The Chapter begins with the presentation of the research paradigm and the research approach, followed by the research methodology on which the study is grounded. It continues with the presentation of the research design, sampling techniques and sample size determination. Following the mixed-method tradition, a qualitative-quantitative method was used to obtain data. Data collection methods are explained, while information on ethical considerations and data analysis end the Chapter.

5.2 RESEARCH PARADIGM

This section of the study presents the main research paradigm guiding the research questions and objections. According to Saunders *et al.* (2007), research philosophy is described as knowledge development and investigating the nature of that knowledge. The importance of research philosophy in any particular study cannot be ignored. Kivunja and Kuyini (2017) indicate that objectives that underscore the research paradigm and approach are critical in determining the appropriate method to adopt. The research philosophy, therefore, has the propensity to influence how the researcher chooses to provide answers to the research objectives achieved.

A researcher whose study is predominantly focussing on facts, is likely to have a different view on the research approach, technique and method from a researcher whose research is descriptive and predominantly concerned with the feelings and attitudes of people. In light of this, several authors have identified the principles of ontology and epistemology as research philosophies which contain differences that impact the thought processes of the researcher (Blaikie, 2000; Creswell, 2003).

5.2.1 Principle of ontology

Ontology is a significant philosophical principle within the framework of research. Al-Saadi (2014) and Hussain, Elyas and Nasseef (2013) note that the principle of ontology should be placed at the very top of the methodological research hierarchy. Saunders *et al.* (2007) argue that the concern regarding the principle of ontology is with the nature of what is real. That is, the principle seeks to uncover the association between the truth that the researcher seeks to reveal and reality. Thus, researchers may have specific opinions and ideas about how the world operates, which may exert a significant effect on the approach and design of their study.

The two most common dimensions of ontology identified in the literature include subjectivism and objectivism. Subjectivism holds the opinion that social phenomena are fashioned from the shrewdness and resultant behaviour of those concerned with their existence (Hamati-Ataya, 2014; Bahari, 2010; Evens, 1999). Researchers with a subjective worldview tend to study the details of situations to apprehend what is operating behind the scenes (Al-Ababneh, 2020; Bashir, Syed &

Qureshi, 2017). Such a researcher will observe that multiple or diverse realities exist within the truth and will seek the research path that will help them determine their truth.

Subjectivism provided the capacity to accommodate and expound the views on communication in the telecommunications industry from the perspective of stakeholders. Therefore, subjectivism assisted the study in subjectively exploring and investigating the communication issues among the stakeholders in the telecommunications industry. Through subjectivism, the study collected qualitative data to answer the research questions based on the opinions of stakeholders. The study obtained explanations from stakeholders to apprehend their communication interests. It became clear that stakeholders and consumers have different perceptions and interpretations of diverse communication interests, which may, as a result, influence their interaction in the telecommunications industry. The qualitative phase of the research was conducted from a subjectivism perspective, selecting a qualitative methodology that helped establish the non-statistical methods required for data analysis.

Objectivism portrays that social entities exist in reality and that social actors concerned with their existence, are external (Saunders *et al.*, 2007). The belief in such truth is projected as a single objective reality, which falls into the theoretical perspective of positivism. The application of objectivism facilitated the quantitative analysis of the communication interests of stakeholders and consumers. Objectivism supported the use of a quantitative methodology and the statistical methods to be used.

5.2.2 Principle of epistemology

Creswell (2013) explains that epistemology is centred on acceptable knowledge in a field of study. According to the author, it is an aspect of philosophy that deals with the study of knowledge and seeks to differentiate true knowledge from false knowledge. The fundamental question that arises from the study of epistemology is: "what must be added to true beliefs to convert them into knowledge" (Goldman, 2019; Schommer, 2019). Therefore, providing the required answer to this question translates into a scientific methodology. The answer(s) can be developed into models or theories that can be added to the body of knowledge within the scientific environment.

Accordingly, epistemology is central to science, as science can only occur after knowledge development.

Epistemology deals with the question of how we know what we know (Tolk, 2015; Becker, 1996). Blakeley, Thaxton and Danahy (2021) and Ahmed (2008) argue that epistemology can be regarded as an aspect of philosophy that examines and determines the nature of knowledge and how that knowledge is created. Consequently, according to Elshandidy (2011), epistemological research can be categorised based on our beliefs. It ranges from one extreme, which is described as positivism, to another called interpretivism and others, participatory and pragmatic worldviews.

5.2.3 Choice of paradigm

The discussions about the philosophical worldview, coupled with the presentation of its dimensions, namely ontology and epistemology, have provided an overall context and pivot upon which the research was planned and executed. Research philosophy entails explaining strategic beliefs about data collection, analysis, and interpretation to obtain results (Scotland, 2012). Further, the research paradigm deals with doing investigations based on the research problem and the research question or objective. Mkansi and Acheampong (2012) indicate that the form of the research problem influences the choice of research philosophy. A study's research methodology is, furthermore, determined by its research philosophy. Four primary research philosophies exist in research: positivism, post-positivism, interpretivism, and pragmatism (Sefotho, 2015; Grover, 2015). Pragmatism is an appropriate mixed methodologies/approach for research that utilises deductive and inductive approaches (Saunders, Lewis & Thornhill, 2012). Interpretivism is a qualitative research methodology and a subjective paradigm (Kivunja & Kuyini, 2017; Saunders, Lewis, Thornhill & Bristow, 2015). Positivism employs a quantitative research methodology grounded in realism and extreme objectivity (Aliyu, Bello, Kasim & Martin, 2014). Post-positivism approaches realism by distinguishing reality from human emotion and thought and employing a quantitative methodology (Novikov & Novikov, 2013).

Based on the research objectives and the stipulated research questions, the study was underscored by the philosophical stance of pragmatism. According to Creswell (2013) and Creswell (2009), the

pragmatic paradigm utilises many approaches that seek solutions to the problem and answer the research questions or objectives. Using this paradigm, gives the researcher the freedom to choose the approach, method, technique and procedure that would help provide appropriate solutions to the identified problem. According to James and Vinnicombe (2002), the pragmatic paradigm accepts the combination of theories because of its view that individual approaches have their unique strengths as well as weaknesses, so having a combined approach will help augment the weaknesses of other theories. The study will embrace the pragmatism research philosophy since it allows for the selection of methodologies, strategies, and processes pertinent to scientifically and objectively attaining the study's objectives (Žukauskas, Vveinhardt, & Andriukaitien, 2018). The choice of the pragmatism research philosophy is based on the fact that it can combine the features of positivism and interpretivism. It enabled the research to comprehend the communication difficulties among stakeholders and customers in the telecommunications industry and create a strategic communication plan/framework for the industry. Pragmatism enabled the research to gather, analyse, and interpret data in a variety of methods in order to examine the issue under investigation and create a wider knowledge of communication among stakeholders and customers. The use of the pragmatism research philosophy facilitated the incorporation of multiple research approaches and strategies, including qualitative, quantitative, and action research methodologies, into the study.

Various theories within the frame of communication management have been discussed to play a significant role in establishing the truth regarding effective management of communication interests of different stakeholders and consumers within the telecommunications industry. The research questions were exploratory and in order to answer them, an in-depth apprehension of communication interest management approaches was required from the researcher. The subjective view offered the researcher the opportunity to explore and interpret different perspectives from selected stakeholders in Ghana, regarding the proper management of communication interests within the telecommunications industry. The objective approach, used for the development of the research objectives of the study, influenced the researcher in choosing a quantitative methodology that, in addition, determined the statistical methods that were required to be used for data analysis in the study.

Ragab and Arisha (2018) and Anderson (2015) argue that a qualitative researcher (although this applies to only one phase of the study) can study the experiences of diverse participants in different settings and different situations and circumstances. In addition, to reduce the weaknesses of the interpretative and positivist paradigms, the pragmatic paradigm was utilised by the study. The method also accepts the combination of diverse approaches utilised by the study (Creswell, 2009). The above indication explains how and why the study adopted the mixed-method approach. Mixed-method was adopted because the study sought to use both qualitative and quantitative methods, making it mixed in nature.

5.3 RESEARCH APPROACH

The next activity within the research plan, the research approach, is discussed in this section. After the research philosophy was selected, the researcher decided on the appropriate research approach to be used in congruence with the adopted paradigms. The choice of an appropriate research approach is important, since it underpins the very existence of the research. In light of this, Easterby-Smith, Jaspersen, Thorpe and Valizade (2021), Chetty (2016) and Johnson and Christensen (2005) posit that three reasons underscore the importance of the choice of the research approach. According to the authors, a particular research approach helps the researcher make more informed decisions regarding the study design, which goes beyond just identifying the techniques and procedures through which data are collected and analysed. Further, the authors expounded that such an approach enables relevant data and evidence collected to be properly and adequately utilised and interpreted to provide the right answers to initial research questions.

Additionally, the approach can assist the researcher in thinking and adopting appropriate research strategies relevant to the study. For instance, a researcher interested in understanding 'why something is happening' compared to describing 'what is happening' may consider an inductive rather than a deductive approach as an appropriate tool. Easterby-Smith *et al.* (2021) note that knowledge regarding diverse research approaches would enable the researcher to deal with the numerous constraints of the work. In light of this, studies have identified two types of research reasoning, namely deductive and inductive and mixed research approaches.

5.3.1 Inductive reasoning

Inductive reasoning starts with precise observations and proceeds to abstract concepts (Saunders *et al.*, 2012). It begins with particular observations and measurements, detects common themes, formulates preliminary hypotheses, and develops broader conclusions or theories. Inductive investigations begin without theories or assumptions, and the study is free to change its direction (Lodico, Spaulding & Voegtle, 2010). It is appropriate to work inductively by gathering data, categorising data, sorting data, coding data and analysing and reflecting upon it. It must be expounded that inductive reasoning usually coincides with research questions. Given this, the research questions for the study were exploratory and fell within the required inductive reasoning. The research questions require inductive reasoning to understand participants' views within the telecommunications industry (Creswell, 2009). Therefore, using inductive reasoning to answer the research questions, helped the researcher to obtain enough information from the participants.

5.3.2 Deductive reasoning

Deductive reasoning is a process by which a study reaches a logical judgment through the logical generalisation of a proven fact. In contrast, inductive reasoning is the process through which a study observes specific events and, based on this observation, makes judgements (AbuRaya & Gomaa, 2020). Deductive reasoning entails testing a persuasive social hypothesis with evidence (Soiferman, 2010). It shifts from broad to specialized study. The researcher analyzes what others have done, reads current theories, and then tests hypotheses. It also involves constructing a hypothesis based on current theory and then testing it. Hypotheses formed from theory propositions explain the deductive process. Deductive reasoning, furthermore, involves drawing conclusions from premises (Streefkerk, 2022; Grinchenko & Shchapova, 2020).

It must be expounded that deductive reasoning usually coincides with research objectives. As indicated earlier, the nature of the research objectives required deductive investigation reasoning. The objectives seek to offer a generalised conclusion through the adoption of deductive reasoning. In order to achieve the objectives, the study utilised a standard statistical test model to focus more on the research objectives and examine the relationship between and among the adopted variables.

An objective truth was sought to examine the linkages between the variables. It, therefore, relates to the regression and SEM for stakeholders and customer data. The study adopted the deductive approach to objectively measure observations to enable the researcher to explain the variations in communication strategies among diverse stakeholders in the telecommunications industry in Ghana.

5.3.3 Research approach

Three research approaches support the execution of social science research: quantitative, qualitative, and mixed approaches. In the views of Chetty (2016), the research methodology is the road map, method, and procedure for gathering data, analysing the data acquired and interpreting the outcomes of the data analysis. Gaus (2017), Teddlie (2003), and Tashakkori and Teddlie (1998) note that the choice of research approach is influenced by research philosophy. Easterby-Smith *et al.* (2021) and Allan (2003) indicate that studies that use inductive reasoning are more likely to use a qualitative research approach and studies using the deductive approach are more likely to use a quantitative research approach and data. It is the same when the researcher utilises research questions or objectives. The studies that use both approaches are more likely to use a mixed-method approach, adopting a variety of techniques and methods to collect data, thereby providing diverse views regarding the phenomenon. Despite this, no research approach or paradigm has the power to provide answers to all research questions. Similarly, it has been argued that no research paradigm or approach can claim to fully comprehend all inquiries into human life and knowledge (Creswell, 2009, Cresswell, 2013). It clearly shows that no research methodology is better than the other in providing conclusive evidence to a particular study. Each methodology is better at doing different things and answering specific questions (Saunders Lewis & Thornhill, 2009). Given this, the study adopted the mixed-method approach, with research questions (the exploratory phase) and research objectives (the positivistic phase).

Creswell (2003) and Creswell (2013) suggest that qualitative research enables the researcher to obtain in-depth information concerning a particular phenomenon, such as stakeholder communication management. Similarly, Snape and Spencer (2003) indicate that qualitative research also acts as a naturalistic/interpretative approach and provides an in-depth understanding

of social issues, situations, events and circumstances through an interactive data collection technique. The qualitative research approach describes an individual's experiences, expectations, views, and attitudes or collection of elements within a study (Sonia, 2004; Michael & Michael, 2002). Applying the qualitative research approach assisted in answering research questions. The qualitative method, furthermore, assisted the study in assembling in-depth information on the communication interests, strategies, and challenges among stakeholders in the telecommunications industry, as well as in identifying ways to improve effective communication between stakeholders and consumers. The study included exhaustive written descriptions and explanations of the subject. In addition, participants in the study were given a chance to respond to the questions posed more extensively and in-depth.

The study included qualitative and quantitative research methods to guarantee that the findings illuminate a larger range of perspectives on the complexity of stakeholder communication interests in Ghana's telecommunications industry. The adoption of the quantitative research method enabled the research to test for objective theories and make the correct data prediction. According to Creswell (2006), the quantitative method provides background for quantifying data into simple terms for effective interpretation and discussion. The method of quantification enables the researcher to break down complex issues within the management of stakeholder communication interests within the telecommunications industry of Ghana, using standard statistical quantitative tools, namely t-test, Chi-square, descriptive statistics, correlation, regression, frequency distribution, structural equation modelling, and figures and tables. The large sample utilised in quantitative studies enables the researcher to generalise the study's findings to the larger population. The method was appropriate for the study, because it ensured the effective utilisation of data through establishing relationships among variables.

Choosing a quantitative research approach stems from the technique's capacity to collect quantitative data for numerical analysis and interpretation (Molina & Cameron, 2010; Cooper & Pamela, 2006). Using this approach allowed for the objective interpretation of the results. The approach was used because it employs numerical information for improved data comprehension and presentation. It explains complicated data, challenges, and procedures. The quantitative approach also gave a more accurate representation of the facts and a deeper understanding of the

subject under consideration. The approach was essential, since it allowed the study to investigate communication management in the telecommunications industry. The quantitative part of the study also allowed for the objective testing of hypotheses. In addition, the study explored and analysed various variables using standard and advanced statistical methods. Similarly, the approach enabled the study to analyse the communication interests, strategies, and challenges among the industry players.

Despite using a typical quantitative or qualitative method, diverse scholars have criticised the two methods. Qualitative research utilises a small sample size, making it difficult to generalise the findings (Vasileiou, Barnett, Thorpe & Young, 2018; Onoma, 2013). In most cases, the sample size is not representative of the population. Despite the statistical underpinning of the quantitative method, it fails to provide critical answers to "why" questions in a study (Yilmaz, 2013). Also, although the study could have utilised a typical quantitative method, obtaining a standardised scale regarding the management of stakeholder communication within the telecommunications industry of Ghana was difficult. These criticisms underpin the basic premise upon which the mixed-method investigation was adopted.

The study is wholly a mixed-method study, which includes the use of a interviews and a survey. A mixed-method approach was adopted to address the challenges of typical qualitative and quantitative methods. Bryman (2001) indicates that using a mixed-method approach helps to reduce the challenges emanating from the single study method, thus either qualitative or quantitative. This approach allows the researcher to utilise both the qualitative and the quantitative methods fully. Bryman (2004) postulates that the mixed-method approach is vital because it leads to the effective and efficient collaboration of research methods, techniques, and instruments, thereby diminishing the demerits of qualitative or quantitative methods. This approach is a way of assuring the validity of research through the use of a variety of methods to collect data on the same topic, which involves different types of samples, as well as methods of data collection. However, the purpose of the mixed-method approach is not necessarily to cross-validate data, but rather to capture different dimensions of the same phenomenon. In congruence with this, the study adopted both inductive and deductive approaches, which utilised both qualitative and quantitative research methods and is called the mixed-method approach. The kind of mixed-method adopted by the study

was qualitative–quantitative. The qualitative method aimed to explore data that could provide information for the development of the survey instrument used in the quantitative phase of the study.

Mixed-methods research means that the data acquired were seen from various angles. The method employed expanded, elaborated, and clarified the findings gained by broadening the scope and range of the research through the use of qualitative and quantitative approaches. The mixed research design enhanced the study's potential to peel out conceptual thinking on communication issues in Ghana's telecommunications industry. Additionally, by combining qualitative analysis driven by thematic analysis, and quantitative research driven by statistics, the findings on experiences and viewpoints of stakeholders in the telecommunications industry, in managing their communication interests, are revealed.

5.4 RESEARCH DESIGN

Boru (2018) notes that research design comprises procedures used to collect, analyse, interpret, and report data in research. Saunders *et al.* (2007) explicate that the research design provides the overall plan for data collection, data gathering procedures and analysis within a particular study. Creswell (2013) also points out that research design is the scheme or blueprint followed during research to collect relevant data, categorise and code data, and analyse data to achieve the research objectives. Research design can be described as the strategic map to undertake research and make the research reliable and valid (Langen, 2009). Researchers use research design to determine the means and mode of data collection and analysis. They describe the data sources, nature and type of data, and techniques for collecting data, to ensure that they make economic sense (Churchill & Iacobucci, 2005). The study utilised inductive and deductive reasoning and a mixed research approach based on the stipulated research questions and research objectives. Given this, the qualitative phase applied inductive reasoning and was exploratory, while the quantitative approach applied the deductive reasoning and was descriptive.

The research questions evolved from the kind of research which can be either exploratory, explanatory or descriptive (Saunders *et al.*, 2007). The exploratory acts as an effective tool for

developing, establishing and describing new insights (Makri & Neely, 2021; George, 2021). Therefore, understanding the management of stakeholder communication and providing an appropriate interpretation regarding the concept, and as such in-depth answers to the research questions, was necessary. Exploratory research helps to improve a researcher's knowledge about a certain phenomenon. According to Saunders *et al.* (2012), the importance of exploratory research cannot be underestimated, because exploring the research questions goes beyond both descriptive and explanatory research approaches. Although it does not provide or draw definite conclusions, it can help an investigator to begin to determine how and why things happen. Exploratory research is usually conducted to study a problem that has not been clearly defined yet, and this is what the qualitative phase of the study sought to achieve. The exploratory approach is employed to determine the nature of the problem, but is not intended to provide conclusive evidence – it helps us to better understand the problem (Dudovskiy, 2022; George, 2021). When conducting exploratory research, the researcher ought to be willing to change his/her direction due to the revelation of new data and insights. The study's explanatory part helps examine the linkages among the adopted variables. It helps to establish the causal effect or relationship between and among variables (Zhao, Zhang & Ma, 2020; Guerrero, Cunningham & Urbano, 2015). Whilst exploratory research "tends to tackle new problems on which little or no previous research has been done", explanatory research helps to examine the relationship among adopted variables (Saunders *et al.*, 2012).

The descriptive research design provides a vivid description of a phenomenon or behaviour of the subjects under study (Dudovskiy, 2022; Apuke, 2017). In certain instances, using a descriptive study design to support a phenomenon is justifiable (Langen, 2009). Thus, the study was able to persuasively defend its identification of communication strategies, interests, obstacles, and measures to improve communication among stakeholders and consumers.

The descriptive design also assisted the study correctly and methodically described the qualities of the data (Ryan & Filene, 2012; Dulock, 1993). The adoption of a descriptive research design enabled the study to precisely address the research problem's relevant objectives (University of Southern California, 2016). In this study, using a descriptive research design allowed the researcher to acquire crucial information on the issue under investigation. Due to the implementation of the

descriptive research method, the study was more concentrated, and it was able to collect high-quality data for quantitative analysis. The study acquired credible data for an in-depth examination using a descriptive research strategy. Therefore, understanding the effective management of the communication interests among stakeholders and consumers requires this approach to achieve such an objective. The focus of the study on diverse constructs such as communication strategies, communication interest awareness and management, and improving communication and communication challenges, means that it does not focus only on a single construct.

5.5 POPULATION OF THE STUDY

The population is considered the set of cases from which the sample is drawn. Etikan and Bala (2017) and Etikan, Musa and Alkassim (2016) posit that the population covers the entire spectrum of people or elements with similar characteristics or features. The population is the larger group in which a researcher has an interest and wishes to generalise his/her research findings. Creswell (2009) defines population as the totality or total of the phenomenon that interests a researcher. Therefore, the population for the study consists of all the stakeholders and consumers within the telecommunications industry of Ghana. The target stakeholder group includes the consumers (all persons and institutions who utilise the services and products of the telecommunication service providers), the National Communication Authority (NCA), Telecommunication Companies (MTN, AirtelTigo, Vodafone and Glo), customers of Telecommunication Companies, the Ministry of Communication, the Legislature, Academic Experts in Telecommunication, Consumer Protection Agencies (CPAs), Environmental Protection Agency, and Ghana Atomic Energy Commission. The target population is restricted to the Greater Accra region of Ghana. Specifically, the study will limit its accessible population to the city of Accra because it is the city that hosts all the stakeholders. Moreover, most telecommunications consumers in Ghana are located in the city of Accra. The total population for the city of Accra was estimated at approximately 2,475,000 based on the 2010 population census (World Population Review, 2021; Ghana Statistical Service, 2012). The population will be used for the quantitative aspect of the study.

5.6 SAMPLE SIZE SELECTION AND DETERMINATION

The sample size is an important dimension of the research plan and execution. Through this method, the researcher can justify the number of people used for the study. Diverse scholars in many empirical works have defined sample size. Hancock (2002) defines the term as "the number of representatives that respondents select from a population being researched". Creswell (2009) indicates that the effectiveness of sample size and its representation is based on the size of the target population, resources available, and the homogeneity and heterogeneity of the population. Studies have indicated that the larger the sample size, the more the size is a real specimen of the population (and representative of this population), making the result as appropriate, dependable and generalisable as possible (Saunders *et al.*, 2009).

Given this, 421 respondents were used for the main study, of which 21 were part of the qualitative phase and 400 (100 stakeholders and 300 customers) were part of the quantitative phase. In addition to this, 2 participants were employed for the qualitative pilot study and 50 respondents were employed for the quantitative pilot study. Intimations from literature underpinned the choice of the sample size. According to Creswell (2013), a sample size of at least 50 respondents is good for statistical analysis supporting the quantitative study, whilst at least 9 respondent(s) is good for a qualitative study. Similarly, a sample size of at least 12 respondents is at least effective for qualitative analysis, whilst 40 respondents are good for quantitative analysis (Budiou & Moran, 2021; Vasileiou *et al.*, 2018; Bryman & Bell, 2007).

Table 5.1 Sample size

Area	Population	Target Group	Categories	Size (#)	Sub-total	TOTAL
Qualitative research phase	Key Stakeholders	Top-level Managers (Managers/Directors)	National Communication Authority (NCA),	5		
			Ministry of Communication	2		
			Legislature (Parliament-Select Committee on Communication)	2		
			Academic Experts in Telecommunication	2		
			Consumer Protection Agency (CPA)	2		
			Environmental Protection Agency (EPA)	2		
			Ghana Atomic Energy Commission (GAEC)	2		
			Telecom Companies (MTN, AirtelTigo, Vodafone and Glo)	4	21	21
Quantitative research phase	Key Stakeholders	Middle-Level Employees (Supervisors and Heads of Departments)	National Communication Authority (NCA),	20		
			Ministry of Communication	10		
			Legislature (Parliament-Select Committee on Communication)	10		
			Academic Experts in Telecommunication	10		
			Consumer Protection Agency (CPA)	10		
			Environmental Protection Agency (EPA)	10		

			Ghana Atomic Energy Commission (GAEC)	10		
			Telecom Companies (MTN, AirtelTigo, Vodafone and Glo)	20	100	
Quantitative research phase	Customers	Customers of Telecom companies	MTN	160		
			AirtelTigo	50		
			Vodafone	80		
			Glo	10	300	400
TOTAL						<u>421</u>

Source: Field Data (2020).

5.6.1 Qualitative sample size for Stakeholders

In qualitative research, there are no precise guidelines for determining a representative sample size; rather, it relies on the nature of the study, the goal of the study, and the type of data the researcher seeks. (Vasileiou *et al*, 2018; Martínez-Mesa, González-Chica, Duquia, Bonamigo & Bastos, 2016). Where researchers require in-depth information and thorough apprehension of the research problem, a sample size with lesser participants with the required knowledge and information would be appropriate for such a study. The specialised knowledge, skills and information richness of the participants, as well as the analytical capabilities of the researcher, are more important than the sample size. The study sampled 21 stakeholders for the qualitative part of the study. The sampled population for the qualitative study was selected from the National Communication Authority, Ministry of Communication, Parliamentary Select Committee on Communication, Academia, Consumer Protection Agency, Environmental Protection Agency, Ghana Atomic Energy Commission, and Telecommunication companies. The quality of information obtained from the pilot interviewees was utilised as the basis for selecting the required participants for the study.

5.6.2 Quantitative sample size for Stakeholders and Consumers

Sample size determination using the quantitative method consists of carefully selecting a subset of the units that constitute the population. With regards to the quantitative sample size, using a statistical formula is better suited for obtaining respondents who are representative of the population (Budiu & Moran, 2021). The difficulty in obtaining the sampling frame of all stakeholders or members of all stakeholder groups within the telecommunications industry of Ghana made it difficult to utilise a standard formula to obtain the sample size for the quantitative section of the study. Therefore, using specifically purposive sampling enabled survey questionnaires to be administered on a one-on-one basis to over 400 respondents. One hundred respondents were the key stakeholders within the telecommunications industry, whilst 300 were customers of selected companies in Ghana.

The study adopted a statistical formula published by the National Education Association in 1960 to determine the number of respondents selected for the successful execution of the study and to make the study relevant in achieving its objectives. The choice of this statistical formula is based on the fact that it is an efficient method used by researchers to determine the sample size that is representative of a given population (Krejcie & Morgan, 1970). The formula is presented below:

$s = \frac{X^2 NP (1 - P)}{d^2 (N - 1) + X^2 P (1 - P)}$. Where;

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N = the population size

P = the population proportion (assumed to be 0.50).

d = the degree of accuracy (0.05)

The study used a statistical formula propounded by Cochran (1963) to determine the number of respondents necessary for the study to get the sampled population in a situation where the population size cannot be rightly estimated (population unknown). Using the number of the total accessible population of the study of 2,475,000 people based on the estimates from the 2010 population can ensure a confidence level of 95%, a confidence interval of +/- 5, and a margin of error of 5%. The formula gave a sample population of 384.014 respondents. Furthermore, a second

formula was employed to verify the number of people selected to ensure that the right sample population was determined. The formula is presented below:

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where:

e is the margin of error,

p is the (estimated) proportion of the population that has the attribute in question,

q is $1 - p$.

n_0 is the sampled size

Assuming that half of the population in the city of Accra is active in the telecommunications industry, the $p = 0.5$ (half of the assumed population, that is 50%). The study then used 95% confidence and at least a 5% margin of error. A 95% confidence level gives a Z value of 1.96. Using the confidence level of 95%, confidence interval of +/- 4 and margin of error of 5%, the formula gives a sample population of 384.16 respondents, which is in line with the sample size of the National Education Association formula. Therefore, a sample size of 384 was used for the quantitative study. The sample size was further divided between stakeholders and consumers. However, after data collection, 400 questionnaires were completed by the respondents. The respondents included 100 stakeholders and 300 consumers.

5.6.3 Demographic characteristics of participants and respondents

The demographic characteristics covered three phases, namely: Phase 1, which covered qualitative information from stakeholders; Phase 2 being quantitative information from stakeholders; and Phase 3, which covered quantitative information from customers.

i. Demographic Characteristics of Participants - Qualitative results

Regarding the qualitative section of the study, 21 participants were used - out of these, 14 were males, and 7 were females to provide fair representation across gender. The participants in the interview included 4 from the National Communication Authority (NCA), 2 from the Ministry of Communication, and 2 were Legislatures (Parliament-Select Committee on Communication). Again, 2 were Academic Experts in telecommunications, 2 from the Consumer Protection Agency (CPA) and 2 from the Environmental Protection Agency (EPA). Also, 2 from the Ghana Atomic Energy Commission (GAE) and 4 from telecommunications companies (MTN, AirtelTigo, Vodafone and Glo) and the Telecom Chamber of Ghana. Out of the 21 participants interviewed, the majority, representing 15 participants, were between 45 to 60 years, four were between 30 to 40 years, and two were above 60 years. Almost all the participants were directors and managers of various agencies or institutions and departments used in the study. The result also shows that most of the participants have been in their top-level position for not less than 10 years, with only a single participant who has been a director for two years. The selection of the participants is in line with the purposive sampling technique to get the right persons with adequate knowledge of the topic under discussion.

ii. Demographic Characteristics of Respondents – Quantitative Results

In the quantitative section of the study, the demographic characteristics of respondents covered both stakeholder and consumer/customer information, as shown in the Table below.

Table 5.2 Demographic Characteristics of Stakeholders and Customers

Indicators	Categories	Stakeholders		Consumers/Customers	
		Frequency	Percentage	Frequency	Percentage
Age	20 and <yrs	6	6.0	46	15.3
	21-30 yrs	52	52.0	101	33.7
	31-40 yrs	22	22.0	90	30.0
	41-50 yrs	20	20.0	40	13.3
	50-60 yrs	-	-	20	6.7

	60+	-	-	3	1.0
	Sub-Total	100	100.0	300	100.0
Gender	Male	62	62.0	224	74.7
	Female	38	38.0	76	25.3
	Sub-Total	100	100.0	300	100.0
Educational Level	JHS/SHS/VOC	-	-	135	45.0
	Diploma	5	5.0	48	16.0
	First Degree	58	58.0	98	32.7
	Masters	37	37.0	14	4.7
	PhD	-	-	1	0.3
	Other's	-	-	4	1.3
	Sub-Total	100	100.0	300	100.0
Marital Status	Single	34	34.0	76	25.3
	Married	66	66.0	218	72.7
	Divorced	-	-	3	1.0
	Widowed	-	-	3	1.0
	Others	-	-	-	-
	Sub-Total	100	100	300	100.0
Use of Mobile phone	Less than a year	-	-	41	13.7
	1-3 yrs	-	-	48	16.0
	4-6 yrs	-	-	40	13.3
	7-9 yrs	-	-	62	20.7
	10 + yrs	-	-	109	36.3
	Sub-Total	-	-	300	100.0
Years of service in the telecom industry	Less than a year	6	6.0		
	1-3 yrs	9	9.0		
	4-6 yrs	39	39.0		

	7-9 yrs	18	18.0	
	10 + yrs	28	28.0	
	Sub-Total	100	100.0	
Stakeholder connection	Policy maker	4	4.0	
	Legislator	15	15.0	
	Regulator	3	3.0	
	Network service provider	27	27.0	
	Telecom consumer/ subscriber	34	34.0	
	Telecom chamber	2	2.0	
	Academic Expert	10	10.0	
	CPA	5	5.0	
	Sub-Total	100	100.0	
Mobile Network use	MTN			160 53.3
	AirtelTigo			50 16.7
	Vodafone			80 26.7
	Glo			10 3.3
	Sub-Total			300 100.0

Source: Field Data (2020).

The demographic characteristics of sampled respondents were analysed. Overall, the result shows 100 stakeholders were utilised by the study. On age distribution, the result shows that the majority of key stakeholders sampled were between 21-30 years, representing 52%; followed by those between 31-40 years, representing 22%; next was 41-50 years, representing 20%; and the least are those less than 20 years, representing 6%. Of the 100 sampled respondents, 62% were males, whilst 38% were females explaining the nature of gender distribution within the telecommunications industry of Ghana. Further, on an educational level, 58%, representing the majority, hold a first degree, followed by 37% with a master's degree and the least, holding a diploma, representing 5%.

The result also shows that more than half of the stakeholder respondents are married, representing 66%, whilst 34% were single. With regards to years of experience, 28% have 10+ years of experience in their job; 39% have 4-6 years; 18% have 7-9 years; and the least represented was less than a year, representing 6% explaining the nature and degree of experience of lower and middle-level employees in the telecommunications industry of Ghana. In terms of connection to other stakeholders, telecommunications subscribers or consumers obtained 34%; network service providers obtained 27%; next was the legislature, obtaining 15%; followed by academic experts obtaining 10%; and the least represented was the telecommunications chamber obtaining 2%.

Further, with regards to the consumer/customer result, it was shown that 300 respondents were employed for the study. Out of these, 33.7% were between 21-30 years; followed by those between 31-40 years, representing 30%; next were those younger than 20 years, representing 15.3%; and the lowest representation were those above 60 years, representing 1%. Of the 300 respondents, 74.7% were males, while 25.3% were females. It is also clear that most consumers/customers hold JHS/SHS/VOC certificates, representing 45%, followed by those with a first degree representing 32.7%; next are those with a diploma representing 16.0%; and the least represented, PhDs with 0.3%.

Regarding marital status, a significant majority were married, representing 72.7%, followed by single, representing 25.3%; whilst 1% were widowed and divorced, respectively. Further, the use of a mobile phone result shows that 36.3% have used a mobile phone for more than 10 years; followed by those that used it between 7-9 years, representing 20.7%; next are those who used it between 1-3 years representing 16.0%; and the least are those that used it between 4-6 years, representing 13%. Similarly, concerning mobile network use, more than half of the respondents use MTN, representing 53.3%; followed by Vodafone, representing 26.7%; next, is Airtel-Tigo representing 16.7%; and the least represented was Glo, representing 3.3%. In all, it is clear that respondents were sampled across gender, age, marital, education, experience and other profile distributions within the telecommunications industry of Ghana.

5.7 SAMPLING TECHNIQUES

Sampling techniques are classified as probability and non-probability sampling. Probability sampling is a predetermined technique used to select respondents for a study, while non-probability sampling is a sampling technique that does not have a known method of selecting respondents for a study (Malhotra, 2007). Mohsin (2016) posited that, with probability sampling, every element in a population has a known chance of being selected to participate in research. However, in non-probability, each element does not have an equal opportunity of getting selected to participate in research. Mohsin (2016) further indicated that the probability sampling technique minimises the probability of research encountering systematic errors, reduces sampling biases and ensures each element in a population is fairly represented.

It must be noted that the probability sampling technique requires a lot of financial, material, time and human resources. Saunders *et al.* (2009), Mohsin (2016), Kanupriya (2012), and Gravetter and Forzano (2011) point out that probability sampling includes simple random sampling, systematic random sampling, stratified random sampling, cluster sampling and multistage sampling, while non-probability sampling includes volunteer sampling, convenience sampling, purposive sampling, quota sampling, snowball sampling, matched sampling and genealogy-based sampling. Kanupriya (2012) indicates that the non-probability sampling technique is less costly and does not require huge human effort. However, it is prone to sampling biases.

The study adopted the probability sampling technique of simple random sampling for the quantitative phase of the research and the non-probability techniques of purposive and convenience sampling for the qualitative phase.

5.7.1 Purposive and convenience sampling techniques

The purposive sampling technique is regarded as a judgmental sampling technique. When using this technique, the researcher has a preconceived idea of the participants who are relevant and have in-depth and insightful knowledge and a clear understanding of the issue being investigated; and who have the will, ability and capacity to participate in the study (Ng, Baker, Cristancho, Kennedy

& Lingard, 2018; Saunders *et al.*, 2012; Mapp, 2008). Therefore, when using purposive sampling, the participants within the target population must be knowledgeable and highly relevant to the topic the researcher seeks to investigate. This technique was adopted for this study because it gave the researcher the required foundation and firm understanding of participants who qualify for the interviews.

The purposive sampling technique was used to sample the senior managers for the study. The researcher selected participants who could purposely inform what they perceived as an issue within the framework of the investigation. The purposive technique enabled the researcher to select the required key stakeholders within the telecommunications industry of Ghana, such as the National Communication Authority (NCA) (the regulator), telecommunications companies (MTN, AirtelTigo, Vodafone and Glo), the Ministry of Communication, the legislature, academic experts in telecommunications, consumer protection agencies (CPAs), environmental protection agency and the Ghana Atomic Energy Commission.

After using purposive sampling to select the institutions and senior managers, the study used convenience sampling to select the participants for the interviews in the pilot study and the main study. Through convenience sampling, participants were selected based on their accessibility and willingness to participate. The technique allowed the researcher to sample and interview accessible, willing and available participants from different institutions and agencies. The technique also helped the researcher to obtain the required number of participants for the study.

5.7.2 Simple random sampling technique

After selecting respondents for the pilot study using a convenience sampling technique, the study employed a snowball sampling technique to recruit respondents from Busy Internet Company Limited and the Department of Communication, University of Professional Studies (UPSA). In snowball sampling, the study selects the sample rather than randomly choosing it, which means that not all individuals of the population have the same possibility of being chosen for the study (Levine, 2014; Everitt & Skrondal, 2010). Snowball sampling is advantageous, since current participants are likely to know individuals with important study qualities relevant to the study. Due

to the difficulties in obtaining participants for the pilot study, the snowball sampling technique was adopted. The initial respondents contacted at the Busy Internet Company Limited and the UPSA Department of Communication gave many referrals following the implementation of this sampling technique. Each additional referral increased respondents' participation.

The study, furthermore, employed the simple random sampling technique to select the respondents (consumers and stakeholders) actively involved in the telecommunications industry, for the main study. The application of simple random sampling allowed each consumer and stakeholder to be selected as a respondent. Simple random sampling reduced sampling bias and promoted the effective representation of respondents. With simple random sampling, the questionnaire was administered to the consumers and stakeholders randomly. The researcher randomly visited some suburbs in the city of Accra to administer the questionnaire. These suburbs include Lapaz, Ministries, Adabraka, Achimota, Dansoman, Roman Ridge, Cantonment, East Legon, Adenta, Osu, Teshie, Kaneshie, Kantamanto, Airport, Legon, Shiashie and Ofankor.

5.8 DATA COLLECTION METHOD

Data collection deals with the processes and procedures through which data were gathered. The study employed primary data collection methods for the qualitative and quantitative phases. Specifically, an interview guide and two survey instruments were used to collect qualitative and quantitative data for analysis. The study's data collection method allowed for data acquisition from all relevant sources to address the research problem thoroughly, answer the research questions, achieve the research objectives, test the hypotheses, and assess the findings comprehensively. The qualitative data collection method enabled the study to integrate participants' actual experiences with communication issues in the industry. The study's use of the quantitative data collection method aided in generalising the findings to a broader population. The methods of data collection covered in this research include: sources of data, instruments for data collection and procedures for data collection, which will be further discussed below.

5.8.1 Sources and type of data collection

Every research work has two main data categories, namely primary or secondary data (or both). However, this study utilised only primary data for analysis. The primary data are considered to be the original data gathered for a specific research objective (Saunders *et al.*, 2012); the secondary data are based on scholarly books, papers, journals and articles relevant to the research study. Primary data are fresh data gathered from the field for a specific purpose (Rahi, 2017; Rana, Osman & Othman, 2015). The information gathered from participants and respondents was mainly used to assist in achieving the stipulated research questions and research objectives and can, therefore, be classified as primary data. The data were acquired expressly for this study's purpose through the primary data sources. Using the primary data sources helped the study exercise control over how data were gathered from industry stakeholders and consumers. The use of primary source data was appropriate because it enabled the study to collect unique, first-hand data from participants and respondents, even though considerable time was spent collecting the data. The research obtained up-to-date data on communication interests from authoritative and relevant industry sources. As a consequence, the data-driven findings can be classified as accurate.

The study's utilisation of qualitative and quantitative data helped it to obtain significantly more insight into the subject. The approach provided a far fuller and more actionable insight into stakeholder and consumer views of communication strategies, communication interest management, communication challenges, and how to improve communication between and among stakeholders and customers. Additionally, the study's utilisation of qualitative and quantitative data boosted the study's data analysis quality by ensuring that the constraints of quantitative data are balanced against the strengths of qualitative data and vice versa.

5.8.2 Data collection instruments

The study utilised two main instrument categories for data collection: an interview guide and a questionnaire. These represent the primary instruments of data collection for the study.

i. Interview guide

The study utilised an interview schedule as an instrument or guide for qualitative data collection during interviews for the pilot study and the main study. It utilised the qualitative method, resulting in the use of interviews to provide in-depth information on the topic. In the views of Saunders *et al.* (2012), the use of a qualitative method such as interviews acts as an effective strategy for studying subtle nuances in attitudes and behaviour and for examining social processes in a phenomenon. DeJonckheere and Vaughn (2019) and Sim and Waterfield (2019) explicate that the interview is a focused dialogue between two or more people. Interviews provide the opportunity to talk to participants directly, ask questions, and record their answers. The use of interviews assisted the researcher in gathering valid and reliable data relevant to the research questions.

Different kinds of interviews are available for researchers depending on the type of research, purpose, and research questions. The categories include structured, semi-structured and unstructured. Although Saunders *et al.* (2007) indicate that structured interviews are well formalised, Bryman and Bell (2007) note that qualitative researchers hardly utilise structured interviews because it is regarded as typical of quantitative research. In light of this, the study utilised semi-structured interviews. George (2022) explains that semi-structured interviews are non-standardised and are often referred to as qualitative research interviews. Semi-structured interviews were, therefore, considered appropriate for the study, as the questions asked were not standardised and predetermined. In addition, the researcher used semi-structured interviews as it allowed interviewees to respond beyond questions asked to present their opinions regarding the stakeholder communication interests fairly. The questions were kept short, with plain wording, no jargon or terminology and no leading or value-laden inquiries.

ii. Survey questionnaire

A questionnaire was used to collect primary quantitative data for the study. The questionnaire was divided into two categories: a key stakeholder questionnaire and a customer questionnaire. The questionnaire development was carried out following a thorough literature search to determine and categorise concepts and variables used in similar past studies. The instruments comprise a mix of open-ended and close-ended questions. The items in the questionnaire were sourced and modified from diverse studies within the frame of the topic. Some of the sources included the works of Kaps and Voges (2007), Abbasi *et al.* (2011); Boykins (2014); Lambrini and Loanna (2014); and Akilandeswari *et al.* (2015). The adopted items were modified, and the validity and reliability of the scale were obtained. In addition, the questionnaires were designed to fit the cultural setting of Ghana. The researcher also ensured that the questionnaires covered all the study's objectives.

5.8.3 Data collection procedure

The procedure and time frame required for a particular study is important. Saunders *et al.* (2012) suggest that in planning a study, the researcher must decide on the time frame that meets the purpose of the study. The claim of research decisions is based on the research questions and objectives of the study.

i. Qualitative phase

For the pilot study and the main study, appointments were booked for the interviewees, and the participants were met at their designated place for the interview. The interviews were conducted on a face-to-face level, which allowed for follow-up questions to be asked. The face-to-face interviews allowed for clarification and explanation of questions addressed to interviewees. The interviewees' expressed opinions and answers were recorded for data analysis. All interviews lasted from 30 minutes to 1 hour. After the interview data had been obtained from participants, transcription was carried out for analysis.

ii. Quantitative phase

The pilot study was carried out using respondents from the Busy Internet Company and the Department of Communication, University of Professional Studies (UPSA). The survey questionnaire was used in the pilot study. The data collection regarding the questionnaire administration for the pilot study was conducted on a one-on-one basis. The researcher made sure that a respondent completed the questionnaire before moving on to another respondent. Explanations and clarifications were made during the completion of the questionnaires. Respondents spent approximately 30 minutes completing a questionnaire under the guidance of the researcher. After a questionnaire had been completed, it was taken for coding and analysis. Fifty respondents were utilised for this part of the study. After the data had been obtained, SPSS version 20 was used to analyse the data. It led to the modification of the questionnaire for the main study.

For the main study, questionnaire administration was conducted first at the premises of the regulator (National Communication Authority), where questionnaires were presented to respondents one-on-one. The researcher then moved to other principal business areas in Accra, such as Lapaz, Ministries, Adabraka, Achimota, Dansoman, Roman Ridge, Cantonment, East Legon, Adenta, Osu, Teshie, Kaneshie, Kantamanto, Airport, Legon, Shiashie, and Ofankor. The researcher ensured that the selected respondents fell within the inclusion criteria for the sample before questionnaire administration was done.

5.9 DATA TYPE AND ANALYSIS

The next level of activity undertaken was the types of data used and how the data were analysed - both quantitatively and qualitatively. The study used primary quantitative and qualitative data. The main constructs for the study are communication strategies, challenges, interests, and ways to improve communication. The main variables under communication strategies include awareness creation, traffic communication, relevant operational information, implementation and monitoring, appropriate feedback, regular consultations, use of public information systems, and promotion of stakeholder alignment. The main variables under communication interests include awareness of

stakeholder communication interests, communication interest management, group involved in communication interest management, and communication interests management challenges. The main variables under stakeholder communication challenges included: resistance to share information, difficulty in realising new roles, misdefine real needs and interests, difficulty working with different stakeholders with different views, the problem with the use of modern communication channels, difficulty in providing feedback, lack of resources, unable to provide information on a regular and timely basis, difficulty in managing the diverse expectations, and difficulty in selecting suitable communication channel. The main variables under improvement of communication include continuous engagement, clear definition of needs and expectations; development and implementation of a communication plan; encouragement of regular feedback, properly defined communication channels, regular interaction, appropriate engagement, building consensus, and development of an effective two-way communication process, promotion of stakeholder ownership regarding decisions taken, and regular systems to monitor and evaluate stakeholder interest.

The researcher identified various data analysis techniques that were appropriate and employed them for the study. The quantitative data were analysed through quantitative research techniques, whilst qualitative data were analysed through the use of qualitative data techniques. Both quantitative and qualitative data were utilised to achieve the study's stated objectives and answer the research questions.

5.9.1 Qualitative data analysis

The study applied qualitative analysis to qualitative data collected through a semi-structured interview guide to address the research questions. Saunders *et al.* (2012) expound that the difficulty in standardising qualitative data, coupled with the complex nature of these data, gives rise to the challenge of having a set of conventions, rules, and procedures generally acceptable for qualitative data analysis.

In light of this, the researcher followed the analytical procedures.

- The study utilised Nvivo.

- All interviews were transcribed and exported into Nvivo software.
- All materials gathered from interviews were referenced, indicating the date, time and who was interviewed.
- The researcher then created nodes in the Nvivo software for each question according to the data patterns or sub-themes and themes that emerged from the interviews.

Using the NVivo software, the researcher coded the responses into the appropriate node. Coding enables analytic themes to be identified to organise the data so that the strength of its support for those themes can be determined. Queries were used to visualise the indication from the interviews in connection with the themes. Finally, the analysis was conducted, and interpretation was done. In light of this, thematic analysis was employed.

- **Thematic Analysis**

Diverse themes were developed through the Nvivo software. The software assisted in data categorisation and developing themes in congruence to research questions. The thematic analysis allowed the researcher to examine patterns of themes within the research data obtained from the items in the discussion guide, as well as the data obtained from the open-ended items in the survey instrument. Each research question had a significant number of themes developed. Themes were utilised as the foundation upon which stakeholder communication management was explored and investigated. The themes helped the researcher to describe and explain the findings within the frame of the research questions. After this, the themes were reviewed, defined, and named to produce the final report and draw conclusions.

5.9.2 Quantitative data analysis

The study utilised SPSS version 20 as software for the quantitative data analysis. The tools adopted included descriptive statistics, cross-tabulation, regression, and structural equation modelling. Tables and Figures, including frequency distribution, were utilised to provide a pictorial view of the results. The procedures conducted using the tools are discussed below.

- **Descriptive Analysis**

The researcher applied descriptive analysis to analyse data to achieve the stated objectives. Although some studies have indicated that descriptive statistics or results do not allow for vivid conclusions to be made beyond the data which have been analysed (Bundly, 2022; Lund Research Ltd., 2018), this analysis helped the researcher to describe, summarise and present communication strategies indicators such as awareness creation, traffic communication and operational information. In addition, the use of descriptive statistics or analysis confirms earlier studies on communication interest management by Abbasi *et al.* (2011), Boykins (2014), and Akilandeswari *et al.* (2015).

- **Regression**

As indicated in the research approach, the deductive approach allowed for the quantification of data through regression tools. The regression allowed for the determination of relationships among diverse variables. Further, the regression was utilised as a quantitative technique that sought to examine, explore and explain variations within stakeholder communication management consistent with previous works by Kaps and Voges (2007), Boykins (2014), and Lambrini and Loanna (2014).

- **Structural Equation Modelling (SEM)**

The study utilised the SEM as a multivariate statistical analysis technique to analyse the structural relationships amongst the study variables. The technique combined factor analysis and multivariate regression analysis, which was used to analyse the structural association between measured variables and latent constructs. It provided the means through which relationships amongst stakeholder communication interest strategies were established. The SEM analysis also included causal modelling called path analysis to show the linkages amongst the latent study constructs.

- **Exploratory Factor Analysis**

Exploratory factor analysis is a standard formal measuring paradigm for interval-level observable and latent variables. Exploratory factor analysis reduces data to summary variables and explores the phenomenon's theoretical structure. Exploratory factor analysis standardizes variables (mean and standard deviation). It identifies the variable-response relationship. On the correlation matrix, exploratory component analysis is performed (Barker-Fludd, 2021; DiCerbo, Bertling, Stephenson, Jia, Mislevy, Bauer & Jackson, 2015).

5.10 RELIABILITY AND VALIDITY

Reliability is the credibility or consistency of research findings. Reliability and validity are very significant in any research study and were determined in both the quantitative and qualitative phases of the study. In order to achieve or test the reliability of a given set of data, the research findings should be the same or similar when repeated (Noble, H. & Smith, J. 2015; Riege, 2003; Bruck, Ceci & Hembrooke, 1998). The extent to which a test measures what it intends to measure is called validity (Kimberlin & Winterstein, 2008; Sartori & Pasini, 2007).

5.10.1 Qualitative data

Credibility in the qualitative phase of the research arises due to the subjective nature of the thematic analysis. In qualitative research, the possibility of subjectivity arises due to potential bias in the coding method (Shah, 2019; Lash, Fox, MacLehose, Maldonado, McCandless & Greenland, 2014.). Enhancing credibility will, therefore, lead to a reduction in subjectivity in thematic analysis by having a well-defined grouping procedure that will guarantee different coders coding in the same way. In order to reduce such issues and ensure the credibility of the qualitative data, a single coder with vast experience in qualitative coding using Nvivo was utilised to perform the coding. Thorough training on quality interview transcription was carried for the researcher. The researcher also ensured that the same interview guide was utilised throughout the data collection phase to help establish consistency regarding questions posed to participants. The researcher did not include his personal views in the data analysis.

In order to also ensure the validity of the data, a classification structure was adopted. In addition, the researcher consulted his supervisor to help ensure the credibility of the instrument (interview guide). The purpose of the consultation was to verify the completeness and the measurement level of the semi-structured interview guide. The initial recommendation led to the modification of some statements within the guide, based on information from the supervisors.

5.10.2 Quantitative data

The quantitative data were pilot tested and examined using reliability and validity indicators by Cronbach. Although a pilot test was conducted, the validity and reliability of the scale were employed in the main study. Before this, the aim of the pilot study's validity and reliability was to determine a clear understanding of respondents concerning the study instruments.

The validity of the measurement instrument was certified by subjecting it to intellectual verification and account, as well as checking for application and precision. The study applied the test of the reliability of data and the use of Cronbach's alpha formula. The study computed the coefficient of all the utilised indicators or items of the questionnaire. George and Mallery (2003) categorized Cronbach's Alpha values as follows: 0.9 and higher (excellent); 0.8 and higher (good); 0.7 and higher (acceptable); 0.6 and higher (questionable); 0.5 and higher (poor); and 0.5 and below (unacceptable). There is an agreement that $+0.70$ is considered acceptable for the reliability or internal consistency (Taber, 2018; Cho & Kim, 2015). While a Cronbach alpha value of 0.70 is commonly seen as an acceptable number, Hair, Black, Babin and Anderson (2014) state that values as low as 0.60 could be appropriate for exploratory research.

5.11 ETHICAL CONSIDERATIONS

Ethics is a significant dimension of the research process. The genesis of ethical considerations in any research starts from the conception of the idea, research topic identification and construction, research procedure and methods adoption, and continues until the scholarly work is published (Creswell, 2009). With this, the researcher was very careful and cognisance that the whole research

process can be jeopardised when acceptable principles are not adhered to before, during and after the research.

Ethical issues arise at every stage of social research, involving the research design, data collection methods, data gathering, analysis, presentation and reporting of findings (Bhandari, 2022). The primary ethical issues that may evolve in any research study include harm, consent, deception, privacy and confidentiality of data (Ferreira, Buttell & Cannon, 2018; Roberts, 2015). It is, therefore, important that the study is methodologically comprehensive and ethically sound to meet these suggested principles. The researcher thus followed the ethical procedures of the University of Pretoria, Research Degree Handbook, and research ethics of the Ethics Committee chronologically. Ethical clearance on the topic under study was obtained from the University of Pretoria - Ethics Committee (see Appendix) for the study to be carried out.

An introductory letter from the Division of Communication Management (see Appendix), indicating that the researcher was a PhD student researching the topic, was shown to all stakeholders to enable the research to be carried out as planned. During the primary data collection (use of questionnaire and interview), participants were informed about the purpose of the study and the primary questions underpinning the study. Participants were made aware that the scholarly work was for academic purposes only, and any information provided will be used for such a purpose only. Participants were assured of information secrecy, and permissions were obtained for one-on-one questionnaire administration and face-to-face interviews. The researcher expounded on research procedures and the expected questions to respondents.

With regards to the interviews, interviewees sought permission to record their answers and were informed of their right to have their privacy respected. Individuals who could not provide permission for the recording were not considered for the study regarding the interview section. Also, the researcher did not drag the discussions when it appeared that the interviewees did not want their voices to be recorded. Informed consent was obtained from individuals who agreed to be interviewed under the conditions stipulated by the researcher before data collection commenced.

In addition, the study took the necessary steps to ensure consent, confidentiality, anonymity, and the right to withdraw on the participants' part to give the expected information needed to answer the set research questions. During the data collection stage, the names, numbers, addresses, and tag codes of participants were not asked to protect the participants' anonymity. Further, assurance was given regarding the protection of the data and their identification. Participants were made aware that they had the utmost right to withdraw during the study or otherwise opt out of the study if they so wished. Further, for confidentiality reasons, the researcher kept data from the participants in a safe place. A secret security system code was developed to help store some of the vital information on the computer, and the researcher alone had access to this security code called password.

Further, ethical issues were considered concerning data analysis and reporting of the research findings, as indicated by Creswell (2003). The researcher properly stored and protected data collected, coded and analysed from unauthorised users. During data coding using both SPSS-quantitative data and the Nvivo-qualitative data, the names of participants and their place of work were not captured; however, their occupation was captured.

5.12 CONCLUSION

This Chapter of the study addressed two phases of the research, namely qualitative and quantitative. It indicated sampling techniques and sample size determination at each phase of the process. The study was mixed in nature and it employed exploratory (qualitative phase) and descriptive (quantitative phase) work. Data obtained from respondents were pilot tested to determine if respondents understood the survey instruments. Given this, the validity and reliability of the instruments were established for the main study. Data were analysed from phase to phase level. The qualitative phase was analysed through thematic analysis, while the quantitative phase was analysed using statistical tools such as descriptive statistics, correlation, chi-square test, regression and structural equation modelling.

CHAPTER SIX

DATA ANALYSIS

6.1 INTRODUCTION

This Chapter of the study presents the data analysis and presentation of results from information obtained from stakeholders and customers of the telecommunications industry of Ghana. The result is congruent with the study's stated research questions and objectives. The research questions and objectives are recapped in the Table below.

Table 6.1: Research questions and objectives of the study

RESEARCH QUESTIONS: QUALITATIVE PHASE	
Stakeholders	Which stakeholder communication strategies exist in the Ghanaian telecommunications industry?
	How is the communication interests of the stakeholders in the Ghana telecommunications industry managed?
	How are communication challenges faced by stakeholders in the Ghanaian telecommunications industry managed?
	How can stakeholders in the Ghanaian telecommunications industry assist with improving stakeholder communication?

RESEARCH OBJECTIVES: QUANTITATIVE PHASE	
Stakeholders	To determine if there is a relationship between communication strategies and improved communication efficiency and effectiveness.
	To determine if there is a relationship between challenges perceived and improved communication efficiency and effectiveness.

Consumers	To determine if there is a relationship between challenges perceived and communication strategies used among consumers in the Ghanaian telecommunications industry.
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Similarly, each research question and objective was addressed through the critical analysis of qualitative and quantitative data obtained from telecommunications industry stakeholders and consumers. Concerning the quantitative data-study objectives, the analysis was carried out using descriptive statistics and exploratory factor analysis, coupled with inferential statistics such as correlation and regression tools. Descriptive statistics were employed to describe and present fundamental characteristics of the research data, which summarise the sample and the adopted measures briefly.

Concerning the qualitative data-research questions, the analysis was carried out using thematic analysis. Through thematic analysis, diverse themes were developed from the data obtained from participants during the interviews. Structural equation modelling was employed to determine the linkages amongst and between the constructs for the consumer data and regression analysis for the stakeholder data.

6.2 QUALITATIVE ANALYSIS: STAKEHOLDER RESULTS

The primary research question is: What are the effective means of managing stakeholder communication in the Ghanaian telecommunications industry? In order to answer this research question, specific secondary research questions were slated. The analysis of the qualitative data obtained from participants was done using thematic analysis. The results are presented below concerning the specific research questions. The major themes for the study are listed below.

Secondary research question 1: Which stakeholder communication strategies exist in the Ghanaian telecommunications industry?

Theme 1: Telecommunications industry contribution

Theme 2: Positive relationship among diverse stakeholder groups

Theme 3: Stakeholders of the telecommunications industry

Theme 4: Stakeholder engagement

Theme 5: Communication channels employed

Sub-Theme 5a: Face-to-face dialogue

Sub-Theme 5b: Official letters

Sub-Theme 5c: Phone calls and emails

Sub-Theme 5d: Media (TV and Radio)

Sub-Theme 5e: Public lecture, consumer outreach, public forum/seminar

Sub-Theme 5f: Traditional medium (community meetings)

Theme 6: Stakeholder communication strategies employed

Sub-Theme 6a: Awareness creation

Sub-Theme 6b: Education and information sharing

Sub-Theme 6c: Direct communication (public information system)

Sub-Theme 6d: Bilateral and multilateral involvement and engagement

Sub-Theme 6e: Consumer-level approach

Sub-Theme 6f: Promotion of stakeholder interest alignment

Sub-Theme 6g: Regular consultations

Secondary research question 2: How is the communication interests of the stakeholders in the Ghana telecommunications industry managed?

Theme 7: Specific communication interests of stakeholders

Theme 8: Communication interests management

Theme 9: Effective management of communication interests

Theme 10: Challenges emanating from the management of communication interests

Secondary research question 3: How are communication challenges faced by stakeholders in the Ghanaian telecommunications industry managed?

Theme 11: Stakeholder communication challenges

Theme 12: Negative effect of communication challenges

Secondary research question 4: How can stakeholders in the Ghanaian telecommunications industry assist with improving stakeholder communication?

Theme 13: Improving communication interests

Sub-Theme 13a: Understanding the communication interests of stakeholders

Sub-Theme 13b: Policy issues

Sub-Theme 13c: Common platform or open framework

6.2.1 Existence of communication strategies

The first secondary research question is: **Which stakeholder communication strategies exist in the Ghanaian telecommunications industry?** The question was answered and analysed using thematic analysis. Before diving into the main research questions, the study sought to lay a good foundation by getting the participants to provide some information on the industry, such as the industry's contribution, stakeholders in the industry and their relationship, stakeholder engagement, and communication channels employed. The information helped in further probing the research questions in detail. The information gave a fair understanding of the industry. The results are presented below.

- **Theme 1: Telecommunications industry contribution**

According to the majority of the participants, the contribution of the telecommunications industry cannot be downplayed. The industry, according to interviewees, has provided access to the mobile network, data access, effective use of communication processes, improved economic activities and a reduction in the use of physical cash for transactions.

Moreover, a significant number of the interviewees (17 participants) intimated that job creation is one of the critical indices of the telecommunications industry. The industry was found to provide direct and indirect jobs to a diverse number of people and organisations in Ghana. The result also shows that 15 participants considered the telecommunications industry a key driver of other industries or sectors such as finance, health, education, and agriculture, among others, in Ghana. It was also indicated as a major developmental driver in Ghana, including the introduction and institution of digital transformation. These indications were captured in the views of some interviewees:

“I must say that the industry provides many direct and indirect jobs. If you want to look at the indirect jobs, that are also so many because now, all these people who are involved in mobile financial services are also coming in addition to the agents who sell telecom products, the people within the distribution chain not to talk about the people who are employed directly by the telecom companies and their stakeholding agencies” (R6, Telecom Chamber Ghana, 2019)

“You will find out that people are using mobile money services to do many things, people are using it to provide prepaid water supply, people are using it to provide prepaid power supply, so in a chain, there are quite a lot of jobs that are also created, and then definitely, as the rails on which other industries ride, now coming into a place of internet of things, you know, the 5G and all of that is going to compound everything” (R7, MTN Ghana, 2019)

- **Theme 2: Positive relationship among diverse stakeholder groups**

The relationship between diverse stakeholder groups within the telecommunications industry is vital in ensuring effective communication interests management. Out of the 21 participants, 14 admitted that there is a positive relationship among diverse stakeholders; however, the relationship is weak.

“...Although the relationship is positive is highly weak. There is always the need to have a close collaboration between the regulator and the end users of the regulation, which are

the people we train. We are more and more realising that we cannot do our work without having a relationship with the regulators, which is the ministry of communication, so we are setting up a kind of relationship now before then” (R16, EPA, 2019)

The comment below, underscores the weak medium upon which information within the industry are channelled and discussed. Limited knowledge of other channels employed by different stakeholders is a critical expression of a weak relationship among diverse stakeholders within the industry.

“I must note that the medium where diverse stakeholders share information is critical. Without understanding such a medium, the sender cannot transmit the message to the receiver. It is therefore important we understand the role that the medium plays in the whole telecommunication chain among stakeholders” (R11, GIJ, 2019)

- **Theme 3: Stakeholders of the telecommunications industry**

According to participants, diverse stakeholders underscore the operations within the telecommunications industry of Ghana. The information provided by participants shows that there are two categories of stakeholders: major and minor. The major stakeholders have a direct operational relationship with the regulator (NCA), whilst the minor stakeholders have an indirect operational relationship with the regulator (NCA). The major stakeholders include the regulator, telecommunications companies or service providers, telecommunications chamber, ministry of communication, access operators, consumer protection agency, broadcasters group and their chambers, among others. Similarly, the minor stakeholders include academic institutions and consumer advocacy groups. The results show that the role of stakeholders is crucial to the development and growth of the telecommunications industry. The effective role played by all these stakeholders has the propensity to influence the survival and operational efficiency of the industry. These were captured in expressed views of some participants:

“We have Service providers, access operators, we have the tower companies, so those largely form some of the main stakeholders, they also have their industry and chamber

then we also have the government which through the ministry regulate, has the policy guide for the industry, and we have consumers in general, that use services either on a mobile phone or the internet usage, we also have some broadcasters” (R5, MOC, 2019)

“In the telecom industry, we have two major stakeholder areas such as the service providers, the regulators, the ministry, among others and minor stakeholder groups such as academic institutions and other expert groups” (R2, NCA, 2019)

- **Theme 4: Stakeholder engagement**

Participants indicated some level of engagement among diverse stakeholders. However, the result reveals that while participants from the regulator (NCA) indicated significant levels of interaction and regular contact with some stakeholders within the industry; other stakeholders admitted that such interaction is low or does not occur.

“I think the interaction between the regulator and other stakeholders is very weak and low. Despite this, the few times of interaction has been done through some channels and strategies” (R8, GAE, 2019)

Despite this, participants revealed that two mediums underpin the interaction and communication between the regulator and other stakeholders. These include channels of communication and communication strategies. These two indicators or mediums are vital for effectively managing stakeholder communication interests within the telecommunications industry of Ghana. It can be observed in the views of some participants:

“I must state that because we license them, that in itself bring much interaction, so there is regular interaction with all of these stakeholder groups. The medium used include channels of communication and communication strategies” (R1, NCA, 2019)

- **Theme 5: Communication channels employed**

In order to ensure the effective operation of stakeholder strategies within the telecommunications industry, participants revealed a significant number of channels employed. These include face-to-face dialogue, official letters, phone calls and email, media (TV and Radio), public lectures, consumer outreach programmes, public forums, seminars and workshops, and traditional mediums (community meetings).

Sub-Theme 5a: Face-to-face dialogue

One of the communication channels discovered from the data obtained from participants was face-to-face-dialogue. According to the majority of participants (16 participants), face-to-face dialogue is employed when there are critical decisions to be taken, especially regarding issues emanating from the Ministry of Communication and National Communication Authority (NCA). According to some participants, it is also employed when the decision involves a policy decision that requires extensive discussion and information sharing.

Sub-Theme 5b: Official letters

Another channel used by telecommunications stakeholders for communication is through official letters. According to participants, letters are the main pivot upon which stakeholder interaction revolves. It is the means through which major communications are done and information transmitted across stakeholder groups. It is also the way through which information is shared among diverse stakeholders.

Sub-Theme 5c: Phone calls and emails

The entire group of interviewees admitted that, within the digital system and age, phone calls and emails had become the major channel used by telecommunications stakeholders. The channel was regarded as fast and smart in reaching other stakeholders. Participants regard it as a pivot upon which modern communication and information sharing among diverse telecommunications stakeholders revolve. It was discovered that most meeting schedules and policy discussion issues are done through phone calls and emails.

Sub-Theme 5d: Media (TV and Radio)

Media, through television and radio waves, was another channel indicated by participants as being vital for dialogue and discussions among stakeholders within the telecommunications industry of Ghana. The result shows that it is one of the dominant channels employed in reaching out to consumers or customers. It is used to inform and convey vital information to customers/consumers or the public, as well as other important stakeholders.

Sub-Theme 5e: Public lecture, consumer outreach, public forum/seminar

Other channels discovered from the data obtained from participants are public lectures, consumer outreach, and public forums/seminars. According to most participants, these channels are employed in reaching out to consumers or customers. It is used to inform and convey vital information to customers/consumers or the public, as well as other important stakeholders. It provides the means upon which a large number of stakeholders, most especially consumers within the telecommunications industry, are reached.

Sub-Theme 5f: Traditional medium (community meetings)

Another channel discovered was a traditional medium, thus community meetings, which were used in the olden or pre-modern times. Through these meetings, discussions are held in public places, for instance, in churches, and schools among consumers, to understand critical issues within the industry. According to participants, this channel provides the means of reaching out to a larger population. It is where direct contact is made with consumers and vital stakeholders, and important information is shared. Twelve participants indicated that this is a platform used to discuss basic issues within the industry, as well as for policy decisions by the Ministry of Communication and implementation direction by the National Communication Authority (NCA).

From the channels provided based on the data obtained from diverse stakeholders, the issues raised by some participants are captured as follows:

"We use several channels. Based on the nature of the meeting or interaction, it takes face-to-face dialogue. There are lectures, phone calls, and emails for the consumers. We have programs for them, so there is a consumer outreach program, consumer forums and

workshops, there is a hotline that consumers can call us on, and we have offices across the country where our stakeholders can also walk in for whatever solution that they want” (R1, NCA, 2019).

“We wrote an official letter to them. In the book, we have a visit related to the head of the national communication authority every week or two weeks. We usually go with an official letter and follow up with a face-to-face interaction because some of these kinds of things we want to do is not enough to just send an email” (R21, Telecom Chamber, 2019)

- **Theme 6: Stakeholder communication strategies employed**

In order to ensure the effective management of stakeholder interest, participants revealed a significant number of communication strategies employed by diverse stakeholders within the telecommunications industry of Ghana. The revealed strategies include: awareness creation, chamber dialogue, educational and information sharing, training and development, direct communication (public information system), bilateral and multilateral involvement and engagement, consumer level approach, promotion of stakeholder interest alignment, leadership engagement, and regular consultations, and systems feedback. These strategies, according to participants, have the propensity to ensure effective stakeholder communication and interest management.

Sub-Theme 6a: Awareness creation

Awareness creation is one of the communication strategies indicated by participants. Fifteen participants indicated that making policy decisions and making telecommunications operations aware of stakeholders, most especially consumers, is a vital indication in ensuring effective and efficient operation of the industry. Through awareness creation, stakeholders become aware of policy decisions by the Ministry of Communications, as well as the direction of the implementation decisions by the regulator.

Sub-Theme 6b: Education and information sharing

Providing critical education and information to all stakeholders was another strategy employed by telecommunications stakeholders, especially the telecommunications regulator (NCA). Almost all participants indicated that education and information sharing are vital drivers in telecommunications operational survival in Ghana. It is achieved through public forums, lectures, discussions and community meetings.

“As an institution, we spend much time with the ministry of education and information and have a relationship with them. We communicate with the ministry of communication. We share information and provide education which is a critical strategy we most often use to provide information and discuss vital policy decisions” (R1, NCA, 2019)

Sub-Theme 6c: Direct communication (public information system)

Direct communication through public information systems such as the use of letters, emails, public forums and seminars helps to provide critical information to telecommunications stakeholders. According to some participants, this helps send and receive the right information from different stakeholders within the industry. It also helps to strengthen the ties among diverse stakeholders, most especially the major and minor stakeholders.

“...One of the ways is to write a letter to them to stop issuing consumers such messages. So we write letters, we send directives, and one most important thing I forgot to mention is we work with the regulations of the Acts of the company” (R13, Consumer Advocacy Group, 2019).

Sub-Theme 6d: Bilateral and multilateral involvement and engagement

Participants indicated some level of bilateral and multilateral engagement among diverse stakeholders. However, the result reveals that while participants from the regulator (NCA) indicated significant levels of interaction and regular contact with some stakeholders within the telecommunications industry, other stakeholders admitted that such interaction is low or does not occur. Despite this, participants indicated that bilateral and multilateral engagement are critical in

ensuring the effective management of stakeholder communication interests within the telecommunications industry.

“We do direct communication and a lot of bilateral and multilateral engagement, but our focus is really on all strategies to be able to look at what is in it for the other stakeholder that we are dealing with so that when we are communicating with them....”

(R, Telecom Chamber, 2019)

Sub-Theme 6e: Consumer-level approach

According to some participants, a succinct understanding of telecommunications consumers is important, to understand the interest of consumers as vital stakeholders of the industry. A consumer-level approach or strategy helps to understand the needs and expectations of consumers in order to develop policy and take decisions in the interest of consumers. The consumer approach helps to obtain consumer views through consumer consultations.

“When dealing with our main stakeholders, this being the Consumer and Corporate Affairs, we normally deal with them on the consumer level. Like we take complaints. Any issue bothering consumers, let us say the unsolicited messages I cited earlier on...” (R13, Consumer Advocacy Group, 2019).

Sub-Theme 6f: Promotion of stakeholder interest alignment

Promotion of stakeholder interest alignment was one of the communication strategies identified from the information provided by participants. According to some participants, every stakeholder has his or her interest. Therefore, the diverse interests of stakeholders must be understood and taken into account when making any decision affecting the operations of telecommunications companies and the general industry as a whole. Therefore, the regulator and the Ministry of Communication should align their interest with other stakeholders within the telecommunications industry to ensure the effective management of the interests of all stakeholders.

“We do engage and collaborate a lot with other consumer groupings like the consumer protection agency, and also the data protection agency, even though it is not directly a

consumer good. Anything that is linked to consumer protection or data protection, we do involve them in” (R14, CPA, 2019)

Sub-Theme 6g: Regular consultations

Regular consultation was indicated by participants as a vital strategy in ensuring effective management of the communication interests of stakeholders. The results show that, although regular consultations exist, they exist among main or major stakeholders. Minor stakeholder groups are not given critical attention to major decisions affecting the industry. Despite its limitation, it must also be noted that the NCA uses regular consultation to discuss critical issues or decisions affecting the industry with telecommunications players.

“...we bring that to the fore because for all the stakeholders that you deal with, they all have their interests, so we need to find a way of aligning our interest with their interests so that when you have these engagements, you can deal with them” (R, Telecom Chamber, 2019)

6.2.2 Management of communication interests

The second secondary research question was: How is the communication interests of the stakeholders in the Ghana telecommunication industry managed? In order to find answers to this research question, a significant number of themes were developed from the information obtained from important stakeholders. The result is presented below.

- **Theme 7: Specific communication interests of stakeholders**

The study investigated the communication interests of stakeholders. The result shows that diverse stakeholders have different interests within the telecommunications industry of Ghana. Major stakeholders, such as the regulator and the Ministry of Communications, have different interests against minor stakeholders who also have different interests. Whilst the ministry deals with policy, the NCA deals with policy implementation. It is also true that whilst telecommunications service providers provide telecommunications products and services to consumers, consumers' interest

also lies in obtaining better network quality and service. Similarly, whilst the Consumer Protection Agency and the Consumer Advocacy Group deal with the interest of consumers, the Telecom Chamber deals with the interest of the telecommunication companies. According to participants, satisfying the interests of diverse stakeholders is important in ensuring effective operations within the industry. It was found in an expressed view of some participants:

“Every stakeholder has its interest. We, the telecom chamber, must protect the interest of the telecom firms such as MTN, AirtelTigo, Vodafone and Glo. Despite this, we also look out for the interest of consumers” (R5, Telecom Chamber, 2019)

“We as NCA our interest are to implement the policy decision made by the Ministry. Although, sometimes we are part of the Ministry’s decision, it does not happen all the time” (R1, NCA, 2019)

“You know the regulator has an interest. The ministry has an interest. We have consumers’ associations like the Consumer Advocacy Center they also have their interest which is also aligned to the Telecom Industry why will you switch into that of the consumers if they have their advocacy centre” (R16, CPA, 2019)

- **Theme 8: Communication interests management**

On the issue of which people or groups are responsible for managing communication interests within the industry, the majority of the participants indicated that it is the regulator (NCA) and the Ministry of Communications. Similarly, interest groups such as the Consumer Protection Agency, Telecom Chamber and Consumer Advocacy Group are also groups that ensure the effective management of the communication interests of stakeholders. The results were found in an expressed view of a participant:

“The main group that manages communication interests is the regulator (NCA) and the Ministry of Communications (R-19, Academic Expert, 2019)

- **Theme 9: Effective management of communication interests**

Effective management of communication interests was assessed. The results show that the interest of diverse stakeholders is not managed effectively. According to these participants, effective management is based on a significant number of factors, including:

- (a) Transparency
- (b) Adherence to NCA mandate
- (c) Regular discussion of the industry
- (d) Adherence to telecommunication industry Act
- (e) Sanctions meted for defaulters
- (f) Monthly quality of service monitoring
- (g) Direct contact with service providers
- (h) Effective collaboration across stakeholder group
- (i) Consumer education

The result was found in an expressed view of a participant:

“I think on a range of 100%, I will grade the effectiveness of the regulator as 80%-85%. It comes as a result of many things we have been doing such as consumer education, transparency, regular discussions and monthly quality of service monitoring” (R3, NCA, 2019)

- **Theme 10: Challenges emanating from the management of communication interests**

On the issue of what challenges evolved from the management of communication interests by those responsible, the result shows its difficulty in managing the diverse interest of stakeholders within the telecommunication industry of Ghana. Some of the challenges revealed by participants included:

- (a) The diverse interest of different stakeholders
- (b) Lack of adequate engagement of all stakeholders
- (c) Lack of common platform for redress

(d) Ineffective feedback system.

These challenges can derail the efforts of the stakeholders and consumers in managing communication interests in Ghana. The diversity of the communication interests among stakeholders and consumers makes it difficult to understand and manage these interests effectively. Some of the communication interests of the consumers include receiving prompt information about service delivery, while the communication interests of the regulator include enforcing policies in the industry. Moreover, the inability of the stakeholders to engage consumers in their communication interests can also affect the management of communication interests.

6.2.3 Communication challenges

The third secondary research question was: How are communication challenges faced by stakeholders in the Ghanaian telecommunication industry managed? In order to find answers to this research question, diverse themes were developed based on the information obtained from participants during the interview. The result is presented below.

- **Theme 11: Stakeholder communication challenges**

The study investigated communication challenges faced by stakeholders in the telecommunication industry of Ghana. The result reveals a significant number of challenges. These challenges, according to participants, include:

- (a) Stakeholder collaboration problems
- (b) Lack of adherence to the telecommunication Act
- (c) Policy issues
- (d) Lack of knowledge regarding the operations of the regulator
- (e) High expectations of consumers
- (f) Misreading of communication information
- (g) Mobile platform service problems
- (h) The poor assumption that mobile money is a network service, whilst it is regarded as a financial service by the Bank of Ghana

- (i) The diverse interest of stakeholders
- (j) Entrench position of some stakeholders
- (k) Feedback system problems
- (l) Legal issues
- (m) The link between the regulator and other regulatory bodies within the telecommunication industry
- (n) Language barrier
- (o) Communication barrier

These challenges were captured in some expressed views of participants:

“There is also the challenge of people assuming that mobile money, for example, is financial service access with the Bank of Ghana. Anything financial is related to the Bank of Ghana, but because it is on mobile phone, they assume NCA has control over it, but we do not” (R3, NCA, 2019)

“Availability of channels for discussing some of these issues sometimes is a problem. Other stakeholders might take various positions, and that becomes difficult. Even our members might also have their oppositions so in terms of being able to get able to a united form to be able to communicate” (R1, NCA, 2019)

“The big challenge is the issues of stakeholder interest. People would have perceptions and would go with their perceptions rather than the facts on the ground” (R14, GAE, 2019)

- **Theme 12: Negative effect of communication challenges**

The study investigated the effect of communication challenges on managing communication interests. According to participants, the challenges have a tremendous effect on effectively managing stakeholders' diverse interests. It, therefore, affects the operational efficiency of the regulator, the ministry and the telecommunication service operators.

The result reveals a negative effect of the communication challenges on the effective management of communication interests in the telecommunication industry of Ghana.

A participant indicated as:

“I must admit that the effect of the challenges on the management of communication interests cannot be downplayed. Its effect is generally negative” R14, GAE, (2019)

6.2.4 Improving communication interests

The fourth secondary research question of the study was: How can stakeholders in the Ghanaian telecommunication industry assist with improving stakeholder communication? In order to find answers to this research question, diverse themes were developed based on the information obtained from participants during the interview. The result is presented below.

- **Theme 13a: Understanding the communication interests of stakeholders**

According to participants, a clear understanding of the diverse interests of all stakeholders is needed. It will provide the way upon which discussions on such interests can be opened and thorough engagement undertaken. According to most participants, this has the propensity of ensuring effective decision-making that affects all stakeholders within the telecommunication industry of Ghana.

- **Theme 13b: Policy issues**

Most of the policy decisions are taken by the Ministry of Communications, which lacks the holistic and total involvement of all stakeholders. It has the propensity to reduce any challenges and problems that may evolve from the perspective of other stakeholders within the industry. Therefore, participants advocate that stakeholder groups must be part of the policy decision-making of the ministry in order to ensure that holistic decisions are taken.

- **Theme 13c: Common platform or open framework**

One of the major challenges raised by participants in the issue of a common platform for all telecommunication stakeholders. Therefore, to improve stakeholder engagement and management, a single platform is required that connects all stakeholders, both minor and major so that adequate information can be shared for discussion on a regular and constant basis. The platform will also act as the base upon which stakeholder interest discussions are held and contributions made by diverse stakeholders to that effect.

The measure of improving communication was revealed by the respondents as follows:

“Telecom platform or forum of some kind where various stakeholders have a common discussion. As long as a consumer knows that these are my redress channels, as long as the operator knows that I am not happy with this so this is how I can get, then it will help all parties” (R21, Academic Expert, 2019)

“I think what we need to do is to have a very open framework where we allow various stakeholders to be able to bring their ideas together, and we need to get to a point where regulators and policymakers move away from the fact that we are the regulators and we know it all” (R6, EPA, 2019)

6.3 QUANTITATIVE ANALYSIS: STAKEHOLDER RESULTS

In the first phase of the study, the quantitative analysis concerning 100 stakeholders sampled is presented below. The primary research objective was to examine efficient communication strategies employed by stakeholders in improving communication interest management within the telecommunication industry of Ghana. Secondary objectives were developed to facilitate the achievement of the primary objective. The results from the secondary objectives are presented below. Descriptive statistics, exploratory factor analysis and inferential statistics are presented to ensure the achievement of the objectives.

6.3.1 Existing communication strategies

The first secondary objective of the study was to investigate the existing communication strategies (if any) among the stakeholders in the Ghanaian telecommunication industry. The analysis covered descriptive statistics, exploratory factor analyses, reliability, and inferential analysis. The result is presented below.

6.3.1.1 Descriptive Statistics

- **Question B1 – B3: Awareness Creation (AC)**

The study employed a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). In order to ascertain knowledge on awareness creation as a vital communication strategy from key stakeholders within the telecommunication industry of Ghana, three items were presented to selected stakeholders.

The descriptive statistics of Awareness Creation are presented in Table 6.2. The Table contains the Mean, Standard Deviation and sample size.

Table 6.2: Descriptive Statistics for Awareness Creation

	Mean	Std. Deviation	N
B1: I am aware of and understand the operations of the regulator within the telecommunication industry of Ghana	4.0000	.89893	100
B2: I am aware of and understand the procedures for addressing stakeholder concerns in the telecommunication industry of Ghana	3.9200	.90654	100
B3: I am aware of and understand transparency and inclusive approaches for addressing stakeholder interest in the telecommunication industry of Ghana	3.7700	.98324	100
Overall Mean	3.89		

Source: Field Data (2020).

From the result, it is clear that the overall mean is 3.89. The result clearly shows that stakeholders of the telecommunication industry of Ghana tend to be aware of and understand the operations of the industry's regulator and the procedures for addressing stakeholder concerns in the industry.

- **Factor Analysis-Question B1 – B3: Awareness Creation (AC)**

The result shows that the KMO measure of sampling adequacy was .727, which is greater than the recommended threshold of 0.5 (Kline, 1994; Tabachnick & Fidell 2007; Hair, *et al.*, 1998, George & Mallery 2001); Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the awareness creation construct, showing the appropriateness of the factor analysis.

Table 6.3: Factor Analysis Results

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
AC	B1	.879	.871	2.395	70.168
	B2	.874			
	B3	.755			

Source: Field Data (2020).

Table 6.3 shows the result of the factor analysis. The result shows a confirmation of the unidimensionality of the awareness creation construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 70.17% of the variance. The factor loadings are shown in the Table.

Further, based on Cronbach's alpha, the internal consistency (reliability) for the awareness creation construct was .871. Comparatively, the ascertained value is above the recommended threshold value of 0.7, indicating satisfactory internal consistency. Additionally, the factor-based variable was calculated as the mean value of the items included in the factor.

- **Question B4 – B6: Traffic Communication (TC)**

The result of traffic communication is presented in Table 6.4. The Table contains the Mean, Standard Deviation and sample size.

Table 6.4: Descriptive Statistics of Traffic Communication

	Mean	Std. Deviation	N
B4: I know the existence of traffic safety communication in our telecommunication operations	3.6600	1.10298	100
B5: I understand the operations of traffic safety communication in our telecommunication operations	3.1100	1.05309	100
B6: I understand that the traffic safety communication was developed to enhance healthy relationships and mitigate risk within our operations	3.4200	.90095	100
Overall Mean	3.39		

Source: Field Data (2020).

In order to ascertain knowledge of traffic communication as a vital communication strategy from key stakeholders within the telecommunication industry of Ghana, three items were presented to selected stakeholders. The overall mean value was 3.39. The result clearly shows that traffic safety communication in telecommunication operations and traffic safety communication was developed, to a slight degree, to enhance healthy relationships and mitigate risk within operations.

- **Factor Analysis-Question B4 – B6: Traffic Communication (TC)**

The result shows that the KMO measure of sampling adequacy was .528, which is greater than the recommended threshold of 0.5; Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the traffic communication construct, showing the appropriateness of the factor analysis.

Table 6.5: Factors Analysis Results

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
TC	B4	-	.674	1.575	35.52
	B5	.696			
	B6	.740			

Source: Field Data (2020).

Table 6.5 shows the result of the factor analysis. The result shows a confirmation of the unidimensionality of the traffic communication construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor, however, only explains 35.52% of the variance. The factor loadings are shown in the Table. Item B4 loaded too low and is excluded from the analysis. Further, based on Cronbach's alpha, the internal consistency (reliability) for the traffic communication construct was .674 for items B5 and B6. Comparatively, the ascertained value is below the recommended value of 0.7 but higher than 0.6, the recommended threshold for exploratory research; the internal consistency (reliability) was therefore considered acceptable. It is acknowledged that the variance explained is low. However, as the study is exploratory in investigating relationships, it was used in further analysis. The factor-based variable was consequently calculated as the mean value of the two items included in the identified factor.

Question B7 – B9: Relevant Operational Information (ROI)

The result of relevant operational information is presented in Table 6.6. The Table contains the Mean, Standard Deviation and sample size.

Table 6.6: Descriptive Statistics of ROI

Items	Mean	Std. Deviation	N
B7: I believe the telecommunication regulator delivers operational information to all stakeholders at the right time	3.5500	.95743	100
B8: I believe information flow within the telecommunication industry through the regulator is gender-sensitive and culturally-appropriate	3.2200	1.08786	100

B9: I believe there is always a regular two-way flow of information among stakeholders within the telecommunication industry of Ghana	3.3300	.86521	100
Overall Mean	3.36		

Source: Field Data (2020).

In order to ascertain knowledge of relevant operational information (ROI) as a vital communication strategy from key stakeholders within the telecommunication industry of Ghana, three items were presented to selected stakeholders. From the result, it is clear that the overall mean is 3.36. Referring back to the three statements, a very high proportion indicated a neutral opinion (42%, 32%, and 45% per item, respectively), indicating potential uncertainty around these items.

- **Factor Analysis-Question B7 – B9: Relevant Operational Information (ROI)**

The result shows that the KMO measure of sampling adequacy is .412, which is smaller than the recommended threshold of 0.5; however, Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the relevant operational information construct. It was, therefore, decided to continue based on Bartlett's Test.

Table 6.7: Factor Analysis Results

Construct	Items	Factor 1 Loading	Factor 2 loading	Cronbach's alpha	Eigenvalues	Variance (%)
ROI	B7		.552	.566	1.446	49.17%
	B8	.594			1.070	
	B9	.769				

Source: Field Data (2020).

Two factors were identified based on the eigenvalue larger than 1 criterion, explaining 49% of the variance. However, as a factor cannot consist of one item only, item B7 was discarded from further analysis. The Cronbach's alpha value for items B8 and B9 was 0.566, below 0.6 consideration for

exploratory research, indicating unacceptable internal consistency (reliability). Therefore, this construct was not used in subsequent analysis.

- **Question B10 – B12: Implementation and Monitoring (IM)**

The result of implementation and monitoring (IM) is presented in Table 6.8. The Table contains the Mean, Standard Deviation and sample size.

Table 6.8: Descriptive Statistics of Implementation and Monitoring (I/M)

Items	Mean	Std. Deviation	N
B10: I believe the telecommunication regulator is responsible for the implementation and monitoring of stakeholder communication	3.8400	.96106	100
B11: I believe the telecommunication regulator ensures proper information dissemination among stakeholders	3.6500	.82112	100
B12: I believe there exists regular contact with all interested stakeholders by the regulator within the telecommunication industry of Ghana	3.8000	.89893	100
Overall Mean	3.76		

Source: Field Data (2020).

In order to ascertain knowledge on implementation and monitoring (I/M) as a vital communication strategy from key stakeholders within the telecommunication industry of Ghana, three items were presented to selected stakeholders. From the result, it is clear that the overall mean is 3.76. The result clearly shows that stakeholders tend to agree that the telecommunication regulator is responsible for the implementation and monitoring of stakeholder communication and regular contact with all interested stakeholders within the telecommunication industry of Ghana.

- **Factor Analysis-Question B10– B12: Implementation and Monitoring (I/M)**

The result shows that the KMO measure of sampling adequacy is .487, which is lower than the recommended threshold of 0.5. However, Bartlett's Test of Sphericity was statistically significant ($p < 0.05$) at the 5% level of significance for the three items dealing with the implementation and monitoring construct, showing the appropriateness of the factor analysis. It was, therefore, decided to continue based on Bartlett's Test.

Table 6.9: Factor Analysis Results

Construct	Items	Factor 1 Loading	Factor 2 loading	Cronbach's alpha	Eigenvalues	Variance (%)
I/M	B10	.503		.410	1.274	24.68
	B11	.562			1.009	
	B12		.334			

Source: Field Data (2020).

Two factors were identified based on the eigenvalue larger than 1 criterion, explaining only 24.68% of the variance. However, as a factor cannot consist of one item only, item B10 was discarded from further analysis. The Cronbach's alpha value, which was 0.410 for the two remaining items, was below 0.6, indicating unacceptable reliability. Therefore, this construct was not used in subsequent analysis.

- **Question B13– B15: Appropriate Feedback (AF)**

The results of appropriate feedback (AF) are presented in Table 6.10. The Table contains the Mean, Standard Deviation and sample size.

Table 6.10: Descriptive Statistics of Appropriate Feedback

Item	Mean	Std. Deviation	N
B13: I know the required channels through which stakeholders can provide feedback on issues previously communicated by the regulator	3.6800	.85138	100
B14: I am aware of regular meetings among stakeholders, which ensures that sufficient feedback is provided	3.4600	.94730	100
B15: I believe the regulator provides accurate feedback promptly to all interested stakeholders	3.3400	.98699	100
Overall Mean	3.49		

Source: Field Data (2020).

In order to ascertain knowledge of appropriate feedback (AF) as a vital communication strategy from key stakeholders within the telecommunication industry of Ghana, three items were presented to selected stakeholders. The result clearly shows that the overall mean discovered is 3.49. A very high proportion of the three statements indicated a neutral opinion. Therefore, it can point to uncertainty regarding the aspects asked.

- **Factor Analysis-Question B13– B15: Appropriate Feedback (AF)**

The result shows that the KMO measure of sampling adequacy was .565, which is greater than the recommended threshold of 0.5, and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the appropriate feedback construct, showing the appropriateness of the factor analysis.

Table 6.11: Factor Analysis Results

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
AF	B13	.330	.614	1.704	49.69
	B14	.883			
	B15	.602			

Source: Field Data (2020).

The Table above shows the result of the factor analysis. The result shows a confirmation of the uni-dimensionality of the appropriate feedback construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 49.69% of the variance. The factor loadings are shown in the table. Further, based on Cronbach's alpha, the internal consistency (reliability) for the AF construct was .614. Comparatively, the ascertained value is higher than 0.6, the recommended threshold for exploratory research; the internal consistency (reliability) was thus considered acceptable. The factor-based variable was consequently calculated as the mean value of the items included in the factor.

- **Question B16– B18: Regular Consultations (RC)**

The result given communication strategy concerning stakeholders, such as regular consultations (RC), is presented in Table 6.12. The Table contains the Mean, Standard Deviation and sample size.

Table 6.12: Descriptive Statistics of RC

Items	Std.		N
	Mean	Deviation	
B16: I believe stakeholders are consulted regularly by the telecommunication regulator	3.3400	1.02711	100
B17: I believe stakeholder engagement occurs timely and in regularly	3.3700	.93911	100
B18: I believe stakeholders are part of all major decisions that are taken within the telecommunication industry of Ghana	3.5500	1.01876	100
Overall Mean	3.42		

Source: Field Data (2020).

In order to ascertain knowledge of regular consultations (RC) as a vital communication strategy from key stakeholders within the telecommunication industry of Ghana, three items were presented to selected stakeholders. It is clear that only one of the items, B18, obtained values greater than the overall mean value [B18= 3.5500]. From the result, it is clear that the overall mean is 3.42. The

result shows that stakeholders do not necessarily believe that telecommunication consults regularly.

- **Factor Analysis-Question B16– B18: Regulation Consultations (RC)**

The result shows that the KMO measure of sampling adequacy was .741, which is greater than the recommended threshold of 0.5; Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the regulation consultations construct, showing the appropriateness of the factor analysis.

Table 6.13: Factor Analysis Results

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
RC	B16	.897	.886	2.445	72.40
	B17	.833			
	B18	.820			

Source: Field Data (2020).

Table 6.13 shows the result of the factor analysis. The result shows a confirmation of the unidimensionality of the appropriate feedback construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 72.40% of the variance. The factor loadings are shown in Table 6.13. Further, based on Cronbach's alpha, the internal consistency (reliability) for the RC construct was .886. Comparatively, the ascertained value is above the recommended threshold value of 0.7, which shows a satisfactory level. The factor-based variable was consequently calculated as the mean value of the items included in the factor.

- **Question B19– B21: Use of Public Information Systems (PIS)**

The result given communication strategy concerning stakeholders, such as the use of the public information system (PIS), is presented in Table 6.14. The Table contains the Mean, Standard Deviation and sample size.

Table 6.14: Descriptive Statistics of PIS

Item	Mean	Std. Deviation	N
B19: I believe regular publications on industrial progress are made by the regulator using the most appropriate communication channels	3.4100	.82993	100
B20: I believe the traditional media is the major public information system used by the regulator	3.2200	1.05006	100
B21: I believe the regulator often develops key information materials for distinct stakeholder groups	3.3000	.97959	100
Overall Mean	3.31		

Source: Field Data (2020).

In order to ascertain knowledge on the use of the public information system (PIS) as a vital communication strategy from key stakeholders within the telecommunication industry of Ghana, three items were presented to selected stakeholders. From the result, it is clear that the overall mean is 3.31. The result shows that stakeholders do not necessarily agree or disagree that the telecommunication regulator provides the public with the information required for all stakeholders at the right time.

- **Factor Analysis-Question B19– B21: Use of Public Information Systems (PIS)**

The result shows that the KMO measure of sampling adequacy was .656, which is greater than the recommended threshold of 0.5; and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the use of the public information systems (PIS) construct, showing the appropriateness of the factor analysis.

Table 6.15: Factor Analysis Result

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
PIS	B19	.748	.674	1.838	42.62
	B20	.572			
	B21	.626			

Source: Field Data (2020).

Table 6.15 shows the result of the factor analysis. The result shows a confirmation of the unidimensionality of the use of the PIS construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 42.62% of the variance. Further, based on Cronbach's alpha, the internal consistency (reliability) for the PIS construct was .674. Comparatively, the ascertained value is higher than 0.6, the recommended threshold for exploratory research; the internal consistency (reliability) was considered acceptable. The factor-based variable was consequently calculated as the mean value of the items included in the factor. The factor loadings are shown in the Table.

- **Question B22– B24: Promotion of Stakeholder Alignment (PSA)**

Given communication strategy concerning stakeholders, such as the use of the promotion of stakeholder alignment (PSA), is presented in Table 6.16. The Table contains the Mean, Standard Deviation and sample size.

Table 6.16: Descriptive Statistics of PSA

Items	Mean	Std. Deviation	N
B22: I am aligned with the operational activities of the telecommunication industry in Ghana	3.4200	.83097	100
B23: My expectations are managed effectively by the telecommunication industry regulator	3.0700	.86754	100
B24: I believe my interest is aligned with the objectives of the telecommunication industry regulator	3.2800	.86550	100

Overall Mean	3.25		
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Source: Field Data (2020).

In order to ascertain knowledge on the promotion of stakeholder alignment (PSA) as a vital communication strategy from key stakeholders within the telecommunication industry of Ghana, three items were presented to selected stakeholders. From the result, it is clear that the overall mean is 3.25. The result shows that stakeholders are not fully in agreement that the promotion of stakeholder alignment aid in building an effective communication milieu amongst stakeholders within the industry,

- **Factor Analysis-Question B22– B24: Promotion of Stakeholder Alignment (PSA)**

The result shows that the KMO measure of sampling adequacy was .565, which is greater than the recommended threshold of 0.5; and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the promotion of stakeholder alignment (PSA) construct, showing the appropriateness of the factor analysis.

Table 6.17: Eigenvalues and Factors Loadings

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
PSA	B22	.316	.673	1.848	49.11
	B23	.839			
	B24	.819			

Source: Field Data (2020).

Table 6.17 shows the result of the factor analysis. The result shows a confirmation of the unidimensionality of the use of the PSA construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 49.11% of the variance. The factor loadings are shown in the Table.

Further, based on Cronbach's alpha, the internal consistency (reliability) for the PSA construct was .673. Comparatively, the ascertained value is below the recommended value of 0.7 but higher than

0.6, the recommended threshold for exploratory research, and the internal consistency (reliability) was considered acceptable. The factor-based variable was consequently calculated as the mean value of the items included in the factor.

The findings suggest the importance of communication strategy, including awareness creation, traffic communication, appropriate feedback, regular consultation and use of public information system and promotion of stakeholder alignment. On this basis, the general descriptive statistics for the dominant communication strategies from the stakeholders' perspective are presented in Table 6.18.

Table 6.18: Descriptive Statistics Result (Communication Strategy-Stakeholders)

		AC	TC	AF	RC	PSA	PIS
N	Valid	100	100	100	100	100	100
	Missing	0	0	0	0	0	0
Mean		3.8967	3.2650	3.4933	3.4200	3.2567	3.3100
Median		4.0000	3.0000	3.3333	3.3333	3.333	3.3333
Std. Deviation		.82972	.85119	.69869	.89846	.66474	.74499
Skewness		-.311	-.034	.099	-.472	-.338	-.248
Std. Error of Skewness		.241	.241	.241	.241	.241	.241
Kurtosis		-.858	-.101	-.582	.147	-.326	.596
Std. Error of Kurtosis		.478	.478	.478	.478	.478	.478
Minimum		2.00	1.00	2.33	1.33	1.67	1.33
Maximum		5.00	5.00	5.00	5.00	4.67	5.00

Source: Field Data (2020).

Table 6.18 shows the results of the descriptive statistics for the six identified factors concerning the communication strategy-stakeholder perspective. From the result, it is clear that the largest mean was ascertained by awareness creation (AC) (M= 3.8967), followed by appropriate feedback (M= 3.4933), regular consultations (RC) (M=3.4200), use of public information system (PIS) (M=3.3100), traffic communication (TC) (M=3.2650) and the lowest mean value was observed for

promotion of stakeholder alignment (PSA) = (M = 3.2567). The skewness and kurtosis values are between -2 and +2 and can be assumed to be normally distributed.

- **Correlation Results of the six identified factors**

The correlation concerning the six identified variables was examined. The Pearson correlation value indicates the strength and direction of the relationship between each pair of factors. The strength has been classified as small/weak (<0.3), moderate (between 0.3 and 0.5) and strong (larger than 0.5) (Cohen, 1988). The Pearson correlation results are presented below.

Table 6.19: Correlation Matrix Result

		AC	TC	AF	RC	PIS	PSA
AC	Pearson Correlation	1					
TC	Pearson Correlation	-0.039	1				
AF	Pearson Correlation	.441**	0.019	1			
RC	Pearson Correlation	.316**	0.141	.645**	1		
PIS	Pearson Correlation	.305**	0.164	.473**	.275**	1	
PSA	Pearson Correlation	.281**	.268**	.669**	.693**	.567**	1

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

Source: Field Data (2020).

The result shows that awareness creation has a positive and moderate statistically significant relationship with appropriate feedback, regular consultation and PIS, with the correlation coefficient ranging between .305 and .441 ($p < 0.01$) and has a small positive statistically significant

relationship with PSA (.281; $p < 0.01$). However, no statistically significant relationship with traffic communication was evident. This is indicated as $r = -.039$, $p > 0.05$.

There is no statistically significant correlation between traffic communication with appropriate feedback, regular consultation and PIS (all p values > 0.05). There is a weak statistically significant correlation between traffic communication with PSA (.268, $p < 0.01$).

There are positive, statistically significant correlations between appropriate feedback and regular consultation (strong), PIS (moderate) and PSA (strong) (all p values < 0.01).

There are positive weak, and strong statistically significant correlations between RC with PIS and PSA, respectively, as well as a strong positive correlation between PIS and PSA (all p values < 0.01).

6.3.2 Stakeholder communication challenges: stakeholder perspective

The third secondary research objective was to identify the communication challenges facing the stakeholders in the Ghanaian telecommunications industry. In order to achieve this objective, information was obtained from diverse stakeholders.

In order to ascertain stakeholder communication interests challenges from key stakeholders within the telecommunication industry of Ghana, ten items were presented to selected stakeholders. The study employed a five-point Likert scale, ranging from strongly disagree (1) to agree (5) strongly. The descriptive statistics results regarding stakeholder communication interest challenges are presented in the Table below. The Table contains the Mean, Standard Deviation and sample size. The result is presented below.

Table 6.20: Stakeholder Communication Interests Challenges

	Mean	Std. Deviation	Analysis N
D1: I face resistance to sharing information	2.9500	.86894	100
D2: I have difficulty realising my new roles in the evolving telecommunication industry	2.5600	.86830	100
D3: I sometimes misdefine my real needs and interests during communication	2.7500	1.03840	100
D4: It is difficult working with different stakeholders with different views	3.1500	1.08595	100
D5: I have a problem with the use of some modern communication channels, for example, social media, emails, et cetera	2.3000	1.11464	100
D6: Providing feedback to the telecommunication regulator is sometimes difficult for me due to work schedules and pressure	3.0000	.84087	100
D7: Lack of resources in ensuring effective communication also restrain me from providing feedback on time	3.1400	.91032	100
D8: I believe the regulator is unable to provide information on a regular and timely basis, and that is a challenge for me	3.2300	1.08110	100
D9: The regulator has difficulty in managing the diverse expectations of all stakeholders	3.1600	1.07045	100
D10: I have a problem with regards to the use of the most suitable communication channel when dealing with other stakeholders	3.1500	1.06719	100
Overall Mean	2.93		

Source: Field Data (2020).

The item mean values range between 2.3 and 3.23, indicating a tendency to disagree with some of the statements (mean value of 2.5 and lower) and a mean neutral opinion for the other .

- **Factor Analysis-Question D1 – D10: Stakeholder Communication interests Challenges (SCIC)**

The result shows that the KMO measure of sampling adequacy was .641, which is greater than the recommended threshold of 0.5; and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the ten items dealing with stakeholder communication interests challenges (SCIC), showing the appropriateness of the factor analysis.

Table 6.21: Factor Analysis Result

Construct	Items	Factor Loading	Factor 2	Factor 3	Cronbach's alpha	Eigenvalues	Variance (%)
SCIC	D1	.754			.737(factor1)	3.297	61.7%
	D2	.		.871	.672 (factor 2)	1.868	
	D3	.593			.575 (factor 3)	1.004	
	D4			.674			
	D5	.585					
	D6		.488				
	D7	.618					
	D8		.881				
	D9		.812				
	D10	.591					

Source: Field Data (2020).

The result from the factor analysis does not confirm the uni-dimensionality of the SCIC construct based on the identified factors (three factors identified) according to the eigenvalue criterion (eigenvalue > 1); the three factors explain 61.7% % of the total variance. The factor loadings are shown in the Table.

Further, based on Cronbach's alpha, the internal consistency (reliability) for the three identified SCIC constructs were .737, .672 and .575. Comparatively, two of the ascertained values were above the recommended value of 0.6 for exploratory research, which is satisfactory. The third factor will be discarded and not be used in further analysis. Additionally, the factor-based values were consequently calculated as the mean value of the items included in the factor.

6.3.3 Communication interests of stakeholders: stakeholder perspective

Secondary research objective 3 was to examine the communication interests of the stakeholders in the Ghanaian telecommunication industry. The result is shown as follows:

- **Awareness of Stakeholder Communication interests**

The study examined the awareness level of stakeholders of telecommunication companies on communication interests. The result is shown in Table 6.22.

Table 6.22: Awareness of Stakeholder Communication Interests

Indicator	Key Stakeholders	
	Yes (%)	No (%)
Awareness of Stakeholder Communication interests	35(35.0)	65(65.0)
Sub-Total	100	

Source: Field Data (2018).

The result from Table 6.22 shows the awareness of stakeholders' communication interests within Ghana's telecommunication industry. The result shows that for key stakeholders, 65 (65.0%) are unaware of stakeholder communication interests, whilst 35 (35.0%) are aware of communication interests for stakeholders within the telecommunication industry. The results from the request to specify if they have answered yes, show that communication interests areas of telecommunication stakeholders include: quality customer care, feedback on information, quality service, improved network service, signal/network problems, measures and channels for complaints, wider coverage, affordable prices, consumer protection, regular information sharing, un-dropped calls, data charges

issues, call enhancement, uninterrupted calls, deducted airtime, mobile communication, mobile apps, government taxes, internet issues, prompt response and internet access.

- **Communication interests Management**

The study also examined the communication interest management of the telecommunication companies' stakeholders and customers/consumers. The result is shown in Table 6.23.

Table 6.23: Communication Interests Management

Indicator	Key Stakeholders	
	Yes (%)	No (%)
Communication Interests Management	11 (11.0)	89(89.0)
Sub-Total	100	

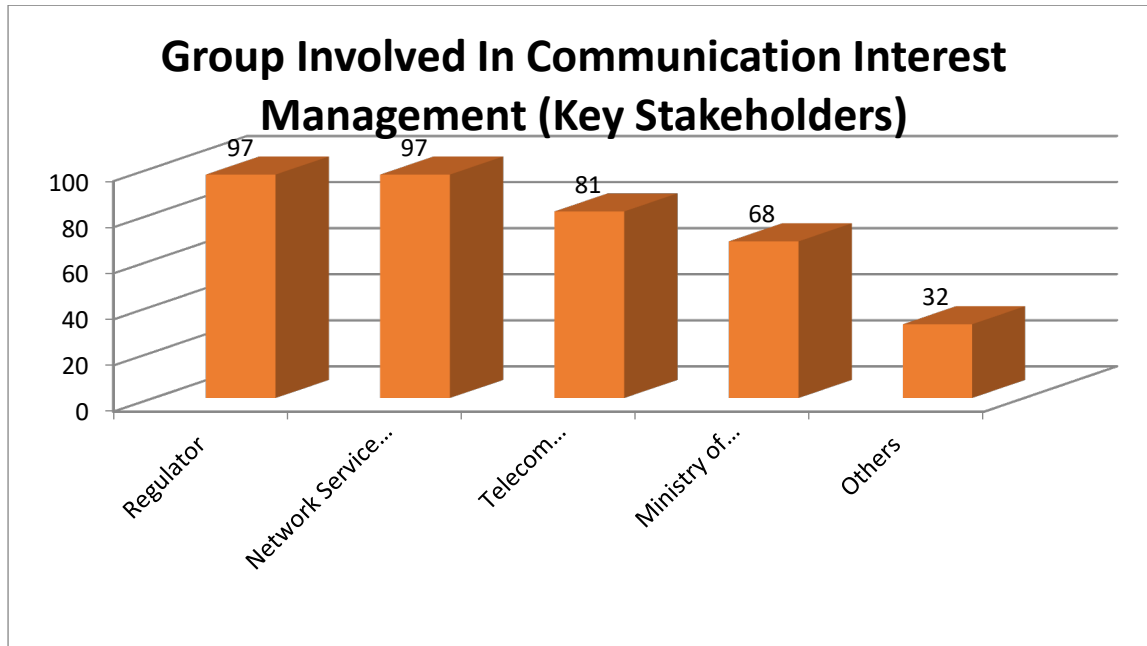
Source: Field data (2018).

Table 6.23 shows the result of the management of the communication interests of stakeholders in the telecommunication industry of Ghana. The result shows that stakeholders within the telecommunication industry indicated that their interests are not being managed effectively, representing 89 (89.0%), whilst 11(11.0%) indicated that it is being managed effectively. The result implies that communication interests management amongst stakeholders within the telecommunication industry is highly problematic and challenging. In light of this, these indications, according to telecommunication stakeholders, have the propensity to influence and ensure the effective management of the communication interests of stakeholders within the telecommunication industry of Ghana.

- **Group Involved in Communication Interests Management**

The study assessed which groups are involved in effectively managing communication interests. The result is presented in Figure 6.1.

Figure 6.1: Group Involved in Effective Management of Communication Interests



Source: Field Data (2020).

The rank order result shows groups responsible for effectively managing the communication interests from the key stakeholders' perspective. The result shows that the dominant groups are the regulator and network service provider ranked ^{first} (chosen by 97% of respondents); followed by telecommunication subscribers or consumers ranked 2nd with (81%); next to it is the ministry of Communication ranked third with (68%), and the least ranked, is others (Environmental Protection Agency, Academia, Telecom Chamber, among others) ranked 4th with (32%). The result from key stakeholders suggests that diverse groups are involved in the effective management of stakeholder interest within the telecom industry of Ghana.

Table 6.24: Communication Interests Management by Those Responsible

Indicator	Key Stakeholders	
	Yes (%)	No (%)
Communication interests Management	9 (9.0)	91(91.0)
Sub-Total		100

Source: Field Data (2020).

Table 6.24 shows the result of the management of communication interests of stakeholders by those agencies or institutions responsible. The result shows that key stakeholders within the telecommunication industry indicated that their interests are not being managed effectively by agencies or institutions responsible, representing 91 (91.0%), whilst 9 (9.0%) indicated that it is being managed effectively by the responsible institutions or agencies.

Generally, communication interest management amongst stakeholders within the telecommunication industry is highly problematic because those institutions or agencies responsible have not taken a keen interest in ensuring effective management of stakeholder communication interests within the telecommunication industry of Ghana. Therefore, it requires responsible institutions that can develop effective communication interest management techniques and strategies to curtail such challenges.

Table 6.25: Communication Interests Management Challenges

Key Stakeholders		
Challenges	Ranked	Percent (%)
Lack of information sharing	7 th	38.0
Poor Network	1 st	87.0
Fraudulent Practices	8 th	35.0
Poor handling of stakeholder Interest	2 nd	79.0
Poor communication service	4 th	59.0
Failure to expand services	6 th	43.0
Less attention to stakeholder interest	3 rd	68.0
Lack of research	10 th	18.0
Organisational terminologies	9 th	28.0
Non-complaint operation	6 th	43.0
Poor information dissemination	5 th	54.0

Source: Field Data (2020).

The study investigated by asking respondents what challenges evolved from the management of communication interests by agencies or institutions responsible within the telecommunication industry of Ghana. From the key stakeholder perspective, the ranked result above shows that the most dominant communication interests management challenge was poor network issues which were ranked first. It was followed by poor handling of stakeholder interest, ranked second, less attention to stakeholder interest (3rd rank), poor communication service (4th rank), poor information dissemination (5th rank), failure to expand services and non-compliant operation (6th rank), lack of information (7th rank), organisational terminologies (9th rank). The least represented challenge was the lack of research (10th rank).

6.3.4 Improving stakeholder communication: stakeholder perspective

The fourth secondary research objective was to explore ways to improve communication among the stakeholders in the Ghanaian telecommunication industry. Information was obtained from diverse stakeholders, and the descriptive statistics for the items are shown below.

Table 6.26: Descriptive Statistics

Items	Mean	Std. Deviation	N
E1: The continuous engagement of all stakeholders	4.2100	.94596	100
E2: Clear definition of stakeholder needs and expectations	4.3000	.78496	100
E3: The development and implementation of a stakeholder communication plan should be the way forward	4.2400	.78005	100
E4: The encouragement of regular feedback among stakeholders	4.3400	.71379	100
E5: Properly defined communication channels for all stakeholders	4.3600	.71802	100
E6: Regular interaction to improve stakeholder relationships is very important	4.2700	.75015	100

E7: Determining appropriate institutional options for stakeholder engagement	4.0400	.76436	100
E8: Building stakeholder consensus using regular involvement in decision making	4.1458	0.88233	100
E9: The development of an effective two-way communication process by the NCA	4.2200	.78599	100
E10: The promotion of stakeholder ownership regarding decisions taken	3.9700	.82211	100
E11: Regular systems to monitor and evaluate stakeholder interest	4.3200	.69457	100
Overall Mean	4.22		

Source: Field Data (2020).

The results show that stakeholders in the industry are aware of the various means to improve communication. The overall mean score was 4.22, indicating a tendency to agree regarding ways to improve communication among the stakeholders' result shows that stakeholders are fully in agreement that it is important to improve communication among the stakeholders. The stakeholders indicated from the results that properly defining communication channels for all stakeholders is an important measure in improving communication among stakeholders while promoting stakeholder ownership in decision making is the least recommended means to improve communication among stakeholders.

- **Factor Analysis-Question E1 – E11: Improving Stakeholder Communication (ISC)**

The result shows that the KMO measure of sampling adequacy was .800, which is greater than the recommended threshold of 0.5; and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the eleven items dealing with improving stakeholder communication (ISC), showing the appropriateness of the factor analysis.

Table 6.27: Factor Analysis Results

Construct	Items	Factor Loading 1	Factor Loading 2	Factor Loading 3	Cronbach's alpha	Eigenvalues	Variance (%)
SCIC	E1	.589	.404		.889(factor 1)	5.461	62.44
	E2	1.147					
	E3		.973		.	1.037	
	E4	.751					
	E5	.387					
	E6	.505	.511				
	E7			.892			
	E8						
	E9	.423		.344			
	E10	.337		.626			
	E11	.646		.311			

Source: Field Data (2020).

The result from the factor analysis do not confirm the uni-dimensionality of improving the stakeholder communication construct based on the identified factors (three factors identified) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 62.44% of the variance. The factor loadings are shown in the Table. However, based on studying the double loadings, only two factors remain, consisting of items 1, 2, 4, 5, 6 and 11 for the first factor and items 7, 9 and 10 for the second factor. Further, based on Cronbach's alpha, the internal consistency (reliability) for the two remaining constructs were: .826 and .889. Comparatively, the ascertained values were above the recommended value of 0.6 for exploratory research, which is satisfactory. Additionally, the factor-based values were consequently calculated as the mean value of the variables included in the factor.

In the Table below, the descriptive statistics for the identified factors from section D (challenges) and section E (improved communication mechanisms) are provided.

Table 6.28: Descriptive statistics for identified factors

		Personal StakeholderChallenge	RegulatorChallenge	Imcommechanism	Imcommechanism2
N	Valid	100	100	100	100
	Missing	0	0	0	0
Mean		2,8580	3,1300	4,3000	4,0767
Median		2,8000	3,0000	4,3333	4,0000
Std. Deviation		0,70111	0,77979	0,61955	0,68141
Skewness		0,797	0,308	-0,640	-0,666
Std. Error of Skewness		0,241	0,241	0,241	0,241
Kurtosis		1,596	0,369	0,039	0,213
Std. Error of Kurtosis		0,478	0,478	0,478	0,478
Minimum		1,40	1,33	2,50	2,33
Maximum		5,00	5,00	5,00	5,00

Source: Field Data (2020).

The mean scores for the two factors for section D, are [Personal stakeholder challenges = 2.86; Regulator challenges = 3.13] and two factors for section E [Improved communication efficiency = 4.30; Improved communication effectiveness = 4.08]. The skewness and kurtosis values ranged between -2 and +2, and thus these variables can be assumed to be normally distributed.

- **Correlation Results of the four identified factors**

The correlation concerning the four identified variables was examined. The Pearson correlation value indicates the strength and direction of the relationship between each pair of factors. The strength has been classified as small/weak (<0.3), moderate (between 0.3 and 0.5) and strong (larger than 0.5) (Cohen, 1988). The Pearson correlation results are presented below.

Table 6.29: Correlation Matrix Result

	Personal stakeholder challenges	Regulator challenges	Improved communication efficiency	Improved communication effectiveness
Personal Stakeholder Challenge	1			
Regulator challenge	.287**	1		
Improved communication efficiency	-0,099	.301**	1	
Improved communication effectiveness	-0,001	.285**	.656**	1

Source: Field Data (2020).

The result shows that regulatory challenges have a positive and moderate (0.301) statistically significant relationship with improved communication efficiency and a weak positive (0.285) statistically significant relationship with improved communication effectiveness. A strong positive (0.656), statistically significant, relationship exist between improved communication efficiency and effectiveness. A weak positive (0.287), statistically significant, relationship exist between regulatory challenges and personal stakeholder challenges. The relationships were all statistically significant at the 1 % level of significance

In order to test the relevant hypotheses, the statistical significant predictors of improved communication efficiency (factor 1) and improved communication effectiveness (factor2) were established; an hierarchical regression model was conducted - firstly, one with the factors identified in section B (awareness creation, traffic communication, use of public information system (PIS), appropriate feedback, regular consultation, promotion of stakeholder alignment) and then subsequently by adding the two “challenge” factors, namely personal stakeholder challenges and regulatory challenges, as well as the items that did not form a factor.

- **Hierarchical Regression Result for Improved communications efficiency**

The Table below presents the results in a hierarchical order.

Table 6.30: Hierarchical Regression Result for Improved Communications Efficiency

	Model 1–	Model 2 –
Awareness Creation	.385***	.325***
Traffic Communication	-.252***	-.238***
Appropriate feedback	0,247*	.188
Regular Consultations	-.125	-.122
Use of Public Information System	-.043	.038
Promotion of Stakeholder Alignment	.476***	.503***
B7	-.042	.063
B8	-.254***	-.247***
B9	.026	.035
B10	.125	.145*
B11	-.241***	-.210**
B12	-.185*	-.253**
Stakeholder Challenges		.055
Regulator Challenges		.187**
Adjusted R ²	0.518	0.539
F (p value) for regression model	9.855(.000)	9.262(.000)
R ² change and associated significance	.576(.000)	.028(.055)

Source: Field Data (2020).

The first model excludes challenges and shows that AC, AF and PSA are statistically significant and have a positive relationship with improved communication efficiency, while TC, B8, B11 and B12 are statistically significant and have a negative relationship with improved communication efficiency. The set of independent variables explains 51.8% of the variance. The F-test for the regression model indicated statistical significance ($p < 0.001$); therefore, the beta coefficients differ significantly from zero.

When the two types of challenges were added, the same predictors were still statistically significant. In addition, B10 and regulatory challenges were statistically significant predictors and positively correlated with improved communication efficiency. The set of independent variables explains 53.9% of the variance. The F-test for the regression model indicated statistical significance ($p < 0.001$); therefore, the beta coefficients differ significantly from zero. The two challenges only caused a very small change in R square (0.028) and were statistically significant at the 10% significance level.

Therefore hypotheses 1, 2, 4, 6 and 8 were supported, as statistically significant relationships exist between awareness creation (AC), traffic communication (TC), appropriate feedback (AF), promotion of stakeholder alignment (PSA) and regulatory challenges with improved communication efficiency. Hypotheses 3, 5 and 7 were not supported

A hierarchical model for improved communications effectiveness

The table below presents the hierarchical results of the communication effectiveness in the Ghanaian telecommunications industry.

Table 6.31: Hierarchical of the Model for Improved Communication Effectiveness

	Model 1–	Model 2 –
Awareness Creation	-.001	-.068
Traffic Communication	-.275**	-.212**

Appropriate feedback	.242	.185
Regular Consultations	.094	-.095
Use of Public Information System	-.178	-.105
Promotion of Stakeholder Alignment	.483***	.510***
B7	-.128	-.026
B8	-.162	-.155
B9	.421***	.426***
B10	-.016	.004
B11	-.286***	-.246**
B12	-.199	-.261**
Stakeholder Challenges		.027
Regulator Challenges		.200*
Adjusted R ²	.323	.339
F (p value) for regression model	4.932 (0.000)	4.629(0.000)
R ² change and associated significance	.405(0.000)	0.028 (.131)

Source: Field Data (2020).

The first model excludes challenges and shows that PSA and items B9 are statistically significant and have a positive relationship with improved communication effectiveness, while TC and B11 are statistically significant and have a negative relationship with improved communication effectiveness. The set of independent variables explains 32.3% of the variance. The F-test for the regression model indicated statistical significance ($p < 0.001$); therefore, the beta coefficients differ significantly from zero. When the two types of challenges were added, the same predictors were still statistically significant. In addition, B12 and regulatory challenges were statistically

significant predictors and had a positive relationship with improved communication effectiveness². The set of independent variables explains 33.9% of the variance. The F-test for the regression model indicated statistical significance ($p < 0.001$); therefore, the beta coefficients differ significantly from zero. The two challenges only caused a small change in R square (0.028) and were not statistically significant.

Therefore hypotheses 10, 14 and 16 were supported as statistically significant relationships exist between TC, PSA, and Regulatory challenges with improved communication effectiveness. Hypotheses 9, 11, 12, 13 and 15 were not supported

6.4 QUANTITATIVE ANALYSIS: CUSTOMER RESULTS

In the second phase of the study, the result from the quantitative analysis concerning information obtained from 300 sampled customers is presented in this section. The primary research objective was to examine efficient communication strategies employed by consumers in improving communication interest management within the telecommunications industry of Ghana. Secondary objectives were developed to facilitate the achievement of the primary objective. The results from the secondary objectives are presented below. Descriptive statistics, exploratory factor analysis and inferential statistics are presented to ensure the achievement of the objectives.

6.4.1 Existing communication strategies: consumers' perspective

The fifth secondary research objective was to investigate the existing communication strategies (if any) among consumers in the Ghanaian telecommunication industry. The analysis covered descriptive statistics, exploratory factor analysis, correlation and structural equation modelling.

6.4.1.1 Descriptive statistics

- **Question B1 – B3: Awareness Creation (AC)**

The descriptive statistics results regarding Awareness Creation are presented in Table 6.32. The Table contains the Mean, Standard Deviation and sample size.

Table 6.32: Descriptive Result - Awareness Creation

Items	Mean	Std. Deviation	N
B1: I am aware of and understand the operations of the National Communication Authority (NCA) within the telecommunication industry of Ghana	2.5267	1.29158	300
B2: I am aware of and understand the procedures for addressing consumer concerns in the telecommunication industry of Ghana	2.4233	1.19815	300
B3: I am aware of and understand transparency and inclusive approaches to addressing consumer interest in the telecommunication industry of Ghana	2.4733	1.19193	300
<i>Overall Mean</i>	<i>2.47</i>		

Source: Field Data (2020).

In order to ascertain knowledge on awareness creation as a vital communication strategy from key customers within the telecommunication industry of Ghana, three items were presented to selected customers. From the result, it is clear that the overall mean is 2.47, which shows that, on average most of the respondents do not fully regard INSTEAD OF DISAGREE? awareness creation as a communication strategy in the industry.

- **Exploratory Factor Analysis-Question B1 – B3: Awareness Creation (AC)**

The result shows that the KMO measure of sampling adequacy was .621, which is greater than the recommended threshold of 0.5, and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the

three items dealing with the awareness creation construct, showing the appropriateness of the factor analysis.

Table 6.33: Factor Analysis Result

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
AC	B1	.573	.747	2.004	54.65
	B2	.969			
	B3	.610			

Source: Field Data (2020).

The result from the factor analysis shows a confirmation of the uni-dimensionality of the awareness creation construct based on the identified factor (single or only one factor) using the eigenvalue criterion (eigenvalue > 1); the factor also explains 54.65% of the variance. Further, based on Cronbach's alpha, the internal consistency (reliability) for the awareness creation construct was .747, which is satisfactory. Additionally, the factor-based variable was calculated as the mean of the items included in the factor. The factor loadings are shown in the Table.

- **Question B4 – B6: Traffic Communication (TC)**

The descriptive statistics results regarding traffic communication are presented in the Table below. The Table contains the Mean, Standard Deviation and sample size.

Table 6.34: Descriptive Statistics

Item	Mean	Std. Deviation	N
B4: I know the existence of traffic safety communication in telecommunication operations	2.7258	1.33048	299
B5: I understand the operations of traffic safety communication in telecommunication operations	2.7458	1.23794	299
B6: I understand that traffic safety communication was developed to enhance healthy relationships and mitigate risks encountered by consumers within the telecommunication industry	2.7625	1.32369	299
Overall Mean	2.74		

Source: Field Data (2020).

In order to ascertain knowledge of traffic communication as a vital communication strategy from key customers within the telecommunication industry of Ghana, three items were presented to selected customers. From the result, it is clear that the overall mean is 2.74. The result clearly shows that customers of the telecommunication industry of Ghana tend not to agree that they understand the operations of traffic safety communication and that the traffic safety communication was developed to enhance healthy relationships and mitigate risks encountered by consumers.

- **Exploratory Factor Analysis-Question B4 – B6: Traffic Communication (TC)**

The result shows that the KMO measure of sampling adequacy was .660, which is greater than the recommended threshold of 0.5, and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the traffic communication construct, showing the appropriateness of the factor analysis.

Table 6.35: Factor Analysis Result

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
TC	B4	.554	.754	2.020	52.73
	B5	.778			
	B6	.818			

Source: Field Data (2020).

The result from the factor analysis shows a confirmation of the uni-dimensionality of the traffic communication construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 52.73% of the variance. Further, based on Cronbach's alpha, the internal consistency (reliability) for the traffic communication construct was .754, which is satisfactory. Additionally, the factor-based variable was calculated as the mean of the items included in the factor. The factor loadings are shown in the Table.

- **Question B7 – B9: Relevant Operational Information (ROI)**

The descriptive statistics results regarding Relevant Operational Information (ROI) are presented in the Table below. The Table contains the Mean, Standard Deviation and sample size.

Table 6.36: Descriptive Statistics

Items	Mean	Std. Deviation	N
B7: I believe telecom operators deliver operational information to all consumers at the right time	2.8255	1.31416	298
B8: I believe information flow from telecom operators through the NCA is gender-sensitive and culturally-appropriate	2.8658	1.13504	298
B9: I believe there is always a regular two-way flow of information among stakeholders within the telecommunication industry of Ghana	2.8826	1.19044	298
Overall Mean	2.85		

Source: Field Data (2020).

In order to ascertain knowledge of relevant operational information (ROI) as a vital communication strategy from key customers within the telecommunication industry of Ghana, three items were presented to selected customers. From the result, it is clear that the overall mean is 2.85. The result clearly shows that customers of the telecommunication industry of Ghana tend not to believe that information flow from telecommunication operators through the NCA is gender-sensitive and culturally appropriate and that there is always a regular two-way flow of information among stakeholders within the telecommunication industry of Ghana.

- **Exploratory Factor Analysis - Question B7 – B9: Relevant Operational Information (ROI)**

The result shows that the KMO measure of sampling adequacy was .573, which is greater than the recommended threshold of 0.5; and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the relevant operational information (ROI) construct, showing the appropriateness of the factor analysis.

Table 6.37: Factor Analysis Results

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
ROI	B7	.324	.428	1.413	22.28
	B8	.596			
	B9	.456			

Source: Field Data (2020).

The result from the factor analysis shows a confirmation of the uni-dimensionality of the relevant operational information (ROI) construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also only explains 22.28% of the variance. The factor loadings are shown in the Table above. Further, based on Cronbach's alpha, the internal consistency (reliability) for the relevant operational information (ROI) construct was .428. Comparatively, the ascertained value is below the recommended value of 0.7, which shows an

unacceptable level of reliability. The results thus indicate that this factor is too weak and will not be used in subsequent analysis.

- **Question B10 – B12: Implementation and Monitoring (IM)**

The descriptive statistics results regarding communication strategy such as Implementation and Monitoring (IM) is presented in the Table below. The Table contains the Mean, Standard Deviation and sample size.

Table 6.38: Descriptive Statistics

Item	Mean	Std. Deviation	Analysis N
B10: I believe the NCA is responsible for the implementation and monitoring of stakeholder (telecom operators) communication	3.1367	1.26358	300
B11: I believe the NCA ensures proper information dissemination among stakeholders	2.8300	1.19968	300
B12: I believe there exists regular contact with all interested stakeholders by NCA within the telecommunication industry of Ghana	2.8533	1.23704	300
Overall Mean	2.94		

Source: Field Data (2020).

In order to ascertain knowledge on implementation and monitoring as a vital communication strategy from key customers within the telecommunication industry of Ghana, three items were presented to selected customers. From the result, it is clear that the overall mean is 2.94. The result clearly shows that customers of the telecommunication industry of Ghana tend to slightly disagree that the NCA is responsible for the implementation and monitoring of stakeholder (telecommunication operators) communication.

- **Exploratory Factor Analysis - Question B10 – B12: Implementation and Monitoring (IM)**

The result shows that the KMO measure of sampling adequacy was .673, which is greater than the recommended threshold of 0.5; and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the implementation and monitoring construct, showing the appropriateness of the factor analysis.

Table 6.39: Factor Loading Results

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
I/M	B10	.616	.706	1.891	44.73
	B11	.708			
	B12	.678			

Source: Field Data (2020).

The result from the factor analysis shows a confirmation of the uni-dimensionality of the implementation and monitoring construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 44.72% of the variance. Further, based on Cronbach's alpha, the internal consistency (reliability) for the implementation and monitoring (I/M) construct was .706. Comparatively, the ascertained value is above the recommended value of 0.7 and was considered satisfactory. Additionally, the factor-based variable was calculated as the mean value of the items included in the factor. The factor loadings are shown in the Table.

- **Question B13 – B15: Appropriate Feedback (AF)**

The descriptive statistics results regarding communication strategy such as Appropriate Feedback (AF) is presented in the Table below. The Table contains the Mean, Standard Deviation and sample size.

Table 6.40: Descriptive Statistics

Items	Mean	Std. Deviation	N
B13: I know the required channels through which consumers can provide feedback on issues previously communicated by telecom operators	2.7033	1.31189	300
B14: I am aware of regular meetings among stakeholders, which ensure that sufficient feedback is provided	2.5000	1.12883	300
B15: I believe NCA provides accurate feedback promptly to all interested stakeholders	2.4533	1.22454	300
Overall Mean	2.55		

Source: Field Data (2020).

In order to ascertain knowledge of appropriate feedback as a vital communication strategy from key customers within the telecommunication industry of Ghana, three items were presented to selected customers. From the result, it is clear that the overall mean is 2.55.

The result clearly shows that customers of the telecommunication industry of Ghana require channels through which consumers can provide feedback on issues previously communicated by telecommunication operators as they tend to disagree with the statements.

- **Exploratory Factor Analysis - Question B13 – B15: Appropriate Feedback (AF)**

The result shows that the KMO measure of sampling adequacy was .660, which is greater than the recommended threshold of 0.5; Bartlett's Test of Sphericity was significant ($p < 0.000$) for the three items dealing with the appropriate feedback construct, showing the appropriateness of the factor analysis.

Table 6.41: Factor Analysis Results

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
AF	B13	.554	.717	1.932	47.76
	B14	.779			
	B15	.721			

Source: Field Data (2020).

The result from the factor analysis shows a confirmation of the uni-dimensionality of the appropriate feedback construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 47.76% of the variance. Further, based on Cronbach's alpha, the internal consistency (reliability) for the appropriate feedback construct was .717. Comparatively, the ascertained value is above the recommended value of 0.7 and was considered satisfactory. Additionally, the factor-based variable was calculated as the mean value of the items included in the factor. The factor loadings are shown in the Table.

- **Question B16 – B18: Regular Consultations (RC)**

The descriptive statistics results regarding communication strategy such as Regulation Consultations (RC) is presented in the Table below. The Table contains the Mean, Standard Deviation and sample size.

Table 6.42: Descriptive Statistics

Item	Mean	Std. Deviation	N
B16: I believe stakeholders(consumers) are consulted regularly by the telecommunication regulator (NCA)	2.5900	1.12819	300
B17: I believe consumer engagement occurs timely and regularly	2.6767	1.24255	300
B18: I believe consumers are part of all major decisions that are taken within the telecommunication industry of Ghana	2.6400	1.27900	300
Overall Mean	2.63		

Source: Field Data (2020).

In order to ascertain knowledge of regulation consultations (RC) as a vital communication strategy from key customers within the telecommunication industry of Ghana, three items were presented to selected customers. From the result, it is clear that the overall mean is 2.63.

The result clearly shows that customers of the telecommunication industry of Ghana tend not to agree that consumer engagement occurs timely and regularly, and consumers are part of all major decisions that are taken within the telecommunication industry.

- **Exploratory Factor Analysis - Question B16 – B18: Regular Consultations (RC)**

The result shows that the KMO measure of sampling adequacy was .673, which is greater than the recommended threshold of 0.5, and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the regulation consultations construct, showing the appropriateness of the factor analysis.

Table 6.43: Factor Analysis Results

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
RC	B16	.596	.772	2.062	54.39
	B17	.837			
	B18	.760			

Source: Field Data (2020).

The result from the factor analysis shows a confirmation of the uni-dimensionality of the regulation consultations construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 54.39% of the variance. Further, based on Cronbach's alpha, the internal consistency (reliability) for the regulation consultations construct was .772 and was considered satisfactory. Additionally, the factor-based variable was calculated as the mean value of the items included in the factor. The factor loadings are shown in the Table.

- **Question B19 – B21: Use of Public Information Systems (PIS)**

The descriptive statistics results regarding communication strategy such as public information system (PIS) is presented in the Table below. The Table contains the Mean, Standard Deviation and sample size.

Table 6.44: Descriptive Statistics

Item	Mean	Std. Deviation	N
B19: I believe regular publications on industrial progress are made by the NCA using the most appropriate communication channels	2.7067	1.15979	300
B20: I believe the traditional media is the major public information system used by the NCA	3.0733	1.31671	300
B21: I believe the NCA often develops key information materials for distinct stakeholder groups	2.7133	1.16720	300
Overall Mean	2.83		

Source: Field Data (2020).

In order to ascertain knowledge of the public information system (PIS) as a vital communication strategy from key customers within the telecommunication industry of Ghana, three items were presented to selected customers. From the result, it is clear that the overall mean is 2.83. The result clearly shows that customers of the telecommunication industry of Ghana tend not to agree that the traditional media is the major public information system used by the NCA.

- **Exploratory Factor Analysis - Question B19 – B21: Use of Public Information Systems (PIS)**

The result shows that the KMO measure of sampling adequacy was .645, which is greater than the recommended threshold of 0.5; and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with the public information system (PIS) construct, showing the appropriateness of the factor analysis.

Table 6.45: Factor Analysis Results

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
PIS	B19	.574	.664	1.795	40.85
	B20	.760			
	B21	-			

Source: Field Data (2020).

The result from the factor analysis shows a confirmation of the uni-dimensionality of the public information system (PIS) construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 40.84% of the variance. Further, based on Cronbach's alpha, the internal consistency (reliability) for the public information system (PIS) construct was .664. Comparatively, the ascertained value is below the recommended value of 0.7 but higher than the threshold of 0.6 recommended by Hair *et al.* (2010) for exploratory research and will, therefore, be considered acceptable. Additionally, the factor-based variable was calculated as the mean value of the items included in the factor. The factor loadings are shown in the Table.

- **Question B22– B24: Promotion of Stakeholder Alignment (PSA)**

The descriptive statistics results regarding communication strategies such as Promotion of Stakeholder Alignment (PSA) are presented in the Table below. The Table contains the Mean, Standard Deviation and Analysis of N.

Table 6.46: Descriptive Statistics

Item	Mean	Std. Deviation	N
B22: I am aligned with the operational activities of the telecom operators of Ghana	2.4167	1.21159	300
B23: My expectations are managed effectively by telecom operators through the NCA	2.4767	1.20317	300
B24: I believe my interest is aligned with the objectives of the telecom operator through the NCA	2.6267	1.19948	300
Overall Mean	2.51		

Source: Field Data (2020).

In order to ascertain knowledge of the Promotion of Stakeholder Alignment (PSA) as a vital communication strategy from key customers within the telecommunication industry of Ghana, three items were presented to selected customers. From the result, it is clear that the overall mean is 2.51. The result clearly shows that customers tend to disagree with the objectives of the telecom operator through the NCA.

- **Exploratory Factor Analysis - Question B22– B24: Promotion of Stakeholder Alignment (PSA)**

The result shows that the KMO measure of sampling adequacy was .694, which is greater than the recommended threshold of 0.5; and Bartlett's Test of Sphericity was significant ($p < 0.001$) for the three items dealing with Promotion of Stakeholder Alignment (PSA) construct, showing the appropriateness of the factor analysis.

Table 6.47: Factor Analysis Results

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
PSA	B20	.777	.804	2.158	58.69
	B21	-			
	B24	.849			

Source: Field Data (2020).

The result from the factor analysis shows a confirmation of the uni-dimensionality of the Promotion of Stakeholder Alignment (PSA) construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 58.69% of the variance. Further, based on Cronbach's alpha, the internal consistency (reliability) for the Promotion of Stakeholder Alignment (PSA) construct was .804. Comparatively, the ascertained value is above the recommended value of 0.7, which is satisfactory. Additionally, the factor-based variable was calculated as the mean value of the items included in the factor.

The factor loadings are shown in the Table.

Based on this, the general descriptive statistics for the dominant communication strategy from the perspective of customers, as represented by the factors identified, are presented in the Table below.

Table 6.48: Overall Descriptive Statistics Result (Communication Strategy-Customers)

PSA		AC	TC	I/M	AF	RC	PIS	PSA
N	Valid	300	299	300	300	300	300	300
	Missing	0	1	0	0	0	0	0
Mean		2.4744	2.7447	2.9400	2.5522	2.6356	2.8311	2.5067
Median		2.3333	3.0000	3.0000	2.3333	2.6667	3.0000	2.6667
Std. Deviation		1.00042	1.06248	.97883	.97795	1.00969	0.94103	1.02130
Skewness		.182	-.047	-.148	.461	.316	-.044	.195
Kurtosis		-.770	-.759	-.600	.017	-.281	-.522	-.613
Minimum		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Maximum		5.00	5.00	5.00	5.00	5.00	5.00	5.00

Source: Field Data (2020).

From the result, it is clear that the greatest mean was ascertained by implementation and monitoring (I/M) (M= 2.9400), followed by public information systems (PIS) (M =2.8311), next was traffic communication (TC) (M= 2.7447), then regulation consultations (RC) (M=2.6356). The skewness and kurtosis values ranged between -2 and +2, and thus these variables can be assumed to be normally distributed. The least represented is awareness creation (AC) (M=2.4744).

Correlation Results

The correlation concerning the seven identified variables was examined. The Pearson-correlation value indicates the strength and direction of the relationship between each pair of factors. The Pearson-correlation results are presented below.

Table 6.49: Correlation Matrix Result

		AC	TC	IMM	AF	RC	PIS	PSA
AC	Pearson Correlation	1						
TC	Pearson Correlation	.354**	1					
IMM	Pearson Correlation	.339**	.278**	1				
AF	Pearson Correlation	.292**	.393**	.359**	1			
RC	Pearson Correlation	.180**	.356**	.270**	.622**	1		
PIS	Pearson Correlation	.289**	.229**	.469**	.456**	.668**	1	
PSA	Pearson Correlation	.227**	.456**	.286**	.562**	.489**	.292**	1

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

Source: Field Data (2020).

The result shows that awareness creation has a positive and moderate statistically significant relationship with traffic communication and implementation and monitoring (.354 and .339, respectively) and has a small positive statistically significant relationship with AF, RC, PIS and PSA with the correlation coefficient ranging between .180 and .292 ($p < 0.01$).

The result also shows that traffic communication has a positive and moderate statistically significant relationship with appropriate feedback (AF), regular consultation (RC) and PSA (.393, .356 and .456, respectively) and has a small positive statistically significant relationship with IMM and PIS with the correlation coefficient being .278 and .229 ($p < 0.01$) respectively.

The result, furthermore, shows that implementation and monitoring (IMM) has a positive and moderate statistically significant relationship with appropriate feedback (AF) and PIS (.359 and .469 respectively) and has a small positive statistically significant relationship with RC and PSA with the correlation coefficient being .270 and .286 ($p < 0.01$) respectively. There are positive, statistically significant correlations between appropriate feedback and regular consultation (strong), PIS (moderate) and PSA (strong) (all p values < 0.01).

There are positive, strong and moderate statistically significant correlations between RC with PIS and PSA, respectively, as well as a weak positive correlation between PIS and PSA (all p values < 0.01).

6.4.2 Communication challenges facing consumers

The seventh secondary research objective of the study is to identify the communication challenges facing consumers in the Ghanaian telecommunications industry. This objective was achieved by adopting diverse tools, including descriptive statistics, factor analysis and inferential statistics.

6.4.2.1 Descriptive Statistics (Question: D1 – D10)

The descriptive statistics results regarding communication challenges are presented in the Table below. The Table contains the Mean, Standard Deviation and Analysis of N.

Table 6.50: Descriptive Statistics

	Mean	Std. Deviation	N
D1: I face resistance in sharing information with service providers	2.9467	1.24727	300
D2: I have difficulty realising my new roles as a consumer in the evolving telecommunication industry	3.0200	1.24971	300
D3: I sometimes misdefine my real needs and interests during communication with service providers or other stakeholders	3.0700	1.19856	300
D4: It is difficult working with different telecom operators with different views	2.9267	1.24087	300
D5: I have a problem with the use of some modern communication channels, for example, social media, emails, et cetera	2.6467	1.29127	300
D6: Providing feedback to the telecom operators is sometimes difficult for me due to work schedules and pressure	2.8167	1.28396	300
D7: Lack of resources in ensuring effective communication also restrain me from providing feedback on time	3.1133	1.33908	300
D8: I believe telecom providers through NCA are unable to provide information on a regular and timely basis, and that is a challenge for me	3.4033	1.36878	300
D9: Telecom providers through NCA have difficulty in managing the diverse expectations of consumers	3.2367	1.32154	300
D10: I have a problem concerning the use of the most suitable communication channel when dealing with other stakeholders (especially telecom operators)	3.1167	1.17800	300
Overall Mean	3.02		

Source: Field Data (2020).

From the customer result, the overall mean was found to be 3.02. It shows that consumers/customers of telecommunication companies face many challenges when managing stakeholder interest within the telecommunication industry of Ghana. A high percentage of neutral ratings were observed across all questions (between 19% and 34%), with six of the challenges displaying a higher percentage of agreed and strongly agreed than the disagreed and strongly disagreed (D2, D3, D7, D8, D9, D10).

- **Exploratory Factor Analysis - Question D1– D10: Communication Challenges (CC)**

The result shows that the KMO measure of sampling adequacy was .702, which is greater than the recommended threshold of 0.5; Bartlett's Test of Sphericity was significant ($p < 0.000$) for the ten items dealing with the communication challenges construct, showing the appropriateness of the factor analysis.

Table 6.51: Factor Analysis Results of Communication Challenges (CC)

Construct	Items	Factor 1 Loading	Factor 2	Factor 3	Cronbach's alpha	Eigenvalues	Variance (%)
CC	D1		.318		.689	2.929	40.892
	D2		.686			1.593	
	D3		.743			1.085	
	D4		.409		.574		
	D5			.675			
	D6			.633			
	D7			.387			
	D8		.971			.739	
	D9		..577				
	D10		-				

Source: Field Data (2020).

The result from the factor analysis shows that three factors were identified for the communication challenges construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 23.88%; 11.93%, and 5.06%, thus 40.87% of the total variance. Item d10 did not load onto a factor as its factor loading was less than 0.3. The factor loadings are shown in the Table. Further, based on Cronbach's alpha, the internal consistency (reliability) for the communication challenges construct were .739, .574 and .689. Two factors (factor 1 and factor 2) had acceptable CA values above the 0.6 thresholds for exploratory research. However, factor 3 had a value below 0.6. Studying the CA values when one of the items is deleted, it became apparent that we can use items 5 and 6, which improves the CA value to 0.612. Moreover, the three factor-based variables were consequently calculated as the mean value of the items included in the factor.

6.4.3 Communication interests of consumers/customers

The sixth secondary research objective is to examine the communication interests of consumers in the Ghanaian telecommunication industry. The analysis covered frequencies ranked order and descriptive statistics results.

- **Awareness of Communication interests**

The study examined the awareness level of customers/customers within the telecommunication industry on communication interests. The result is shown in the Table below.

Table 6.52: Awareness of Stakeholder Communication Interests

Indicator	Customers / Consumers	
	Yes (%)	No (%)
Awareness of Stakeholder Communication interests	38 (12.7)	262(87.3)

Source: Field Data (2020).

The result shows the awareness of stakeholders' communication interests within Ghana's telecommunication industry. The consumer/customer result shows that out of the 300 respondents,

262 (87.3%) are unaware of stakeholders within the telecommunication industry of Ghana, whilst 38 (12.7%) are aware of stakeholder communication interests within the telecommunication industry. Further, among the few who showed their awareness level, significant communication interests included: quality customer care, feedback on information, quality service, improved network service, signal/network problems, charges on calls, affordable tariffs, spectrum auction, measures and channels for complaints, wider coverage, affordable prices, consumer protection, regular information sharing, un-dropped calls, data charges issues, call enhancement, uninterrupted calls, deducted airtime, mobile communication, mobile apps, government taxes, internet issues, prompt response and internet access.

- **Communication interest management**

The study also examined the communication interest management of customers/consumers of telecommunication companies. The result is shown in the Table below.

Table 6.53: Communication Interest management

Indicator	Customers/Consumers	
	Yes (%)	No (%)
Communication interest Management	12 (4.0)	288(96.0)
Total Response		300

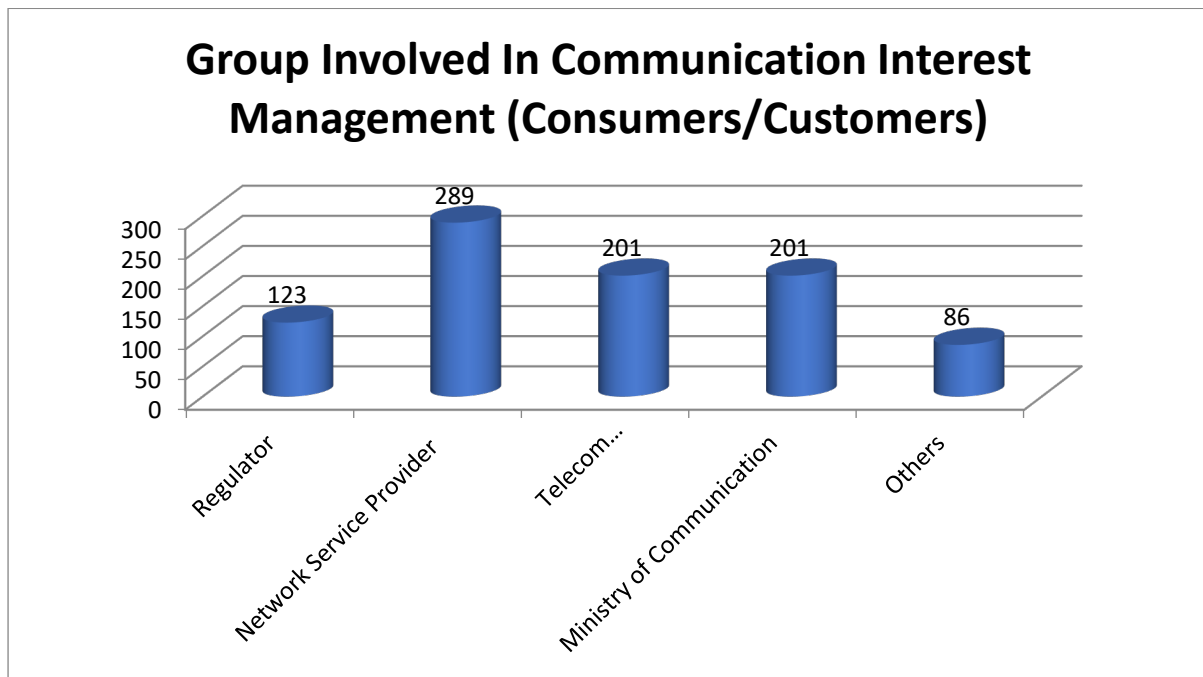
Source: Field Data (2020).

Generally, communication interest management from the perspective of customers/consumers within the telecommunications industry is highly problematic. Table 6.53 shows the result of the management of stakeholders' communication interests with Ghana's telecommunications industry. The result shows that consumers 288 (96.0%) indicated No to effective management of their communication interests, whilst only 12 (4.0%) indicated it is being managed effectively.

Therefore, it requires effective communication interest management techniques to curtail such challenges. Given this, a high number of respondents indicated that how their communication interests as consumers can be managed include the quality provision of service, stable and better

networks, constant engagement, effective communication channels, provision of up-to-date information regularly, common platform for consumers and operators, improved network coverage and prioritisation of consumer needs. According to telecommunication consumers, these indications have the propensity to influence and ensure effective management of the communication interests of stakeholders within the telecommunications industry of Ghana.

Figure 6.2: Group Involved in Communication Interest Management



Source: Field Data (2020).

The consumer result shows that the dominant group involved in communication interest management is the network service provider (289, 96.3%), followed by the telecommunication subscribers/consumers (201, 67.0%) and the ministry of communication (201, 67%), next was the regulator (123, 41.0%). The least ranked were others (Environmental Protection Agency, Academia, Telecom Chamber, among others) (86, 28.7%). Despite the network service provider ranked as dominant by consumers, the high percentages of the other groups show that diverse groups are involved in the effective management of stakeholder interest within the telecommunication industry of Ghana.

Table 6.54: Communication Interest Management by those responsible

Indicator	Customers/Consumers	
	Yes (%)	No (%)
Communication interests Management	21 (7.0)	279 (93.0)
Total Response		300

Source: Field Data (2020).

Generally, communication interest management amongst authorised institutions within the telecommunication industry is highly problematic because those institutions or agencies responsible have not taken a keen interest in ensuring effective management of stakeholder communication interests within the telecommunication industry of Ghana. The Table above shows the result of the management of communication interests of stakeholders by those agencies or institutions responsible. The result shows that consumers 279 (93.0%) indicated No effective management of their communication interests by agencies or institutions responsible, whilst 21 (7.0%) admitted that it is being managed effectively by those agencies or institutions responsible.

Table 6.55 Communication Interest Management Challenges

Consumer/Customers		
Challenges	Ranked	Percent (%)
Interruptions / Transmission break	2 nd	61.0
Poor quality service	1 st	65.0
Unstable Network	1 st	65.0
Poor response/ feedback	3 rd	54.0
High service cost	4 th	44.0
Poor customer service	4 th	44.0
No policy information	7 th	16.0
Poor communication	5 th	38.0
Poor monitoring	6 th	25.0

Source: Field Data (2020).

The study investigated what challenges evolved from the management of communication interests by agencies or institutions responsible within the telecommunication industry of Ghana. From the customer/consumer perspective, the result shows that the most dominant management of communication interests challenge was poor quality service and unstable network issues, ranked first, followed by interruptions or transmission breaks (2nd rank), poor response or feedback (3rd rank). High service cost and poor customer service ranked 4th, poor communication ranked fifth, and poor monitoring ranked sixth. The result suggests that diverse challenges affect the crucial operation of the management of communication interests within the telecommunication industry of Ghana.

6.4.4 Improving communication: consumers/customers' perspective

The eighth secondary research objective is to explore ways to improve communication with consumers in the Ghanaian telecommunication industry. In order to achieve this objective, the study employed descriptive statistics and factor analysis, among others. The result is presented as follows:

6.4.4.1 Descriptive Statistics (Question: E1 – E11)

The descriptive statistics results regarding improving communication are presented in the Table below. The Table contains the Mean, Standard Deviation and Analysis of N.

Table 6.56: Descriptive Statistics

Items	Mean	Std. Deviation	Analysis N
E1: The continuous engagement of all stakeholders	3.5733	1.30779	300
E2: Clear definition of stakeholder needs and expectations	3.8133	1.14142	300
E3: The development and implementation of a stakeholder communication plan should be the way forward	3.8067	1.18065	300
E4: The encouragement of regular feedback among stakeholders	3.9500	1.12177	300
E5: Properly defined communication channels for all stakeholders	3.8733	1.14382	300
E6: Regular interaction to improve stakeholder relationships is very important	3.9833	1.11978	300
E7: Determining appropriate institutional options for stakeholder engagement	3.8867	1.12459	300
E8: Building stakeholder consensus using regular involvement in decision making	3.7067	1.32658	300
E9: The development of an effective two-way communication process by the NCA	3.6767	1.21809	300
E10: The promotion of stakeholder ownership regarding decisions taken	3.8100	1.13940	300
E11: Regular systems to monitor and evaluate stakeholder interest	3.8767	1.29372	300
Overall Mean	3.81		

Source: Field Data (2020).

The Table above shows the result of improving communication issues within the telecommunication industry of Ghana from the perspective of consumers/customers of telecommunication companies. The results show that consumers in the industry are aware of the various means to improve communication. The overall mean score was 3.81. The result shows that

customers tend to agree regarding all these improving mechanisms. The result shows that consumers agree that it is important to improve communication. The results show that regular interaction with stakeholders is very important to improving communication in the telecommunications industry.

- **Exploratory Factor Analysis - Question E1– E11: Improving Communication (IC)**

The result shows that the KMO measure of sampling adequacy was .948, which is greater than the recommended threshold of 0.5; and Bartlett's Test of Sphericity was significant ($p < 0.000$) for the eleven items dealing with improving the communication challenges construct, showing the appropriateness of the factor analysis.

Table 6.57: Factor Analysis Results - Improving Communication

Construct	Items	Factor Loading	Cronbach's alpha	Eigenvalues	Variance (%)
IC	E1	.813	.949	7.319	63.247
	E2	.830			
	E3	.769			
	E4	.841			
	E5	.826			
	E6	.742			
	E7	.763			
	E8	.840			
	E9	.819			
	E10	.752			
	E11	.741			

Source: Field Data (2020).

The result from the factor analysis shows a confirmation of the uni-dimensionality of the improving communication challenges construct based on the identified factor (single or only one factor) on the eigenvalue criterion (eigenvalue > 1); the factor also explains 63.25% of the variance. Further,

based on Cronbach's alpha, the internal consistency (reliability) for the improving communication challenges construct was .949. Comparatively, the ascertained value is above the recommended value of 0.7 and was thus satisfactory. Moreover, the factor-based variable was calculated as the mean value of the items included in the factor. The factor loadings are shown in the Table.

On the basis of the exploratory factor analysis for section D and E, this, the general descriptive statistics for the newly identified factors, are shown in the Table below.

Table 6.58: Overall Descriptive Statistics Result (Communication Challenges and Improving Communications)

	NCA regulator challenges	Personal stakeholder challenges	Electronic communication and work challenges	Improved communication
Mean	2,9883	2,7317	3,3200	3,8142
Median	3,0000	3,0000	3,0000	4,0000
Std. Deviation	0,88788	1,09292	1,19821	0,97253
Skewness	0,260	0,115	-0,139	-0,700
Kurtosis	-0,129	-0,743	-0,949	0,001
Minimum	1,00	1,00	1,00	1,00
Maximum	5,00	5,00	5,00	5,00

Source: Field Data (2020).

From the result, it is clear that the greatest mean was ascertained for the improvement mechanisms ($M = 3.81$). The lowest mean value was observed for personal stakeholder challenges (factor D2). The skewness and kurtosis values for all 7 factors ranged between -2 and +2, and thus these variables can be assumed to be normally distributed. The Pearson correlation values are shown in Table 6.59.

Table 6.59: Pearson correlation values

		NCA regulator challenges	Personal stakeholder challenges	Electronic communication and work challenges	Improved communication
FactorD1	Pearson Correlation	1			
FactorD2	Pearson Correlation	.410**	1		
FactorD3	Pearson Correlation	.240**	0,051	1	
FactorE	Pearson Correlation	.208**	0,013	.584**	1

Source: Field Data (2020).

The result shows that NCA regulator challenges (factor D1) has a positive and moderate statistical significant relationship with personal stakeholder challenges (factor D2) (.410) and has a small positive statistical significant relationship with electronic communication and work challenges (factor D3) and improved communication (factor E) with the correlation coefficient being .240 and .208 respectively ($p < 0.01$). Personal stakeholder challenges (Factor D2) had no statistical significant relationship ($p > 0.05$) with electronic communication and work challenges (factor D3) or improved communication (factor E). Electronic communication and work challenges (Factor D3) had a strong positive relationship with improved communication (factor E) (.584, $p < 0.01$)

In order to test the relevant hypotheses, a structural equation model was conceptualized and tested.

- **Inferential Analysis – Structural Equation Modelling**

The last step of the analysis process is to execute the inferential analysis using structural equation modelling. It is vital to expound that Structural Equation Modelling (SEM) is a multivariate statistical analysis technique used to analyse structural relationships. This analytical model combines factor analysis and multiple regression analysis and is employed to analyse the structural relationship between latent constructs and the measured variables (indicators) and latent constructs. The study employed this method because it provides the basis for estimating multiple and interrelated dependence in a single analysis. SEM is commonly justified in the social sciences

because of its ability to impute relationships between unobserved constructs (latent variables) from observable variables. The sample is large enough for the model as, using Boomsma's (1982) formula, the ratio of indicators to latent variables is 3.64. Thereby a sample of 300 is considered more than adequate. In light of this study, one structural equation model was employed to test the fit of the study model. It was employed to determine if the hypotheses based on the relationships between the latent constructs can be supported or not. The result is shown below.

- **Model 1**

The first model conceptualisation is the overall model of the study. It covered the baseline analysis of the author's construction as presented in the literature review section of the study. The whole study model was tested using the SEM. The adequacy and satisfactory nature of the model were assessed through the use of goodness-of-fit measures for the overall structural model, including Comparative Fit Index (CFI), Incremental Fit Index (IFI) and Tucker Lewis Index (TLI), where larger values mean better fit (> 0.9 means satisfactory fit). Additionally, a root means a square error of approximation (RMSEA) was also done (< 0.08 acceptable fit/ < 0.05 good fit). The model and result are presented as follows.

Figure 6.3: Conceptualisation of the Overall Model of the Study

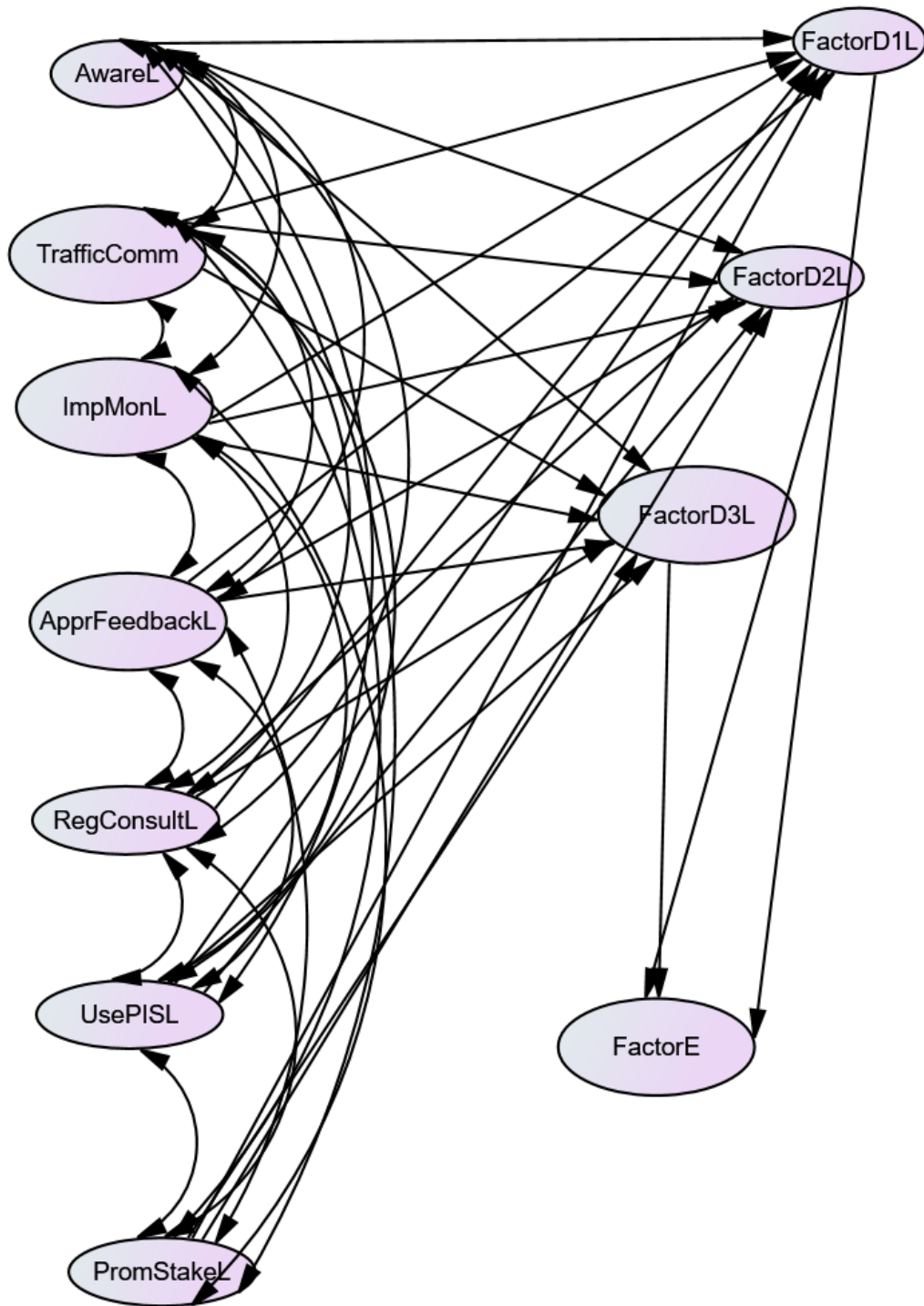


Table 6.60: Descriptive statistics on the Model of Fitness (SEM)

Fitness Indicators	Values
Comparative Fit Index (CFI)	,836
Incremental Fit Index (IFI)	,838
Tucker Lewis Index (TLI)	,814
Root mean square error of approximation (RMSEA)	,072
Normed chi-square	2.543

Source: Field Data (2020).

The values in the table above show that the model fitness indicators such as CFI, IFI and TLI were below 0.9, indicating a potential inadequate fit for the model. However, the RMSEA value was less than .8, which shows an acceptable fitness of the model. Various authors, however, have indicated that a value above 0.8 for CFI, TLI and IFI is permissible for structural equation models (Hu & Bentler, 1999:4; Wisting *et al.*, 2019: 3). Inconsistent fit indices are common in applications of SEM and are not diagnostic of problems in the model specification or data (Lai & Green, 2016:233). The normed chi-square value indicated adequate fit as 2.543 was smaller than the threshold value of 3. The standardised weights of the structural paths had weights larger than 1. It is not wrong and can result from multicollinearity (Deegan, 1978). Inspection of the correlation values could not detect multicollinearity.

The results of the standardised weights and their associated statistical significance are given in the Table below. It is the first step in exploring the nature of the relationship between the identified constructs in the study context.

Table 6.61: Standardised regression weights and associated statistical significance

	Estimate
FactorD1L <--- AwareL	2,055
FactorD2L <--- AwareL	1,923
FactorD3L <--- AwareL	,925
FactorD1L <--- TrafficComm	-3,235
FactorD2L <--- TrafficComm	-2,859
FactorD3L <--- TrafficComm	-1,376
FactorD1L <--- ImpMonL	9,210

	Estimate
FactorD2L <--- ImpMonL	7,700
FactorD3L <--- ImpMonL	4,318
FactorD1L <--- ApprFeedbackL	-3,914
FactorD2L <--- ApprFeedbackL	-3,862
FactorD3L <--- ApprFeedbackL	-2,032
FactorD1L <--- RegConsultL	10,208
FactorD2L <--- RegConsultL	8,892
FactorD3L <--- RegConsultL	4,541
FactorD1L <--- UsePISL	-11,296
FactorD2L <--- UsePISL	-9,928
FactorD3L <--- PromStakeL	-,827
FactorD3L <--- UsePISL	-4,586
FactorD1L <--- PromStakeL	-1,388
FactorD2L <--- PromStakeL	-,581
SecE <--- FactorD3L	,707***
SecE <--- FactorD2L	-,163*
SecE <--- FactorD1L	,128

Source: Field Data (2020).

Only two relationships were found to be statistically significant, namely a positive and strong relationship between electronic communication and work challenges (factor D3) and improved communication (factor E) ($p < 0.001$) and between personal stakeholder relationships (factor D2) and improved communication (factor E) (negative and weak relationship at the 10% level of significance). No statistically significant relationships were found between the level of strategies employed and the challenges perceived. Further research is required to confirm/not confirm the exploratory findings of the SEM model presented in this study. In summary: Hypotheses 23 and 24 were supported, while Hypotheses 1 to 22 were not supported.

Note: The model displayed standardized weights larger than one that is normally caused by multicollinearity. However, it was commented on.

6.5 CONCLUSION

This chapter of the study presented quantitative and qualitative data results. Concerning the quantitative data-study objectives, the analysis was carried out using descriptive statistics and

exploratory factor analysis, coupled with inferential statistics such as correlation and regression tools. Descriptive statistics were employed to describe and present fundamental characteristics of the research data, briefly summarising the sample and the adopted measures. Further, concerning the qualitative data, research questions were addressed using content and thematic analysis. The overall discovery shows the importance of communication interests management amongst telecommunications stakeholders and customers in Ghana.

CHAPTER SEVEN

FINDINGS AND RECOMMENDATIONS

7.1 INTRODUCTION

The main headings under this Chapter include the research questions and objectives, the study's contribution to theory and literature, recommendations, policy direction and limitations of the study, suggestions for further research and conclusions of the study. The Chapter highlights the research problem to serve as a reminder for the reader. The telecommunications industry provides significant benefits for individuals, groups, organisations, society, and the country. The realisation of these industry benefits is made possible through the combined efforts of all stakeholders in the Ghanaian telecommunications industry. Stakeholders can effectively support the industry's growth, which will, in turn, support the economic growth and transformation of the country's economy through effective communication. These stakeholders must regularly engage with each other and share vital information through communication. Communication in this century has become complex, and it requires a comprehensive understanding and appreciation of its constructs to achieve the objectives of the communication process effectively. Ghana's telecommunications industry does not have a comprehensive policy direction for its stakeholders to effectively communicate, causing industrial unrest among civil society organisations, communities and public institutions.

The overarching purpose of this study is to develop a strategic communication plan for managing communication interests among consumers and stakeholders in the Ghanaian telecommunications industry. The study set out to examine the various communication interests among stakeholders and consumers in the Ghanaian telecommunications industry and how these interests influence efficient and effective communication in the industry. The study, furthermore, seeks to identify and explain the communication interests of consumers and stakeholders in the Ghanaian telecommunications industry.

However, developing a strategic communication plan to manage communication interests among stakeholders requires an effective understanding of the consumers' and stakeholders' interests and needs, which have been determined using data collection instruments.

Based on the above, the study's main aim is further broken down into four. First, the study attempts to explain that efficient and effective management of communication interests requires using relevant communication strategies among stakeholders and consumers. Second, the study attempts to indicate that the proper means of managing the communication interests among stakeholders and consumers is highly dependent on the level of awareness of these communication interests among the stakeholders and consumers and how challenges impede the realisation of these communication interests. Third, the study attempts to posit that managing stakeholders' communication interests rely on the ability to effectively identify communication challenges and means of improving communication among stakeholders so that their communication interests can be met. Fourth, the study seeks to develop a framework for a strategic communication plan based on the analysis of empirical data from the field to improve the management of stakeholders' and consumers' communication interests.

7.2 RESEARCH QUESTIONS FOR STAKEHOLDERS: QUALITATIVE PHASE

Telecommunications stakeholders are very influential in promoting growth and development in the industry. The latter is noted to be a highly technologically driven industry with different impacts on government revenue, the environment and social protection. It has attracted many institutions to oversee and regulate different aspects of the operations of telecommunications service providers. The increase in the number of stakeholders in the telecommunications industry means that there are many institutions with varied communication management styles in the industry. Therefore, it is prudent to solicit the views and opinions of the stakeholders on communication management among stakeholders in the industry.

For this phase of the study, a primary research question was developed to seek answers from the stakeholders. The primary research question seeks to qualitatively explore effective means of managing stakeholder communication in the Ghanaian s industry. The study sought answers to the

research question by employing the theories used in the study. The study used the qualitative research approach and gathered qualitative data through interviews. The data were analysed using NVivo software.

The analysis revealed some key findings. One of the study's major findings is that the telecommunications industry contributes significantly to Ghana's economic growth and development. The study also determined good relationships among the telecommunications industry's stakeholders. The stakeholders use significant communication channels, including face-to-face dialogue, official letters, phone calls and email, the media (TV and radio), public lectures, consumer outreach programmes, public forums, seminars and workshops, and traditional media (community meetings). Major communication strategies employed by stakeholders in the telecommunications industry include: awareness creation, chamber dialogue, educational and information sharing, training and development, direct communication (public information systems), bilateral and multilateral involvement and engagement, consumer-level approach, promotion of stakeholder interest alignment, leadership engagement, regular consultations, and systems feedback.

The study's findings also indicate that the stakeholders' communication interests are diverse. It was determined that the communication interests of stakeholders are not effectively managed. The management of stakeholder communication interests is handled by the NCA, Ministry of Communications, Consumer Protection Agency, Telecommunication Chamber, and Consumer Advocacy Group. The study's findings also indicated that it is important for the stakeholders to ensure proper management of the communication interests. The study, furthermore, found that stakeholder communication in the telecommunications industry is faced with diverse challenges affecting effective communication in the industry. Many measures can be used to minimise the communication challenges and to improve the management of communication interests among stakeholders. These will be addressed in the answers to the secondary research questions below.

Secondary research question 1: Which stakeholder communication strategies exist in the Ghanaian telecommunications industry?

The telecommunications industry is expanding tremendously in Ghana. There are many players in the Ghanaian telecommunications industry calling for applying relevant strategies to improve the effectiveness of stakeholder communication. The call is based on the fact that communication is important in any industry, and the telecommunications industry in Ghana is no exception. Communication strategies are linguistic and non-linguistic strategies employed by communicators to compensate for insufficiency in their knowledge during communication. The key stakeholders in the Ghanaian telecommunications industry play an important role in promoting communication. Stakeholders in the industry need to ensure that relevant stakeholder communication strategies are identified and assessed. It, therefore, becomes important for stakeholders to identify their communication strategies in the telecommunications industry to enhance the communication process among stakeholders. Based on the above statements, the study asked and solicited answers from the stakeholders regarding the question: Which stakeholder communication strategies exist in the Ghanaian telecommunications industry?

The answer to this question was gathered through the application of theories reviewed in the study. The systems theory was used to reach out to a large section of stakeholders and supported the generation of comprehensive information on stakeholder communication in the industry. The study, furthermore, used the agenda setting theory to understand the various media platforms used by stakeholders to effectively communicate in the telecommunications industry, as well as the relevance of using the media to promote communication among stakeholders. The theory helped develop a comprehensive data collection instrument in line with how the media influence communication strategies among key stakeholders in Ghana. More specifically, the relevant section in the interview schedule included items on the topic: Your knowledge of communication strategies among stakeholders in the Ghanaian telecommunication industry. The agenda-setting theory, furthermore, provided an opportunity for the study to identify many communication strategies among stakeholders that can come up in the media space.

The stakeholder theory was used to answer the research question by evaluating the legitimacy, power, and influence of the stakeholders in the Ghanaian telecommunications industry and how they use their legitimacy, power, and influence to communicate with other stakeholders effectively. The stakeholder theory's application was instrumental in identifying the data collection and analysis methods. The use of the stakeholder theory enabled the study to understand how the key stakeholders' various powers, influences, and legitimacies impact the key stakeholders' communication strategies. The stakeholder theory assisted the study in fully identifying all relevant stakeholders in the telecommunications industry of Ghana to solicit data for analysis.

The specific aim of the study discussed in this section sought to examine the communication interests of stakeholders in the Ghanaian telecommunication industry. The second aim assessed by the study is the stakeholder communication interests. Every stakeholder in any industry has specific communication interests that must be identified and satisfied effectively. Key elements assessed include awareness of stakeholders' communication interests, communication interests management of stakeholders, groups involved in effective management of communication interests, and communication interests management challenges. A detailed discussion on the assessment of the communication interests of stakeholders is provided below. Stakeholders in the Ghanaian telecommunications industry can be grouped into major and minor stakeholders. The findings of the study indicate that the major stakeholders include the regulator, telecommunication companies or service providers, telecommunication chamber, ministry of communication, access operators, the consumer protection agency, broadcaster group and their chambers, among others. In contrast, the minor stakeholders include academic institutions and consumer advocacy groups.

For the inductive phase of the research, data were collected from key stakeholders in the telecommunications industry using interviews. The thematic analysis of the study revealed that awareness creation, chamber dialogue, education and information sharing, training and development, direct communication through the public information system, bilateral and multilateral engagement, consumer level approaches, promotion of stakeholder interest alignment, regular consultation, and systems feedback are the most widely used forms of communication strategies in the telecommunications industry. Based on the outcome of the findings and the literature review, the study developed a framework that effectively incorporates the relevant

communication strategies that can improve communication among stakeholders in the Ghanaian telecommunications industry. The Figure below is part of the process development of the *Strategic framework for stakeholder communication interest management*.

Secondary research question 2: How is the communication interests of stakeholders in the Ghanaian telecommunications industry managed?

A key strategy to promote stakeholder understanding and effective communication is to understand the different communication interests of the various stakeholders in the telecommunications industry. The growth in the industry has also increased the communication interests of the stakeholders. The communication process is relevant to the stakeholders in the industry, when their communication interests are identified and attended to effectively. Once the communication interests of the stakeholders are identified and managed, the communication among the stakeholders becomes effective. Therefore, it is critical for the study to set research questions that seek answers to the management of communication interests among stakeholders in the telecommunications industry. The second research question is: How is the communication interests of stakeholders in the Ghana telecommunications industry managed? In order to address this research question, a discussion guide was developed to obtain data from interviews with participants, and open-ended items were included in the two survey questionnaires that were developed for stakeholders and consumers respectively.

i. Awareness of stakeholders' communication interests

The study's findings indicate that awareness of stakeholder communication interests is important to key stakeholders in the telecommunications industry. They also suggest that, in the telecommunications industry, there are many stakeholders' interests that must be satisfied. Responses from the majority of the key stakeholders revealed that creating and sustaining awareness of the various communication interests of stakeholders is important for the industry's growth. Most of the key stakeholders are aware of their communication interests. The result can be explained by the view that most key stakeholders have the requisite knowledge of the operations in the telecommunications industry. They are aware of the various regulations and policies in the

industry. These policies and regulations establish and enforce the mandates and responsibilities of the key telecommunications stakeholders. Because the key stakeholders know their mandates and functions, they are in a position to demand that their interests and those of other stakeholders be met, especially when it comes to communication.

The most effective means of coordinating and implementing policies, and monitoring the operations of the telecommunications industry, is through communication. Another key explanation for this finding can be that the key stakeholders are particular about their communication interests because their mandates require them to communicate regularly with each other. Therefore, knowing and becoming aware of the communication interests in the telecommunications industry is in order.

The findings of the study also revealed that channels of communication used by major and minor stakeholders in the Ghanaian telecommunications industry include face-to-face dialogue; official letters; phone calls, and e-mail; the media (TV and radio); public lectures; consumer outreach programmes; public forums; seminars and workshops, and traditional media (community meetings), among others. The major and minor stakeholder groups employ these channels in addressing their communication interests in the telecommunications industry. The study found that these communication channels are mostly used by the key stakeholders and not widely used by the consumers in the Ghanaian telecommunications industry.

ii. Awareness of consumers' communication interests

The systems theory benefited the study when examining all the communication interests of the stakeholders in the Ghanaian telecommunications industry fully. The theory provided an opportunity for the study to analyse the various aspects of the communication interests in the telecommunications industry. It provided a broader perspective to the study of the communication interests of stakeholders. The application of the systems theory enabled the study to identify the various interests of stakeholders, including policy implementation, monitoring, quality service, and pricing, among others. These were integrated into the interview guide in soliciting comprehensive data for effective analysis.

The study, furthermore, utilised the stakeholder theory in identifying and managing the communication interests of all the stakeholders in the Ghanaian telecommunications industry. The theory helped the study to effectively describe the communication interests of the stakeholders in the industry, taking into consideration their power, influence, and legitimacy. With the application of the stakeholder theory, the study was able to gather the specific communication interests of each stakeholder in the telecommunications industry of Ghana. Due to the uniqueness of the key stakeholders in the industry, each with different regulatory powers, influence, and legitimacy, it was important to develop a rigorous interview schedule to obtain data from participants.

The study's findings show that communication interests are not effectively managed in most cases. Every stakeholder and consumer has his or her communication interests in the industry, which are also diverse. To effectively manage the communication interests of stakeholders and consumers, they need to be adequately identified and evaluated. It is recognised that consumers have different expectations resulting in varied communication interests. Consumers' communication interests are facilitated by the level of power, influence and legitimacy they possess and control in the telecommunications industry. It calls for effective identification and management of the various consumers' communication interests at their level. However, consumers' interests are often not properly assessed, affecting their communication ability in the industry.

The study utilised the stakeholder theory to identify the various consumers in the telecommunications industry and their respective communication interests. The use of the stakeholder theory provided an effective description of the communication interests of the consumers in the industry, to enhance the communication of their interests. Again, with the application of the stakeholder theory, the actions and behaviours of consumers are well defined and managed. The agenda-setting theory was also used to examine the communication interests of consumers and the rationale behind their use of the media to express their views, frustrations, and comments to the telecommunications industry regulator and providers. The use of the agenda-setting theory helped the study to understand how the media influence the communication interests of the Ghana telecommunications industry's consumers.

Systems theory was employed to wholly examine all the communication interests of the consumers utilising telecommunications services and products in Ghana. The systems theory provided an opportunity for the study to analyse the various aspects of consumers' communication interests in the industry. The application of the systems theory played a critical role in developing a questionnaire that seeks to find communication interests among consumers in the industry. The theory enabled the study to have a broader scope in data collection and analysis to achieve the study's objective. The two-way symmetrical model was employed to examine how research in the communication process can improve the communication interests of consumers. The use of the two-way symmetrical model enabled the study to design data collection instruments, collect and analyse data, while considering how information flows in the industry and impacts consumers' communication interests. The study also used the stakeholder theory to identify the level of power, interest, and influence consumers wield in the telecommunications industry. Therefore, the study designed a separate questionnaire for consumers after assessing the consumers' power, interest, and influence in the industry and developing a strategic communication plan that caters to the consumers' communication interests.

The results indicated that most consumers are unaware of communication interests in the telecommunications industry of Ghana. The consumers who indicated their awareness of communication interests pointed out that their communication interests areas include: quality customer care, feedback on information, quality service, improved network service, signal/network problems, charges on calls, affordable tariffs, spectrum auction, measures and channels for complaints, wider coverage, affordable prices, consumer protection, regular information sharing, un-dropped calls, data charges issues, call enhancement, uninterrupted calls, deducted airtime, mobile communication, mobile apps, government taxes, internet issues, prompt response and internet access.

The findings also indicate that the dominant group involved in the communication interest management of consumers are telecommunications service providers, telecommunications subscribers/consumers, the ministry of communication and the telecommunications industry regulator. The findings also showed that consumers' communication interests are not properly managed. The consumers further noted that their communication interests could be managed

through the quality provision of service, stable and better networks, constant engagement, effective communication channels, regular provision of up-to-date information, a common platform for consumers and operators, and improved network coverage and prioritisation of consumer needs. The study also found that challenges confronting consumers in managing communication interests include: poor quality service; unstable network issues; interruptions or transmission breaks; poor response or feedback, high service costs; poor customer service; poor communication; and poor monitoring.

iii. Communication interest management

Managing communication interests in the telecommunications industry is vital for the quality delivery of services, as indicated by the findings in the study. Furthermore, the findings show that most of the key stakeholders acknowledged that their communication interests are effectively managed. This finding suggests that managing stakeholders' communication interests in the telecommunications industry is significant. Communication among the key stakeholders, such as the National Communications Authority and telecommunication service providers, is formal and through official and formal channels. Most of the communication in the industry is meant for instructions, policy direction, monitoring, and evaluation of the operations in the industry. The result is in line with a study by Raupp and Hoffjann (2012), who found that deliberate and conscious efforts by stakeholders to manage communication interests is an effective decision-making tool.

There is good communication among key stakeholders due to the nature of their operations. Key stakeholders regard the industry regulator, the National Communications Authority, the telecommunications service providers and the telecommunications chamber as the main stakeholders who are directly involved in managing communication interests in the telecommunications industry. Possible suggestions for these findings are that these stakeholders are the most influential key stakeholders in the industry who are actively engaged in regular communication with each other. In most instances, the National Communications Authority, telecommunications service providers, and telecommunications chambers have major

communication interests in the telecommunications industry in Ghana. The findings are, therefore, appropriate to the current situation in the industry.

On the effective management of communication interests in the industry, the study found that the communication interests of stakeholders are not effectively managed by the agencies responsible for managing these interests. Most respondents indicated noneffective management of communications interest in the industry. There are concerns among stakeholders that the National Communications Authority are not addressing complaints from stakeholders on a timely basis, and policy issues are carried out mostly without proper communication with the stakeholders.

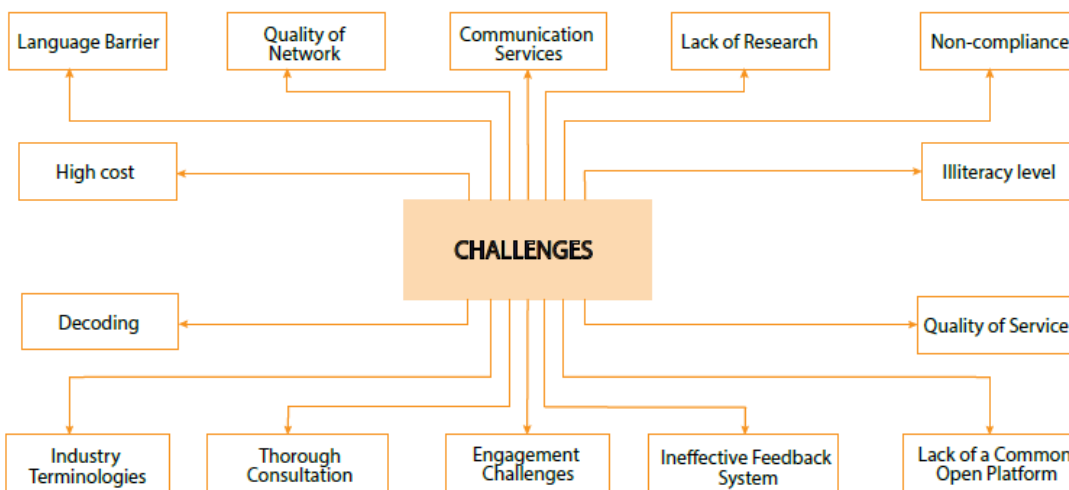
iv. Communication interest management challenges

The findings of the study suggest that the telecommunications industry has challenges in managing the communication interests of stakeholders. The majority of the respondents revealed that the most critical challenges in managing the interest of the telecommunications stakeholders in Ghana are: the poor network, poor quality of service, interruptions/transmission breaks, poor handling of stakeholders, and less attention to the interests of stakeholders, as well as poor information dissemination/communication, high cost of service, and poor customer service. Key stakeholders recognised these challenges in the telecommunications industry. The study's findings indicate that key stakeholders have many issues confronting the effective management of stakeholder communication interests.

A good and stable network and quality services are important for the communication interests of key stakeholders in the industry. The network and service delivery levels are major means of communication in the telecommunications industry. Consumers and key stakeholders assess the quality of services and networks to determine the efficiency of the telecommunications industry. Poor network and poor service quality, poor handling of stakeholder interest, less attention to stakeholder interest, poor communication service, poor information dissemination, failure to expand services and non-compliant operation, lack of information, organisational terminologies and lack of research in the industry are major challenges confronting key stakeholders in the telecommunications industry in Ghana.

Though the National Communications Authority has sanctioned telecommunications service providers through fines and penalties on several occasions, stakeholders, especially consumers, continue to face challenges in realising their communication interests. The inability of the National Communications Authority to permanently compel the telecommunications service providers to improve their network and service delivery is affecting the communication interests of the stakeholders. Other challenges identified by key stakeholders that impinge on the management of stakeholder communication interests in the telecommunications industry include: interruptions/transmission breaks, poor handling of stakeholders, poor information dissemination, and less attention to stakeholders' interests. These challenges can affect the smooth management of stakeholders' interests.

Figure 7.1: Communication interest management challenges in the Ghanaian Telecommunications Industry



Source: Author's conceptualisation (2020).

The answers generated to this research question point out that there are diverse stakeholder communication interests in the telecommunications industry. Major stakeholders have different interests compared to minor stakeholders, who also have different interests. Some stakeholders' communication interests are related to the protection of the consumers, while other stakeholders' communication interests are tailored towards protecting the telecommunications service providers.

The study's findings also indicate that the regulator (NCA) and the Ministry of Communications are responsible for managing communication interests within the industry. More of the findings show that most of the respondents do not recognise their communication interests to be effectively managed. However, it was found that effective management of communication interests is based on factors such as transparency, adherence to the NCA mandate, regular discussion of the industry, adherence to the telecommunications industry Act, sanctions meted for defaulters, monthly quality of service monitoring, direct contact with service providers, effective collaboration across stakeholder groups and consumer education. The study further found that there is difficulty in managing the diverse communication interests of stakeholders within the telecommunications industry of Ghana, due to the diverse interests of different stakeholders, lack of adequate engagement of all stakeholders, lack of a common platform for redress, and an ineffective feedback system. The study's findings were incorporated into the strategic framework developed, to undertake a comprehensive approach to the development of feasible measures to improve the communication interests' management in the Ghanaian telecommunications industry.

Secondary research question 3: How are communication challenges faced by stakeholders in the Ghanaian telecommunications industry managed?

Communication in the telecommunications industry is confronted with major challenges that can affect the overall communication process. This specific aim of the study sought to identify the communication challenges facing the stakeholders in the Ghanaian telecommunications industry. A detailed discussion on the assessment of the communication challenges is provided below.

Notwithstanding the significant importance of communication, like any other concept of management, communication is confronted by many challenges in the telecommunications industry of Ghana. Effective management of the stakeholder communication challenges requires stakeholders to identify all the communication challenges in the industry properly. Literature indicates that typical communication challenges can be grouped into language, physical, attitudinal, psychological, process, and semantic challenges. Therefore, stakeholders must make efforts to strategically identify all communication challenges in the Ghanaian communication industry to enhance communication among all stakeholders. The study set out to seek answers to

the following question: How are communication challenges faced by stakeholders in the Ghanaian telecommunications industry managed?

The selection of the theories is based on their ability to aid the study in identifying communication challenges facing stakeholders in Ghanaian telecommunication. The systems theory enables the study to broaden its scope in examining the communication challenges. The application of the systems theory helped the study to comprehensively and holistically assess the communication challenges in the Ghanaian telecommunications industry. The study used systems theory to assess every aspect of the communication challenges facing the key stakeholders in the industry. With the application of the systems theory, the study was able to identify that there are many communication challenges in the telecommunications industry which must be addressed. The theory informed the study to develop a comprehensive interview to adequately gather relevant data from the key stakeholders in telecommunications for analysis and interpretation.

The study also used the stakeholder theory to identify the communication challenges that arise from stakeholder management in the telecommunications industry. The stakeholder theory was applied to carefully assess the individual stakeholder's communication challenges in the telecommunications industry. The application of the stakeholder theory helped the study to reveal that there are different categories of stakeholders with varied communication challenges. Using the stakeholder theory helped the study identify communication challenges related to each key stakeholder in the telecommunications industry. In collecting and analysing data for the study, the communication challenges were assessed based on the telecommunications industry's power, influence, and legitimacy issues.

The data analysis from the interviews indicated some major communication challenges in the industry, including stakeholder collaboration problems, lack of adherence to the telecommunications act, and policy issues. Moreover, communication in the industry is impeded by a lack of knowledge regarding the regulator's operations, high expectations of consumers, misreading of communication information, and mobile platform service problems. The diverse interests of stakeholders, the entrenched position of some stakeholders, feedback system problems, legal issues, a link between the regulator and other regulatory bodies within the

telecommunications industry, and communication barriers, also affect communication among stakeholders. The study's findings show that the communication challenges have an adverse effect on the effective management of stakeholders' interests, the operational efficiency of the telecommunications industry regulators (NCA and Ministry of Communication), and the telecommunications service operators.

Many factors mitigate against effective communication. Some of these challenges are human-made, while others are beyond man's control. It is, therefore, not surprising that the study found some challenges affecting stakeholder communication in the telecommunications industry. These findings align with the assertions of Jureddi and Brahmaiah (2016). Lunenburg (2010) and Rani (2016), who state that challenges confront the communication process, affecting communication effectiveness among stakeholders. Communication challenges truncate the smooth flow of communication and do not allow the communication to achieve its intended purposes.

There was a need to comprehensively assess the industry and evaluate the communication expectations and interests of all stakeholders to promote effective communication in the industry. This challenge was compounded by the diversity of cultures and languages in Ghana. Every culture and language have different styles of and perceptions of communication. Some communication elements may seem offensive or insulting to some cultures; therefore, stakeholders must be circumspect and appropriate in communication.

On the other hand, the key stakeholders indicated that a key challenge of communication in the telecommunications industry is the difficulty of working with different stakeholders with different views. The communication process becomes difficult when the sender and receiver have different views, perceptions, and opinions on the message being communicated. Effective communication requires both the sender and the receiver to have similar views, perceptions and opinions on the message being communicated to foster understanding and quick feedback. A possible explanation for this is that there are different stakeholders with different functions and mandates in the telecommunications industry in Ghana, with each stakeholder operating with different views. This makes it difficult for key stakeholders to develop a common communication platform to share information and dialogue about regulatory and policy issues in the industry.

The results from the data analysis were incorporated into the final framework developed by the study to provide a comprehensive analysis of stakeholder communication in the telecommunications industry. The Figure below summarizes the main communication challenges confronting key stakeholders and consumers in the industry.

Figure 7.2: Communication challenges in the Ghanaian Telecommunications Industry

PSYCHOLOGICAL	ECONOMICAL	SOCIOLOGICAL	TECHNOLOGICAL	LEGAL	ENVIRONMENTAL
· Industry Technologies	· High Cost	· Engagement challenges · Language Barrier · Illiteracy level · Lack of common open platforms	· Quality of Network · Communication services · Ineffective feedback system · Interference with message · Decoding · Quality of service	· Lack of Research · Non-compliance · Thorough consultation	Lack of Research

Source: Author's conceptualisation (2020).

Secondary research question 4: How can stakeholders in the Ghanaian telecommunications industry assist with improving stakeholder communication?

The communication interests of the stakeholders of the telecommunications industry affect the communication effectiveness among the stakeholders. Therefore, stakeholders must improve

communication among themselves so that their communication interests can be served properly. It is recognised that an effective means of improving communication among stakeholders is to ensure that their communication interests are improved and better managed. Therefore, different information dissemination agendas must be applied in the telecommunications industry to meet the communication interests of all stakeholders. There must also be proper channels of communication to communicate with every stakeholder. It, therefore, becomes important for the stakeholders in the Ghanaian telecommunications industry to identify effective ways of managing the communication interests of stakeholders. Hence, the study developed a research question and found answers to the question: How can stakeholders in the Ghanaian telecommunications industry assist with improving stakeholder communication?

The study applied theories to assist with identifying means of improving stakeholder communication interest management. The use of systems theory enabled the study to analyse the various measures that can be used to address the communication interest management challenges and improve the stakeholder communication interests in the telecommunications industry. The use of this theory provided holistic views on the various measures and their effects on the ability of the stakeholders to communicate effectively with minimal or no resistance. The theory was useful in integrating communication strategies from different perspectives into the development of the data collection instrument. The development of the data collection instrument ensured that every aspect of the communication process, from the regulation of the industry, financial management, environmental protection, and social and human development, was considered.

The agenda-setting theory was also used to identify and analyse the measures that can be used to frequently communicate and interact with influential, powerful and legitimate stakeholders in the telecommunications industry of Ghana. This theory enabled the study to devise measures that can be used by all stakeholders, even those who cannot communicate their interests formally, to use the mass media directly. The agenda-setting theory also helped understand the media's effects on managing stakeholder communication challenges. The media is very critical in ensuring effective communication in the telecommunications industry. Therefore, the use of the agenda-setting theory made it possible for the study to develop measures incorporating media influences in improving communication among key stakeholders.

The two-way symmetrical and two-way asymmetrical model helped the study to produce communication measures that can be used to minimise agitations, resistance, and other unproductive behaviours that can impede the growth of the telecommunications industry. The theories helped the study to analyse the communication process to ensure that every stakeholder's views are considered. The use of the theories also helped the study to develop measures that can improve communication in the telecommunications industry in line with industry policies and regulations. The application of the stakeholder theory facilitated proper assessment of stakeholders' power, legitimacy, and influence, as well as their communication needs and communication challenges to designing practical measures to improve the stakeholder communication interest management in the telecommunications industry. With the application of the stakeholder theory, the study was able to develop data collection instruments and data analysis procedures, which indicated that an effective means of managing stakeholder communication interests is through the proper understanding of the various communication interests in the Ghanaian telecommunications industry. Undertaking open and thorough engagement with stakeholders on their interests can have the ability to ensure effective decision-making on the management of stakeholder communication interests.

The findings influenced the design and practicability of the strategic framework developed by the study to improve the management of stakeholder communication interests in the Ghanaian telecommunications industry. The study's findings also show that understanding the Telecommunications Act and its incorporation is vital in ensuring effective management of stakeholders' communication interests. The study's findings also point out that effective involvement of the stakeholders in the formulation and implementation of policies will improve the management of stakeholder communication interests in the industry. The regulator also needs to create a common platform for all telecommunications stakeholders to articulate their communication interests and enhance the management of those communications interests. The study's findings also reveal that communication strategies must be effective in the telecommunications industry. Furthermore, adequate and correct channels must be adopted to ensure information flow among diverse stakeholders and ensure that the communication challenges in the industry are effectively managed.

From this perspective, major challenges impede communication in the telecommunications industry. Therefore, key stakeholders need to identify realistic factors that can improve communication in the industry. A detailed discussion on the assessment of measures to improve communication is provided below.

Though there are communication challenges in the industry, the study also found that there are strategies and mechanisms to improve stakeholder communication. Regular interaction to improve stakeholder relationships, proper definitions of communication channels for all stakeholders, and encouragement of regular feedback among stakeholders were some of the main strategies suggested by key stakeholders to improve stakeholder communication in the industry. The qualitative responses from the stakeholders also revealed that understanding the communication interests of stakeholders, understanding the policies and regulations in the industry, developing a common platform or open framework for communication, and using effective communication strategies and channels are major means of improving stakeholder communication. These findings seem to align with the studies of Dragoi *et al.* (2011) and Venkatram (2012) on stakeholder engagement and communication.

The findings, furthermore, suggest that key stakeholders view regular interaction as an important means of improving stakeholder communication in the telecommunications industry. Effective communication of stakeholders' interests is based on the ability of the stakeholders to interact. Such interaction needs to be cordial and open to allow them to communicate their interests without any hindrances. Imperfect stakeholder interactions render the communication processes complicated and void.

Effective interaction among stakeholders relies heavily on the ability of all stakeholders to identify and recognize each stakeholder in the telecommunications industry adequately and to develop stakeholder-focused content and messages that address their interests. This finding supports the views of Oates and Dodds (2017), Luoma-aho (2015), and Karlsen *et al.* (2008) that stakeholder interaction is important for the successful and effective implementation of any strategy. The

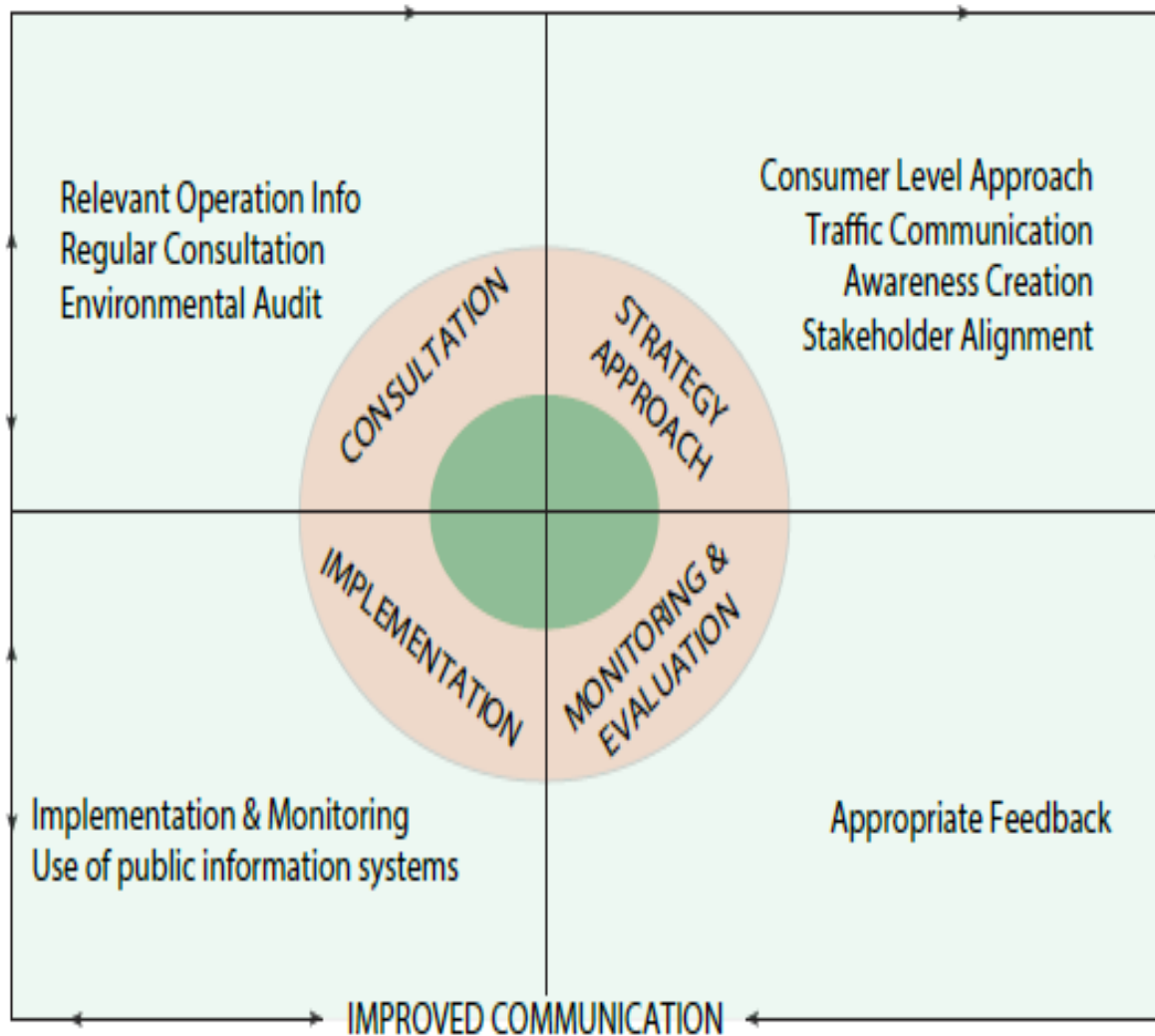
findings demand regular and periodic interaction between the industry regulator and all the stakeholders.

Moreover, the respondents also indicated that a proper definition of communication channels for all stakeholders is an effective means of improving communication in the telecommunications industry. Communication is truncated when the communication channels do not fit into the stakeholders' culture, values, and traditions. The condition makes it difficult for stakeholders to initiate and complete communication processes and realize their intended benefits. There are many channels of communication that can be used, but not all can be used for stakeholder communication. Each stakeholder requires different channels of communication. Therefore, it demands that stakeholders develop communication channels that suit their interests in stakeholders' communication. This finding is not surprising, as both consumers and key stakeholders equally acknowledge the importance of communication channels in improving communication effectiveness.

Feedback completes the communication process. Hence, stakeholders' poor, inadequate, and unreliable feedback affects the process. This finding is consistent with the assertions of Brennan and Merkl-Davies (2018) and Beatty (2015) on the application of feedback to improve communication among stakeholders. It is necessary to devise strategies that encourage every stakeholder in the industry to provide feedback to the sender to improve communication. It places the onus on the National Communications Authority and the telecommunications service providers to ensure regular and timely feedback on consumers' complaints and requests for industry information. Feedback must be reliable, concise, complete, accurate, and correspond to the message sent by the sender.

The findings on how to improve communication among the stakeholders are presented in the Figure below.

Figure 7.3: Improving communication in the Ghanaian Telecommunications Industry



Source: Author's conceptualisation (2020).

7.3 RESEARCH OBJECTIVES FOR STAKEHOLDERS AND CONSUMERS: QUANTITATIVE PHASE

The study found that the stakeholders in the telecommunications industry use communication strategies. However, there are some differences in the communication strategies used. The key stakeholders are more aware of communication strategies than the consumers. There are uniqueness and differences in the many communication challenges facing key stakeholders and consumers. The study's findings also point out that the interests of both consumers and stakeholders

are not effectively addressed. Enhancing the effective management of stakeholders' and consumers' communication interests requires careful identification of the individual communication interests of all stakeholders and consumers in the industry. Another important measure of improving the management of stakeholders' and consumers' communication interests is a clear definition of communication channels and frequent interaction among stakeholders and consumers. Below are the summaries of the findings to address the secondary research objectives of the study.

7.3.1 Research objectives for Stakeholders

The telecommunications industry in Ghana has grown substantially, and the number of telecommunications service providers has increased with the inclusion of private telecommunications service operators as a result of the liberalisation of the telecommunications industry. The laws, regulations, and policies in the industry have enabled many stakeholders to operate and influence decisions in the industry. There have been many stakeholders with diverse communication strategies, interests, challenges, and means of improving communication in the industry. This requires effective management of stakeholder communication.

Research objective 1: To determine if there is a relationship between communication strategies and improved communication efficiency and effectiveness

The telecommunications industry is vital to the growth and survival of businesses and the economic development of every nation. The global telecommunications industry has experienced exponential growth and advancement over the last decade. The deregulation of the telecommunications industry in 1994 catapulted the flow of foreign telecommunications service providers and investors. There are, more specifically, massive financial and infrastructural investments in the Ghanaian telecommunications industry. The government has also undertaken major projects and implemented policies and regulatory measures with the support of international bodies and donor partners over the years to develop, rehabilitate, improve, and expand telecommunications access and coverage.

The improvement and growth in the Ghanaian telecommunications industry have attracted many stakeholders with varied interests and expectations. Some of the stakeholders in the industry include the Ministry of Communication, Ministry of Environment, Science, Technology and Innovation, National Communication Authority, Ghana Chambers of Telecommunication, Consumer Protection Agencies, Information Service Department, Environmental Protection Agency, Ghana Atomic Energy Commission, telecommunications service providers, and cell tower management companies. The interests of these stakeholders must be identified and addressed on a frequent and timely basis.

Efficient and effective communication among stakeholders is a key mechanism for addressing stakeholders' interests. Communication is an important strategy in any industry. It improves stakeholders' interaction and resolves challenges effectively. It must be noted that every stakeholder has communication interests, which must be addressed. From this perspective, the efficient and effective identification of vital communication strategies has become imperative to promote successful communication in the telecommunications industry in Ghana. Therefore, the study sought to investigate existing communication strategies (if any) among the stakeholders in the industry. Research Question 1 sought to determine if there is a relationship between communication strategies and improved communication efficiency and effectiveness.

The application of systems theory enabled the study to have wider scope in searching for communication strategies. The use of the systems theory provided an opportunity for the study to have a holistic approach to investigating the communication strategies in the telecommunications industry of Ghana. The application of system theory enabled the study to reach out to many players in the industry to get a broader understanding of the communication strategies. The system theory revealed the various interactions among stakeholders in the industry. Again, the study uses the stakeholder theory to identify the various stakeholders in the telecommunications industry of Ghana in the literature review. By applying the stakeholder theory, the study was able to group the stakeholders into key stakeholders based on their interests, power, and legitimacy in the industry and identify their communication strategies. Some stakeholders have high power, legitimacy, and interest, while others have low power, legitimacy, and interest in the industry. The stakeholders also have different communication strategies, which must be identified individually to improve

communication management in the industry. The stakeholder theory was used to evaluate the legitimacy, power, and influence wielded by the stakeholders and how to communicate with every stakeholder efficiently and effectively. This theory helped the study develop two separate questionnaires and an interview guide for key stakeholders due to their particular influences in the industry.

The utilisation of the agenda-setting theory and the press agency model enhanced the study's ability to set a platform for stakeholders to deliberate and assess the efficiency and effectiveness of the various communication strategies in the Ghanaian telecommunications industry. The agenda-setting theory brought to light the media's usefulness in promoting communication among the stakeholders in the industry. Through the media, the stakeholders in the industry can generate vital information for discussion on means to improve efficient and effective communication strategies among stakeholders in the industry.

Moreover, the press agency model is, furthermore, used to understand the various influences that the stakeholders possess in the telecommunications industry through the application of legislation and enforcement of policies because, in the industry, there are many stakeholders with various interests, power levels, and influences. For instance, government-related stakeholders such as the NCA use regulatory measures to influence operations in the industry. The telecommunications service providers influence the industry by providing quality service and determining service charges. Their communication strategies are one way, though they are entirely different. In developing the two questionnaires and the interview guide in line with appropriate communication strategies used by stakeholders in the telecommunications industry of Ghana, understanding these stakeholders' interests, power levels, and influences was very useful. Through the use of the press-agency model, the study was able to divide the data collection instruments into the questionnaire and interview guide for stakeholders, because there are instances where the communication strategies employed by the stakeholders are one-way communication strategies to which the other players have no opportunity to respond. The press-agency model helped the study to develop an effective strategic communication plan that will be acceptable to all stakeholders.

Moreover, the study used the two-way symmetrical model to promote the use of ethical principles in communication among stakeholders in the industry. The two-way symmetrical model highlighted the selection of communication strategies that benefit both the stakeholder sending information and the stakeholder receiving the information in the industry. Therefore, every communication strategy must be beneficial to all stakeholders in the communication process. The two-way symmetrical model, which prioritises research and ethics, enhanced the scope of the study in the development of the questionnaire and interview, data collection, and data analysis that considers the communication strategies of all stakeholders, no matter their power and influence in the industry. Using the two-way symmetrical model in the development of the questionnaire helped the study to understand the basic rules and legislations within the telecommunications industry, based on which the questionnaires and interview guide were developed and distributed to the respondents and participants. It helped to gather relevant data to enrich the analysis and findings of the study.

Based on the literature review and the choice of theories, the main research approach utilised in this part of the study, was the deductive research approach. The application of the deductive approach enabled the study to objectively explain the variations in communication strategies among stakeholders in the Ghanaian telecommunications industry, taking into consideration the theories of the study. Data were collected from key stakeholders in the industry. The study used descriptive statistics, Kaiser-Meyer-Olkin (KMO) and Barlett's Test, factor analysis, inferential analysis and SEM for statistical analyses. The data analysis was done considering the theories to ensure that the results were in line with the objective. The results from the data analysis indicated that the stakeholders in the industry use varied communication strategies. The key stakeholders indicated that awareness creation, relevant operational information, implementation and monitoring, and regular consultations are the major communication strategies employed among the stakeholders. The result also showed many communication strategies employed by key telecommunications industry stakeholders. The result further revealed that every key stakeholder in the Ghanaian telecommunications industry has their unique communication strategy to communicate with other stakeholders in the industry. Based on the outcome of the findings, the theories utilised, and the literature review, the study developed a strategic framework that efficiently and effectively incorporates all the relevant communication strategies identified through

the data analysis and can improve communication among stakeholders in the Ghanaian telecommunications industry.

The following hypotheses were tested to address Research Objective 1, with specific reference to *stakeholder strategies and improved communication efficiency and effectiveness*:

Table 7.1: Hypothesis results for H1 to H6 and H9 to H14

Hypotheses 1 – 6 and 9 - 14		
Hypothesis 1	Awareness creation relates to improved communication efficiency	Supported
Hypothesis 2	Traffic communication relates to improved communication efficiency	Supported
Hypothesis 3	Public information systems relate to improved communication efficiency	Not supported
Hypothesis 4	Appropriate feedback relates to improved communication efficiency	Supported
Hypothesis 5	Regular consultation relates to improved communication efficiency	Not supported
Hypothesis 6	Promotion of stakeholder alignment relates to improved communication efficiency	Supported
Hypothesis 9	Awareness creation relates to improved communication effectiveness	Not supported
Hypothesis 10	Traffic communication relates to improved communication effectiveness	Supported
Hypothesis 11	Public information systems relates to improved communication effectiveness	Not supported
Hypothesis 12	Appropriate feedback relates to improved communication effectiveness	Not supported
Hypothesis 13	Regular consultation relates to improved communication effectiveness	Not supported

Hypothesis 14	Promotion of stakeholder alignment relates to improved communication effectiveness	Supported
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From the results of the hypothesis testing for stakeholder strategies, it can be deduced that:

1. Awareness creation, traffic communication, appropriate feedback and promotion of stakeholder alignment relate to improved communication efficiency; while public information systems and regular consultation do not relate to improved communication efficiency.
2. Traffic communication and the promotion of stakeholder alignment relate to improved communication effectiveness; while awareness creation, public information systems, appropriate feedback and regular consultation do not relate to improved communication effectiveness.

Research objective 2: To determine if there is a relationship between challenges perceived and improved communication efficiency and effectiveness

Though communication is important in an organisation and among stakeholders, it faces many challenges and obstacles. Rani (2016), Jureddi and Brahmaiah (2016), and Lunenburg (2010) indicate that challenges to effective communication come from many areas, and they obstruct the effective flow of communication and prevent organisations from achieving the intended communication purposes. The second objective of the study seeks to identify the communication challenges facing stakeholders in the Ghanaian telecommunications industry. For communication to be efficient and effective, it must be specific to address the needs of each individual in the telecommunications industry. However, every stakeholder faces unique challenges in the communication process. Hence, wholesale identification of the communication challenges in the industry has not been prudent. Therefore, it has become important for the stakeholders in the telecommunications industry of Ghana to identify the individual communication challenges to promote quality communication in the industry effectively.

To efficiently and effectively address the objective, the study identified and reviewed theories related to stakeholder communication challenges in the telecommunications industry, including the systems theory, stakeholder theory, press agency model, and stakeholder theory. These theories

were instrumental in identifying communication challenges confronting stakeholders in the industry, the respondents. The reason for using the systems theory is its ability to broaden the scope of examination of the communication challenges. The theory provided a comprehensive analysis of the communication challenges confronting stakeholders in the Ghanaian telecommunications industry. The communication challenges from all the stakeholders are fully assessed and addressed in the study. The utilisation of the systems theory brought comprehensibility in identifying communication challenges in the Ghanaian telecommunications industry, such as personal and institutional conflicts, biases, cultural differences, use of jargon, and communication interferences. The use of systems theory was helpful in developing data collection instruments and gathering relevant and comprehensive data. Moreover, the application of systems theory in the study aided the study in conducting a comprehensive analysis, taking into consideration the communication challenges confronting the key stakeholders in the Ghanaian telecommunications industry.

The study also used the stakeholder theory to help identify the communication challenges that arise from the legitimacy, power, and influence of the telecommunications industry's stakeholders. The stakeholder theory was critical in identifying the communication challenges resulting from dealing with stakeholders in the telecommunications industry. The application of the stakeholder theory in the study enabled the study to carefully review the various communication challenges in the key stakeholders' legitimacy, power and influence. The use of the stakeholder theory was apt since every stakeholder has unique challenges when it comes to communication. The development of the questionnaire, collection of data, and data analysis reflects the general communication challenges in the telecommunications industry. The use of the press-agentry model also helped to understand how the communication challenges in the industry manifest themselves. Through the use of the press-agentry model, the study was able to understand the unbalanced nature of the communication process among stakeholders that mostly favours some stakeholders, such as the regulators and service providers. The use of the theory laid a foundation to understand stakeholders' tactics used to gain attention in the industry, which does not inure to the benefits of all players in the industry. Therefore, the study developed data collection instruments to eliminate biases in the communication process confronting some stakeholders in the industry. The data collection, analysis of data, and discussion of the results took into consideration the ability of some stakeholders to unduly influence the communication process to their advantage.

The study utilised quantitative data collected from the respondents, through measuring instruments developed based on the literature review and theories. Data were collected from key stakeholders in the industry. The research used descriptive statistics, Kaiser-Meyer-Olkin (KMO) and Barlett's Test, factor analysis, inferential analysis and SEM for data analysis. The data analysis and results showed that key stakeholders faced a significant number of challenges when it came to managing stakeholder communication interests within the telecommunications industry of Ghana. On the part of the key stakeholders, resistance to sharing information, difficulties working with different stakeholders, difficulties in providing feedback to the telecommunication regulator, the inability of the regulator (NCA) to provide information on a regular and timely basis, difficulties in managing the diverse interests of the regulator, and problems in using the most suitable communication channel, were the major communication challenges in the industry. These results show that communication challenges exist among key stakeholders in the telecommunications industry of Ghana. The results further indicate that the telecommunications industry's communication challenges are unique to every key stakeholder. There are communication challenges that are peculiar to NCA. However, it is recognised to be the most important communication challenge to the telecommunications service providers in the Ghanaian telecommunications industry. The results from the data analysis were incorporated into the final strategic framework that was developed to provide a comprehensive analysis of stakeholder communication in the telecommunications industry of Ghana.

The following hypotheses were tested to address Research Objective 2, with specific reference to *challenges perceived and improved communication efficiency and effectiveness*:

Table 7.2: Hypothesis results for H7, H8, H15 and H16

Hypotheses 7, 8, 15 and 16		
Hypothesis 7	Personal stakeholder challenges relates to improved communication efficiency	Not supported
Hypothesis 8	Regulatory challenges relates to improved communication efficiency	Supported
Hypothesis 15	Personal stakeholder challenges relates to improved communication effectiveness	Not supported
Hypothesis 16	Regulatory challenges relates to improved communication effectiveness	Supported

From the results of the hypothesis testing for challenges perceived, it can be deducted that: personal stakeholder challenges do not relate to improved communication efficiency, while regulatory challenges do relate to improved communication efficiency. Personal stakeholder challenges do not relate to improved communication effectiveness, while regulatory challenges do relate to improved communication effectiveness.

There is a need to improve communication in the telecommunications industry among stakeholders. Efficient and effective means of improving communication in this industry include ensuring the communication process is complete. Thoughts and expressions must be clear to all stakeholders. The sender of a message in the telecommunications industry must fully appreciate the content and the purpose of communicating. The sender must have clear thought and purpose. The message communicated must be underpinned by realistic objectives.

There are many communication challenges in the telecommunications industry of Ghana. These challenges adversely impact effective communication interests management in the Ghanaian telecommunications industry. Therefore, the identification and assessment of feasible measures to improve the communication interests among the stakeholders in the industry must be done. A

review of the literature indicates that communication experts also need to develop measures to minimise the challenges confronting the stakeholders in the communication process. Based on this, the study has set out the objective to explore ways to improve communication among the stakeholders in this industry.

To efficiently and effectively analyse this objective, the study used systems theory, stakeholder theory, agenda setting theory, two-way asymmetrical model, public information model, and two-way symmetrical model to realise this objective effectively. The use of systems theory enabled the study to comprehensively analyse the various measures that can be used to address the communication challenges and improve the stakeholder communication interests in the telecommunications industry. The use of systems theory provided holistic views on the various measures and their effects on the ability of the stakeholders to communicate effectively with minimal or no resistance. Through the application of the systems theory, the study was able to develop a questionnaire with a wide range of possible means of overcoming the communication challenges. The two-way asymmetrical and two-way symmetrical models were used to understand how research on the industry rules and resources within the telecommunications industry can improve communication among stakeholders.

The theories were specifically applied in the study to analyse stakeholder interactions; the notion that all stakeholders are equal and their communication interests must be taken seriously to improve communication efficiency and effectiveness in the industry. These interactions among the stakeholders led to a proper understanding of how information can be used to improve communication among the key stakeholders in the telecommunications industry. Based on this, the study included measures related to information flow on policies and regulatory measures in the development of the questionnaire. It also ensured that the data analysis considers the proper appreciation of industry policies, rules, and regulations in the telecommunications industry to develop a strategic communication plan that can improve stakeholder communication in line with national and industry laws and policies.

The agenda-setting theory and press-agentry model were also used in developing data collection instruments to identify and analyse the measures that can be used to frequently communicate and

interact with influential, powerful and legitimate stakeholders in the telecommunications industry of Ghana. The theories enabled the study to devise measures that can be used by all stakeholders, even those who cannot communicate their interests formally. The theories helped the study to identify communication measures that can be used to minimise agitation, resistance, and other unproductive behaviours among stakeholders that can impede the growth of the telecommunications industry through data collection and data analysis. The communication abilities of stakeholders in the telecommunications industry are also identified and managed through stakeholder theory. The application of the stakeholder theory facilitated proper assessment of stakeholders' power, legitimacy, and influence, as well as their communication needs and challenges, to design practical measures to improve stakeholder communication interests management in the telecommunications industry.

The key stakeholders indicated that the means of improving stakeholder communication interests include: properly defined communication channels for all stakeholders, regular interaction to improve stakeholder relationships (which is very important), and regular systems to monitor and evaluate stakeholder interests. The study's findings revealed that there are no one-size-fits-all solutions to the communication challenges. Efficient and effective management of the communication challenges requires identifying each key stakeholder's communication challenges and designing specific solutions to mitigate the challenges. The uniqueness of the study's findings influenced the design and practicability of the strategic framework developed to improve the management of stakeholder communication interests in the Ghanaian telecommunications industry.

7.3.2 Research objectives for Consumers

Consumers play vital roles in the Ghanaian telecommunications industry. The industry has grown tremendously over the last three decades, attracting many service providers, investments, innovations, policies and regulations. It has also witnessed high growth in the number of consumers. The subscriber base of telecommunication service providers has increased over the years. Consumers have become major indispensable players in the telecommunication industry, and the consumers' communication must be properly managed. Therefore, there must be a

comprehensive examination of how consumer communication can be effectively managed in the Ghanaian telecommunication industry. The study developed a primary research objective for this phase: to investigate how stakeholder communication can be managed in the Ghanaian telecommunication industry. From this perspective, consumers are considered a specific kind of stakeholder group. The study employed systems theory, agenda setting theory, and stakeholder theory to effectively achieve this study's primary objective. It used the quantitative research approach to gather data for quantitative analysis and interpretation.

The findings from the literature review revealed that the most significant communication strategies for consumers in the telecommunication industry include: awareness creation, traffic communication, implementation and monitoring, appropriate feedback and regular consultations. The study revealed that the awareness creation of communication interests of consumers is not properly carried out, and the management of consumers. However, there are also measures that consumers can adopt to improve their communication in the industry.

Research objective 3: To determine if there is a relationship between challenges perceived and communication strategies used among consumers in the Ghanaian telecommunications industry

i. Communication challenges

The proper realisation of the full benefits of communication among consumers in the telecommunications industry of Ghana is impeded by some direct and indirect communication challenges. These challenges can affect the effectiveness of the communication process among consumers. The challenges can also adversely affect communication objectives in the telecommunications industry. Rani (2016), Jureddi and Brahmaiah (2016), and Lunenburg (2010) indicate that challenges to effective communication can be in the form of language, physical, attitudinal, psychological, process, cultural, and semantic challenges. These communication challenges manifest differently among consumers.

Every consumer faces unique challenges in his or her attempt to communicate in the telecommunications industry. It is important, therefore, for consumers to identify their unique communication challenges so they can address them effectively. Hence, the study aimed to identify the communication challenges facing consumers in the Ghanaian telecommunications industry. The employed theories effectively identify the communication challenges and address this study objective. The relevant theories used in this objective include systems theory, public information model, and stakeholder theory. The study used systems theory to achieve this objective, because it enabled the assessment of the communication challenges as a whole, comprising all relevant consumers in the telecommunications industry. It provided a comprehensive assessment of all identifiable communications in the telecommunications industry. It also provided a comprehensive analysis of the communication challenges in the Ghanaian telecommunications industry.

The study employed the stakeholder theory to identify communication challenges in the industry. The theory was employed to help the study identify the communication challenges that arise from customers' legitimacy, power, and influence in the industry. Assessing the customers' influence, becomes important in identifying the communication challenges in the industry. This theory supports the data analysis and discussion of results based on the influence of consumers in the industry.

Data were collected from key consumers who utilise telecommunications services and products. The data analysis and results show that difficulty in realising new roles, misdefining needs and interests during communication, lack of effective communication resources, inadequate information provision by the regulator (NCA) on a timely basis, difficulty in managing the diverse expectations of all consumers by the regulator (NCA), and problems in using the most suitable communication channel were some of the communication challenges identified. The results from the study indicated that consumers face major communication challenges in the telecommunications industry. It is mostly due to the lack of and inappropriate consultation of consumers in formulating and implementing policies. One of the major communication challenges among consumers in the industry is the lack of involvement and consultation of consumers in the formulation and implementation of policies in the industry. The results from the data analysis were

incorporated into the final strategic framework developed by the study to provide a comprehensive analysis of consumer communication in the telecommunications industry.

ii. Communication strategies

The introduction and expansion of the telecommunications industry in Ghana have provided immersed contributions to the business growth, operational efficiency and increase in profit margin, as well as the survival of businesses. It has enabled businesses in all sectors of the economy, especially the service and industrial sectors, to contribute substantially to the economic development of Ghana. The deregulation and private participation of the telecommunications industry have attracted many telecommunications service providers into the industry. The deregulation has resulted in competition, innovation, and customer-centred services. It has also increased the number of telecommunications consumers patronising the services of telecommunications service providers over the last two decades. The increase in the number of customers in the industry means that all the various communication strategies employed by the customers must be identified and effectively managed to create a conducive atmosphere for consumers to communicate in the telecommunications industry effectively. Therefore, the study sought to investigate existing communication strategies among the consumers in the Ghanaian telecommunications industry. The relevant strategies considered in this section are: awareness creation, traffic communication, public information system, appropriate feedback, regular consultation, stakeholder alignment and implementation and monitoring.

Effective evaluation of the objective requires the application of theories. The study employed the systems theory to enlarge the boundary identification and assessment of all consumers in the telecommunications industry. The use of the system theory enabled the study to identify that even the key stakeholders are also consumers of telecommunications services. Invariably, all the personnel working in the institutions that serve as key stakeholders, and even the institutions themselves, use telecommunications services. The study also used the agenda setting theory to identify the various platforms employed by the consumers to discuss issues affecting their utilisation of telecommunications services. The agenda-setting theory, furthermore, helped the study to assess the effective application of the various media channels (both traditional and

modern) to communication in the telecommunications industry. In Ghana, the various media channels are important to send, collect and assess effective communication strategies among consumers in the telecommunications industry. The study further applied the public information model to elaborate on the benefits of the timely release of accurate information among consumers by assisting the study in designing data collection instruments that incorporate the concept of information generation and release. The two-way symmetrical and asymmetrical models were utilised to provide a comprehensive understanding of the influence of research in communication to identify the various communication strategies used by consumers in the telecommunications industry. The models enabled the study to consider the relevance of ethics in developing communication strategies among various consumer segments. These models were critical in developing the questionnaire for the consumers in the telecommunications industry, coming up with effective communication strategies acceptable to all consumers, and aligning research and ethical standards with the communication strategies to promote effective communication in the telecommunications industry.

The application of the stakeholder theory helped the study to effectively evaluate, assess, and manage the various consumer groups in the telecommunications industry based on their power, influence, and legitimacy to develop feasible communication strategies for the consumers in the telecommunications industry. The press-agentry model is also utilised to study how consumers communicate in the industry. Consumers mostly communicate one way. Consumers complain about service quality and prices but seldom get feedback. They receive industry policies but are not engaged in policy development. The press-agentry model helped build an effective questionnaire. The model helped the study develop a strategic communication plan aligned with consumer communication strategies.

A quantitative research method was employed to achieve the fifth objective after a careful review of the theories used under this objective and further development of data collection instruments. The application of the quantitative approach enabled the study to objectively explain the variations in communication strategies among consumers in the Ghanaian telecommunications industry. Data were collected from consumers in the industry. The study used descriptive statistics, Kaiser-Meyer-Olkin (KMO), Barlett's Test, factor analysis, inferential analysis, and SEM. The results of the study

point out that the communication strategies used by consumers are fundamentally different from those used by the key stakeholders in the telecommunications industry of Ghana. Even among consumers, many communication strategies are employed. Some communication strategies, such as awareness creation, are highly utilised among the consumers of the telecommunications industry. The consumers also pointed out that awareness creation, relevant operational information, traffic communication, implementation and monitoring, regular consultations, and use of public information systems are the major communication strategies employed by the consumers. Based on the outcome of the findings and the literature review, the study developed a strategic framework that effectively incorporates the relevant communication strategies that can improve communication among consumers of the Ghanaian telecommunications industry.

Table 7.3: Hypothesis results for H1 to H21

Hypotheses 1 - 21		
Hypothesis 1	Awareness creation relates to NCA regulator challenges	Not supported
Hypothesis 2	Traffic communication relates to NCA regulator challenges	Not supported
Hypothesis 3	Public information systems relates to NCA regulator challenges	Not supported
Hypothesis 4	Appropriate feedback relates to NCA regulator challenges	Not supported
Hypothesis 5	Regular consultation relates to NCA regulator challenges	Not supported
Hypothesis 6	Stakeholder alignment relates to NCA regulator challenges	Not supported
Hypothesis 7	Implementation and monitoring relate to NCA regulator challenges	Not supported
Hypothesis 8	Awareness creation relates to personal stakeholder challenges	Not supported
Hypothesis 9	Traffic communication relates to personal stakeholder challenges	Not supported
Hypothesis 10	Public information systems relates to personal stakeholder challenges	Not supported
Hypothesis 11	Appropriate feedback relates to personal stakeholder challenges	Not supported
Hypothesis 12	Regular consultation relates to personal stakeholder challenges	Not supported

Hypothesis 13	Stakeholder alignment relates to personal stakeholder challenges	Not supported
Hypothesis 14	Implementation and monitoring relates to personal stakeholder challenges	Not supported
Hypothesis 15	Awareness creation relates to electronic communication and work challenges	Not supported
Hypothesis 16	Traffic communication relates to electronic communication and work challenges	Not supported
Hypothesis 17	Public information systems relate to electronic communication and work challenges	Not supported
Hypothesis 18	Appropriate feedback relates to electronic communication and work challenges	Not supported
Hypothesis 19	Regular consultation relates to electronic communication and work challenges	Not supported
Hypothesis 20	Promotion of stakeholder alignment relate to electronic communication and work challenges	Not supported
Hypothesis 21	Implementation and monitoring relate to electronic communication and work challenges	Not supported

From the results of the hypothesis testing for *challenges perceived and communication strategies* for *consumers*, it can be deduced that: awareness creation, traffic communication, public information systems, appropriate feedback, regular consultation, stakeholder alignment, and implementation and monitoring are not related to NCA regulator challenges. Similarly, awareness creation, traffic communication, public information systems, appropriate feedback, regular consultation, stakeholder alignment, and implementation and monitoring are not related to personal stakeholder challenges. Awareness creation, traffic communication, public information systems, appropriate feedback, regular consultation, stakeholder alignment, and implementation and monitoring are also not related to electronic communication and work challenges.

iii. Improved communication

The relevance and influence of the consumers in the telecommunications industry of Ghana demand that realistic measures are developed to improve the communication among consumers in the industry. Measures must be put in place for the communication process to be completed and achieve its purpose. Therefore, the receiver must be able to receive the message, and the sender must be able to get feedback from the receiver. However, communication challenges in the industry impede smooth and effective communication and require the identification and assessment of feasible measures to improve the communication interests among the consumers in the industry. Based on this, the study aimed to explore ways to improve communication among the consumers in the industry.

The telecommunications industry is technologically driven, and one of the means of improving communication among consumers is through the application of information technology. To effectively analyse this objective, the systems theory, public information model, agenda setting theory, and stakeholder theory were employed. The systems theory was used because it has the strength to assist the study in comprehensively analysing the various measures that can be used to address the communication challenges and improve the consumers' communication interests in the telecommunications industry. The use of systems theory provided holistic views on the various measures and their effects on the ability of the consumer to communicate effectively in the telecommunications industry. The public information model was used to understand consumers' interactions through applying the information in the industry. It led to the gathering of detailed information on the means of improving communication among consumers in the Ghana telecommunications industry.

The agenda-setting theory was used to identify and analyse the measures that consumers can use to frequently communicate with and interact with influential, powerful and legitimate stakeholders in the telecommunications industry of Ghana. The media is regularly used to communicate in the industry. The study incorporated items on information technology into the data collection instrument developed, using the agenda-setting theory. Through applying this theory, the study was able to devise measures for all consumers for direct use (even those who cannot communicate

their interests formally) of mass media and social media platforms. The stakeholder theory's application in this study's objective was to facilitate proper assessment of consumers' power, legitimacy, and influence, as well as their communication needs and challenges, to design practical measures to improve their communication in the industry. The communication ability of every consumer is also identified and managed through the application of the stakeholder theory. With the application of the stakeholder theory, the study was able to come out with various means of improving communication among consumers through the development of the questionnaire. It was relevant because there are many different categories of consumers in telecommunications that must be carefully targeted with specific measures to meet their communication challenges.

After the analysis of the quantitative data from consumers, the following ways to improve communication were indicated: the definition of consumer needs and expectations is stipulated; a consumer communication plan is critically developed and implemented; regular feedback among consumers is encouraged and communication channels for all consumers are defined; regular interaction to improve stakeholder-consumer relationships; determining appropriate institutional options for stakeholder-consumer engagement; promotion of consumer ownership regarding decisions taken; and regular systems to monitor and evaluate consumers' interests. Careful analysis of the results showed that every consumer has their communication challenge, which demands specific measures to improve communication. However, some of the measures to improve communication cut across consumers. Some of these measures include frequent consultation among consumers and stakeholders to enhance the improved communication process. The study's findings influenced the design and practicability of the framework developed for the study to improve the management of consumer communication in the Ghanaian telecommunications industry. The measures to improve the consumers' communication interests in the industry are mainstreamed into the strategic framework.

Table 7.4: Hypothesis results for H22 to H24

Hypotheses 22 - 24		
Hypothesis 22	Improved communication relates to NCA regulator challenges	Not supported
Hypothesis 23	Improved communication relates to personal stakeholder challenges	Supported
Hypothesis 24	Improved communication relates to electronic and work challenges	Supported

From the results of the hypothesis testing for *challenges perceived* and *communication strategies for consumers*, it can be deduced that: improved communication does not relate to NCA regulator challenges; while it does relate to personal stakeholder challenges, and electronic and work challenges.

7.4 RESEARCH PROBLEM

The telecommunications industry has impacted many aspects of society and has attracted many stakeholders (Rahul, 2016). The contributions of the telecommunications industry to the Ghanaian economy have intensified the public and private interests in the activities and operations of the industry (Eshun, 2019). It is, therefore, necessary to promote the intensification of alliances among stakeholders such as employees, investors, consumers (end-users), civil society organisations, mass media, regulators, elected officials, ministries, departments, and agencies through effective communication.

Total stakeholder support provides the telecommunications industry with impressive leverage that opens market opportunities, increases profitability, creates goodwill, promotes and strengthens partnerships, and minimises industrial problems. However, Van Riel (2012) notes that achieving total stakeholder support is sometimes not feasible within the short and medium terms and requires a long-term commitment from all players in the industry. An efficient and effective mechanism that promotes total stakeholder support/commitment, is: efficient and effective management of communication interests among stakeholders, especially from the industry regulator's point of view (Oates & Dodds, 2017). The stakeholders must regularly be engaged, and information and policy

direction should be effectively communicated to them to minimise policy implementation challenges in the telecommunications industry in Ghana.

However, there is little or no specific regulation regarding the deployment of strategic communication in this industry in Ghana, thus opening the avenue for an influx of communication challenges among providers, regulators, and consumers. It leads to exploitation, ethical issues such as abuse of dominant position, deceptive communication and junk or unsolicited electronic communication, and poor quality of network services (National Communications Authority, 2017).

The telecommunications industry on the African continent, particularly in Ghana, is a young and growing industry and, therefore, requires players and regulators of the industry to get the necessary support from all the relevant stakeholders at different levels by implementing cogent and feasible communication (Maj, 2015). It has become necessary for the leaders of the telecommunications industry to frequently engage all the stakeholders to ensure an effective flow of communication (Luoma-aho, 2015).

Studies conducted by Adeyinka, Ajiboye, Emmanuel and Wojuade (2007), Rasila and Mudau (2012), and PricewaterhouseCoopers (2012) indicate that the telecommunications industry is growing at an increasing rate, but it is facing difficulty in communicating policies and regulatory measures to all the stakeholders. Nimako, Azumah, Donkor and Veronica (2010) conducted a study to determine customer satisfaction and found out that consumers are not well informed about the operations and responsibilities of the telecommunications companies in Ghana. Nanevie (2012) also points out that though government regulations impact greatly on the operations of telecommunications services in Ghana, such regulations are not known by the consumers and civil society organisations, due to poor or weak means of disseminating information among all the stakeholder groups.

Ghana's telecommunications industry lacks clear policy direction, which makes it difficult for the stakeholders to communicate among themselves effectively. Poor communication among stakeholders in the industry has been a major cause of industrial unrest and uproar from civil society organisations, communities and public institutions. There are no clearly defined

communication strategies used in the telecommunications industry. Therefore, there is a need to improve communication among the stakeholders and consumers in the Ghanaian telecommunications industry to address their communication interests effectively.

Consultation among some players and a review of policy documents from the industry indicate that the telecommunications industry in Ghana lacks a well-defined strategic communication plan and coordinated implementation approach to secure absolute cooperation and commitment from all its stakeholders. Therefore, the study will develop a strategic communication plan for the telecommunications industry based on the research questions and field data collected as part of its policy implications and recommendations. This strategic communication plan will be more pragmatic and can be used to manage communication interests among stakeholders in the telecommunications industry.

The study, therefore, suggest solutions that can help improve communication among stakeholders and consumers in the Ghanaian telecommunications industry. Some of the solutions developed by the study, include: using appropriate communication channels and ensuring open and effective communication channels for all key stakeholders and consumers; enhancing quality feedback in the industry; and effective consultations and interaction among stakeholders and consumers, among others.

7.5 STRATEGIC FRAMEWORK

Based on the research questions and the outcome of the analysis conducted on the data collected from the field, the study developed a strategic framework. This strategic framework has the propensity to manage stakeholder communication interests within the telecommunications industry of Ghana. This strategic framework is called the Communication Management Strategic Plan (CMSP). The strategic framework shows that communication management begins from the policy creation level through to policy initiation/formulation, implementation level, monitoring and evaluation, leading to improved communication interests management. The strategic framework becomes a platform required to ensure improved communication among telecommunications stakeholders in Ghana. The strategic framework is designed based on discoveries from the study's

empirical qualitative and quantitative data. This strategic framework has the propensity to assist stakeholders in achieving maximum communication. The strategic framework and its dimensions are presented in the Figure below.

The study explores the stakeholder communication strategies that exist in a developing country's telecommunications industry. The study again examines how the communication interests of stakeholders in a developing country's telecommunications industry are managed. Further, the study examines how the communication challenges faced by stakeholders in a developing country telecommunications industry are managed and finally investigates how stakeholders in a developing country telecommunications industry can help improve stakeholder communication.

Regarding the stakeholder communication strategies that exist in a developing country's telecommunications industry, the study discovered that the telecommunications industry makes a significant contribution to Ghana's economic growth and development. Chamber dialogue, education and information sharing, training and development, and the public information system are critical for a communication strategy among telecommunications service providers at the level of key stakeholders. The study concludes that regular consultation and feedback among stakeholder groups in the telecommunications industry is essential because stakeholders expect to be consulted on industry issues on a timely and frequent basis.

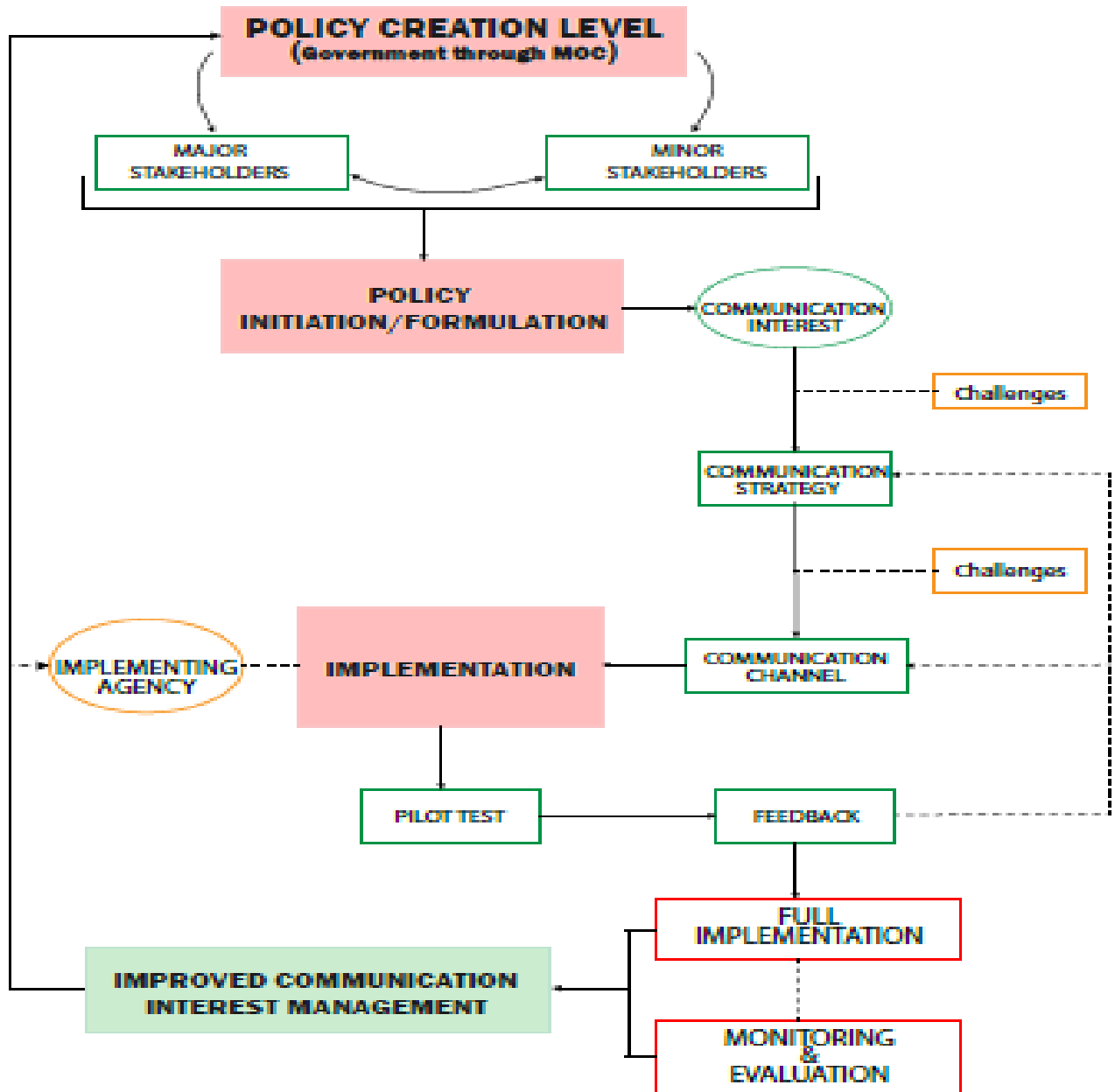
Regarding the identification and investigation of the communication interests of stakeholders, the study discovered that it is important to ensure smooth communication among the stakeholders in the Ghanaian telecommunications industry. Furthermore, quality customer service, information feedback, and improved network service are all positive predictors of communication interests. They may not, however, be accurate predictors of the entire communication process in the telecommunications industry. The challenges confronting effective management of stakeholder communication interests in the telecommunications industry include a poor network, poor handling of stakeholder interests, less attention to stakeholder interests, poor communication service, poor information dissemination, and failure to expand services. The study concluded that to improve the effective management of stakeholder communication interests in the Ghanaian telecommunications industry, stakeholders must be transparent in their operations, respect industry

rules and regulations, enforce the NCA mandates, fairness sanction stakeholders who violate industry regulations, promote consumer education, and encourage stakeholder collaboration.

Concerning communication challenges among stakeholders, particularly consumers, the study identified several communication challenges that need to be managed, including difficulty in assuming new roles, misdefining real needs and interests during communication, a lack of effective communication resources, insufficient information provision by the regulator on a timely basis, difficulty in managing the diverse expectations of all stakeholders by the regulator, and difficulties in selecting the most appropriate communication channel. The study also discovered challenges confronting key stakeholders that must be managed, such as resistance to sharing information; difficulty working with different stakeholders; difficulty providing feedback to the telecommunications regulator; the regulator's inability to provide information on a regular and timely basis; difficulty managing the regulator's diverse interests; and problems using the most appropriate communication channel. The study concluded that these challenges are related to issues concerning the regulator's functions and mandates. Concerning the effects of challenges on stakeholder communication, they are negative predictors of stakeholder communication quality. However, the actual effects of the challenges on stakeholder communication require further investigation.

In terms of improving stakeholder communication, the study posits that it is essential to devise strategies that improve communication among stakeholders in Ghana's telecommunications industry. The study discovered that these strategies are required to improve communication in the telecommunications industry. Thus, continuous engagement of all stakeholders; a clear definition of stakeholder needs and expectations; development and implementation of a stakeholder communication plan; encouragement of regular feedback among stakeholders; properly defined communication channels for all stakeholders; regular interaction to improve stakeholder relationships; determining appropriate institutional options for stakeholder engagement; promotion of stakeholder opportunism; and promotion of stakeholder opportunism should be the way forward. The study concludes that effective regulation and legislation in Ghana's telecommunications industry is a positive predictor of effective communication.

Figure 7.4: Strategic Framework for Managing Communication in the Telecommunications Industry of Ghana



Source: Author's conceptualisation (2020).

7.6 THE STUDY'S CONTRIBUTION

Based on the findings, the study's contribution to the scientific body of knowledge is divided into two primary contributions: theoretical and empirical. In general, the study makes a scholarly contribution to three dimensions: the continental context, the pragmatic telecommunications industry context, and the academic perspective (stakeholder communication management) context. In the continental context, the study's findings can be replicated in other African countries. The issues raised are very similar to those in the African economies, where communication among stakeholders is very complicated and challenging. The strategic framework, in the form of a strategic communication plan, was developed based on the data analysis outcomes and can be utilised in other African countries to improve communication among stakeholders.

7.6.1 The study's contributions to theory

First, effective theoretical and conceptual issues on telecommunications, communication and stakeholder management have been analysed. Extensive literature has been reviewed within the context of stakeholders and communication in the telecommunications industry. Though the concepts of stakeholder and communication are modified and scientifically accepted, they are not generic. The conceptual definitions of the study are unique and feasible, since they contain salient issues and dimensions on communication and stakeholder management that are relevant to the telecommunications industry in developing countries such as Ghana. The study's theoretical concepts such as effective communication strategy, communication channels, communication forms, stakeholder identification and stakeholder interest are important theoretical foundations for further studies within African and other developing countries, the global telecommunications industry, and the discipline of stakeholder communication management.

Second, the study has contributed to the theory by developing a standardised scale for communication strategies and efficient and effective management of stakeholder communication interests in the telecommunications industry. The study effectively modified previously developed and tested scales on communication strategies and the effective management of stakeholder communication interests to suit the context of the telecommunications industry in developing

countries. However, these scales are unique in that the study has modified and added new dimensions and indicators to communication strategies and the efficient and effective management of stakeholder communication interests. The scales were developed looking at the current happenings in the global and Ghanaian telecommunications industry. The scales developed on communication strategies and effective management of stakeholder communication interests, will help improve communication in the global, Africa, and Ghana's telecommunications industry. The scales have passed a thorough reliability test, and they have been proven to be reliable. It increases the ability of the scales to be adopted and applied to improve communication strategies and to effectively manage stakeholder communication interests in other sectors of the economy and other African countries.

Third, a feasible strategic framework was designed. The strategic framework was based on the empirical data and results generated by the study. All the dimensions of stakeholder communication interests were assessed in the framework. The study utilised a holistic approach to analyse the communication strategies in the telecommunications industry. To the best of the researcher's knowledge, the framework is the first of its kind and can be applied to improve stakeholder communication and efficient and effective communication interests of stakeholders in any industry and country.

The construction of the eventual strategic communication framework for stakeholder communication interests in the Ghanaian telecommunications industry is another theoretical contribution to the scientific body of knowledge. In the strategic communication framework, all relevant stakeholder groups, required to promote quality communication in the Ghanaian telecommunications industry, are captured and assessed. The processes for effective communication among stakeholders are also taken into consideration.

7.6.2 Contribution to empirical literature

An initiative introduced in the study aims to identify indicators of communication strategies in telecommunications from the perspective of consumers and key stakeholders. The adequacy and extensiveness of the items on the various indicators of communication strategies are revealing and can serve as the foundation for further research in African countries and the global telecommunications industry.

The comparison between the views of consumers and key stakeholders on the various indicators of communication interests, also creates a platform for the assessment and evaluation of the various indicators of communication interests, efficient and effective management of stakeholder communication interests, stakeholder communication challenges, and means of improving stakeholder communication interests. The results are important, as many consumers and key stakeholders regard the indicators used to assess the study's objectives as significant. The study has also added another dimension to the literature on communication by assessing the communication issues related to consumers and stakeholders in the global telecommunications sector.

Identifying indicators for groups involved in effectively managing communication interests is relevant. These groups play an important role in the telecommunications industry, especially improving communication among stakeholders. The findings on the communication interests of stakeholders are also relevant to the empirical literature. The various challenges on stakeholder communication interests assessed in the study lay a perfect foundation for further studies on the impact of these challenges on communication interest management in the global, African, and Ghanaian telecommunications industries. The study also serves as a guide to further research on stakeholder communication management in other industries to improve communication among all stakeholders, including consumers.

7.7 POLICY IMPLICATIONS AND RECOMMENDATIONS

The telecommunications industry of Ghana has contributed significantly to the nation's development. Therefore, this makes it necessary to identify the communication interests of stakeholders in the industry and to define appropriate means to satisfy these interests. The communication challenges identified present a significant threat to effective communication in the Ghanaian telecommunications industry. Therefore, every possible measure must be taken to mitigate the effects of these challenges.

The Ministry of Communications and the National Communications Authority must put in place mechanisms that will ensure effective communication among all relevant stakeholders in the telecommunications industry. It includes enacting and enforcing legislation that promotes the smooth flow of communication among all stakeholders in the industry. Appropriate sanctions should be meted out to any stakeholder that breaches regulatory and policy measures on effective communication. With almost all the respondents indicating that the National Communications Authority plays a vital role in promoting effective communication in the Ghanaian telecommunications industry, the study proposes that the National Communications Authority must streamline its operations and functions to increase stakeholder participation and consultation in the industry. Proper streamlining of the activities in the industry will create a conducive environment for all stakeholders to effectively communicate with and among each other. Provision of feedback to the regulator is difficult for many stakeholders. Hence, the development and implementation of innovative measures by the Ministry of Communications and the National Communications Authority to minimize the bureaucratic processes of receiving and disseminating information to and from stakeholders, especially consumers, is necessary. The Ministry of Communications and the National Communications Authority must compel all the telecommunications service providers to streamline their operations to provide frequent, timely, comprehensive and reliable information to consumers and key stakeholders in the telecommunications industry.

There is poor information sharing, particularly between consumers and key stakeholders in the Ghanaian telecommunications industry. It is recommended that there must be a conscious effort

from the telecommunications service providers, Ministry of Communications, and National Communications Authority to create quality public education and an awareness campaign. This campaign must be able to whip up the sentiments of stakeholders in the industry. The campaign must focus on building the capacities of stakeholders, especially consumers, to effectively identify their communication interests and those of other stakeholders in the telecommunications industry. It is recommended that a careful assessment of the various stakeholders be carried out to determine their communication needs and interests. Therefore, feasibility studies must be conducted, led by the National Communications Authority and the telecommunications service providers. Most consumers of telecommunications services in Ghana are not well educated. Hence the language and information used in the public education and awareness campaign must be clear, simple and comprehensible to the stakeholders.

The study indicates that most communication in the telecommunications industry of Ghana fail because there is no proper strategic communication plan for stakeholders, especially for the telecommunications service providers. The National Communications Authority, in collaboration with the telecommunications service providers, should develop a strategic communication plan that factors in the communication needs of consumers and key stakeholders. The communication plan should be robust and address all the challenges in the communication processes. The ability to develop a feasible strategic communication plan for the stakeholders will positively impact the efficient and effective management of communication among the stakeholders.

The strategic communication plan should also have a built-in mechanism that enables all the telecommunications service providers to create a common platform to communicate with other stakeholders. The National Communications Authority should supervise this platform. The common platform should be designed and equipped to generate reliable and timely information from other stakeholders and promote the dissemination of quality and reliable information to other stakeholders. The strategic communication plan should assess the stakeholders' communication interests and mechanisms to satisfy the communication needs effectively.

Also, a strategic communication plan should be developed to improve communication strategies among stakeholders in the telecommunications industry. This communication plan should improve

the adoption and implementation of awareness creation, relevant operational information, appropriate feedback, regular consultations, promotion of stakeholder alignment, direct communication and use of public information systems.

Moreover, training and education are some of the major measures that the study recommends to improve communication in the Ghanaian telecommunications industry. Interaction with stakeholders in the industry revealed inadequate professional communication experts in the industry to promote efficient and effective communication among the stakeholders, especially consumers. Most of the communication staff of the telecommunications service providers are amateur marketing personnel recruited to receive complaints and liaise with stakeholders. Even managers who deal directly with the regulators in the industry are marketing and engineering staff.

Therefore, it is recommended that innovative measures be put in place by the telecommunications service providers to train and educate more staff and recruit professional communication staff. The study recommends that the telecommunications service providers, in collaboration with the National Communication Authority, sign a memorandum of understanding with the Ghana Telecom University, the School of Communication at the University of Ghana and other universities offering communication studies to intensify the training of communication experts for the industry.

In most instances, admission to these universities is based on academic qualifications, which must be demystified by admitting mature people who have worked for more than five years in the communication departments of the National Communications Authority and the telecommunications service providers. Such staff could pursue their training within a shorter duration compared to regular students who must be trained for four years. It is suggested that working staff must spend at least two years receiving education on stakeholder communication in tertiary institutions. There is also a need for all offices of the National Communications Authority and the telecommunications service providers to be upgraded to have training units to provide on-the-job training for staff on communication. The training is required because most of the offices of the National Communications Authority and the telecommunications service providers have existing infrastructure that could be reconfigured to suit training needs. The National

Communications Authority and the telecommunications service providers could also hire the services of seasoned communication experts to offer periodic communication training to staff whose functions relate to communication with stakeholders in the industry. It is recommended that such training be organized twice a year.

The use of social media and other electronic means of communication has become common among many consumers. The National Communications Authority and other regulatory agencies, such as the Environmental Protection Agencies and the Ghana Atomic Energy Commission, should take full advantage of the increased use of social media among consumers to disseminate policies and regulatory information to stakeholders. The complaint procedure of the National Communications Authority is cumbersome, driving many stakeholders away from communicating with the National Communications Authority. The cumbersome procedures could be reduced by creating social media platforms to receive stakeholders' complaints and information and also help minimize stakeholders' stress when communicating with stakeholders, especially consumers. The use of social media platforms is a common practice in many advanced countries, and its implementation in Ghana is long overdue.

7.8 LIMITATIONS OF THE STUDY

Since Accra is Ghana's capital, most stakeholders are in the Greater Accra Region; the qualitative data were collected from key stakeholders in Accra. Moreover, consumers were selected from the Greater Accra Region for the quantitative study. However, the telecommunications industry's operations cut across all of Ghana's regions. Hence selecting only stakeholders from the Greater Accra Region made it extremely important to interpret the findings with caution because the views of the key stakeholders and consumers from other parts of the country may differ because of geographical, cultural and language settings and other characteristics. Again, qualitative findings cannot be generalized and are specific to the participants interviewed.

Moreover, consumer communication strategies and interests are assessed based on consumers' personal experiences and views, increasing the responses' subjective nature. Fortunately, scales

used in assessing stakeholder communication interests and communication strategies have been widely accepted as valid and scientific measurements.

7.9 SUGGESTIONS FOR FURTHER RESEARCH

Based on the findings, the study suggests the following to guide further studies:

Further research should be conducted to investigate the effects of effective communication strategies on the overall performance of the telecommunications industry.

Further studies also need to be carried out to explore innovative ways to improve communication strategies and effective management of stakeholder communication interests in the telecommunications industry.

Studies can be conducted on why consumers find it difficult to communicate with other stakeholders in the telecommunications industry.

There are differences in the views of consumers and key stakeholders on the various indicators used to assess communication interests and communication effectiveness in the telecommunications industry of Ghana. Therefore, further examination is required.

Further studies can be conducted to investigate why challenges exist in effective communication in the telecommunications industry of Ghana.

7.10 CONCLUSION

Stakeholders have different communication interests in the telecommunications industry of Ghana, which must be carefully identified, assessed and addressed to promote tranquillity, revenue mobilization, profitability, growth and development of the industry. Even though the effective and conscious management of stakeholders' communication interests increases the operational expenditure of stakeholders, especially key stakeholders such as the telecommunications service

providers and the National Communications Authority, it has long-term positive effects on the operations of the key stakeholders.

In the research, it was found that there was no significant difference between the views of consumers and other key stakeholders on the management of stakeholders' communication interests in the Ghanaian telecommunications industry. The stakeholders regard the management of communication interests as vital to the survival of the telecommunications industry in Ghana. However, the analysis of the individual indicators revealed differences in the views of consumers and key stakeholders. The differences were mainly in the individual items indicating that both consumers and key stakeholders regard the communication interests as necessary. However, some significant challenges in the industry remain that confront the effective management of the communication interests of stakeholders in the Ghanaian telecommunications industry.

Communication strategies among the stakeholders in the Ghanaian telecommunications industry

The study can conclude that the telecommunications industry in Ghana is significant, resulting in diverse stakeholder groups with different communication interests in the industry. Concerning communication strategies in the Ghanaian telecommunications industry, the empirical findings indicate that there was mutual agreement among consumers and key stakeholders that communication strategies are very important in the management of the communication interests of stakeholders.

Both consumers and key stakeholders were aware of communication strategies in the Ghanaian telecommunications industry. Eight main items were assessed regarding communication strategies, including Awareness Creation (AC), Traffic Communication (TC), Relevant Operational Information (ROI), Implementation and Monitoring (IM), Appropriate Feedback (AF), Regular Consultations (RC), Use of Public Information System (PIS) and Promotion of Stakeholder Alignment (PSA). It can be concluded that among all the eight communication strategy items under consideration, it was revealed that consumers regard IMM, ROI and PIS as the major communication strategies in the Ghanaian telecommunications industry.

Moreover, key stakeholders indicated that the AC, IM and RC are the most important communication strategies in the industry. Consumers and key stakeholders regard the National Communication Authority as the main institution that must formulate, implement and monitor the operations of telecommunications service providers. On the level of the key stakeholders, chamber dialogue, education and information sharing, training and development, and the public information system appear to be critical for a communication strategy among telecommunications service providers. The study can also conclude that regular consultation and feedback among stakeholder groups in the telecommunications industry is important as stakeholders expect to be promptly and frequently consulted on issues in the industry.

It can also be concluded that the National Communications Authority is responsible for mediating between the telecommunications service providers and the consumers in the industry. In proving communication strategies among the stakeholders in the telecommunications industry of Ghana, the empirical findings pointed out that face-to-face dialogue, official letters, phone calls and emails, media (print, radio, television and online), public lectures, public forums, consumer outreach, and community meetings are key means of communication among the stakeholders.

Communication interests of stakeholders in the telecommunications industry of Ghana

The communication interests of telecommunications stakeholders were assessed. Regarding the identification and investigation of the communication interests of stakeholders, the study indicates that it is important to ensure smooth communication among the stakeholders in the telecommunications industry. The study's empirical findings indicate that consumers and key stakeholders are fully aware of their communication interests in the industry. It can be concluded that most stakeholders fully appreciate the existence of stakeholder communication interests. Regarding areas of stakeholder communication interests' awareness that were measured, the study indicates that quality customer care, feedback on information and improved network service are positive predictors of communication interests. However, they may not be positive predictors of the entire communication process in the telecommunications industry.

Consumers and key stakeholders seem to be interested in managing their communication interests in the telecommunications industry. On the aspect of management of stakeholders' communication interests in the telecommunications industry, it can be concluded that all the stakeholders perceive the management of communication interests to be crucial in the industry. On the part of the key stakeholders, the main groups involved in communication interests management identified by the study's empirical findings in descending order, include the telecommunications service provider, the National Communications Authority, consumers and the Ministry of Communications. Consumers perceive the following as the main groups involved in the effective management of communication interests of stakeholders in descending order: telecommunications service providers, consumers, the Ministry of Communications and the National Communications Authority.

Effective management of communication interests is associated with the positive communication process in the telecommunications industry. However, key stakeholders and consumers perceive that their communication interests are not effectively managed by the groups responsible for this in the industry. It is largely attributed to the poor communication between the consumers, key stakeholders, and the responsible institutions or agencies. The responsible groups have not taken a keen interest in ensuring effective management of stakeholder communication interests in the industry. There are challenges confronting the effective management of stakeholder communication interests in the telecommunications industry, such as a poor network, poor handling of stakeholder interests, less attention to stakeholder interest, poor communication service, poor information dissemination and failure to expand services. To improve the effective management of stakeholder communication interests in the Ghanaian telecommunications industry, stakeholders must be transparent in their operations, respect the rules and regulations in the industry, enforce the mandates of the National Communication Authority, unbiasedly sanction stakeholders that go against regulations in the industry, promote consumer education and encourage stakeholder collaboration.

Stakeholder communication challenges

Regarding the communication challenges among stakeholders, it can be concluded that there are communication challenges in the Ghanaian telecommunications industry that must be managed. Areas of communication challenges identified by the consumers include difficulty in realizing new roles, misdefining real needs and interests during communication, lack of effective communication resources, inadequate information provision by the regulator on a timely basis, difficulty in managing the diverse expectations of all stakeholders by the regulator, and problems in using the most suitable communication channel.

Key stakeholders also indicate that communication is confronted by challenges such as resistance to sharing information; difficulty working with different stakeholders; difficulty in providing feedback to the telecommunications regulator; the inability of the regulator (NCA) to provide information on a regular and timely basis; difficulty in managing diverse interests of the regulator; and problems in using the most suitable communication channel. It can be concluded that most of the challenges are associated with issues related to the functions and mandates of the National Communication Authority. Regarding the effects of the challenges on stakeholder communication, it could be concluded that they are negative predictors of quality communication among stakeholders. However, the actual effects of the challenges on communication among stakeholders need further investigation.

Improving stakeholder communication

It is important to devise strategies that improve communication among stakeholders in the telecommunications industry of Ghana. To improve communication in the telecommunications industry, the empirical findings of the study indicate that the following strategies are necessary: continuous engagement of all stakeholders; a clear definition of stakeholder needs and expectations; development and implementation of a stakeholder communication plan should be the way forward; encouragement of regular feedback among stakeholders; properly defined communication channels for all stakeholders; regular interaction to improve stakeholder relationships; determining appropriate institutional options for stakeholder engagement; promotion of stakeholder ownership regarding decisions taken; and regular systems to monitor and evaluate

stakeholder interest. A conclusion can be drawn from the study that the effective application of regulations and legislation in the telecommunications industry of Ghana is a positive predictor of effective communication.

7.11 CONCLUSION TO THE THESIS

The study explores the stakeholder communication strategies that exist in a developing country's telecommunications industry. It examines how the communication interests of stakeholders in a developing country's telecommunications industry are managed. Further, the study examines how the communication challenges faced by stakeholders in a developing country's telecommunications industry are managed and finally investigates how stakeholders in a developing country's telecommunications industry can help improve stakeholder communication.

Regarding the stakeholder communication strategies that exist in a developing country's telecommunications industry, the study discovered that the telecommunications industry makes a significant contribution to Ghana's economic growth and development. Chamber dialogue, education and information sharing, training and development, and the public information system are critical for a communication strategy among telecommunications service providers at the level of key stakeholders. The study concludes that regular consultation and feedback among stakeholder groups in the telecommunications industry are essential because stakeholders expect to be consulted on industry issues on a timely and frequent basis.

Regarding the identification and investigation of the communication interests of stakeholders, the study discovered that it is important to ensure smooth communication among the stakeholders in the Ghanaian telecommunications industry. Furthermore, quality customer service, information feedback, and improved network service are all positive predictors of communication interests. They may not, however, be accurate predictors of the entire communication process in the telecommunications industry. The challenges confronting effective management of stakeholder communication interests in the telecommunications industry include a poor network, poor handling of stakeholder interests, less attention to stakeholder interests, poor communication service, poor information dissemination, and failure to expand services. The study concluded that to improve

the effective management of stakeholder communication interests in the Ghanaian telecommunications industry, stakeholders must be transparent in their operations, respect industry rules and regulations, enforce the NCA mandates, fairness sanction stakeholders who violate industry regulations, promote consumer education, and encourage stakeholder collaboration.

Concerning communication challenges among stakeholders, particularly consumers, the study identified several communication challenges that need to be managed, including difficulty in assuming new roles, misdefining real needs and interests during communication, a lack of effective communication resources, insufficient information provision by the regulator on a timely basis, difficulty in managing the diverse expectations of all stakeholders by the regulator, and difficulties in selecting the most appropriate communication channel. The study also discovered challenges confronting key stakeholders that must be managed, such as resistance to sharing information; difficulty working with different stakeholders; difficulty providing feedback to the telecommunications regulator; the regulator's inability to provide information on a regular and timely basis; difficulty managing the regulator's diverse interests; and problems using the most appropriate communication channel. The study concluded that these challenges are related to issues concerning the regulator's functions and mandates. Concerning the effects of challenges on stakeholder communication, they are negative predictors of stakeholder communication quality. However, the actual effects of the challenges on stakeholder communication require further investigation.

In terms of improving stakeholder communication, the study posits that it is essential to devise strategies that improve communication among stakeholders in Ghana's telecommunications industry. The study discovered that these strategies are required to improve communication in the industry. Thus, continuous engagement of all stakeholders; a clear definition of stakeholder needs and expectations; development and implementation of a stakeholder communication plan; encouragement of regular feedback among stakeholders; properly defined communication channels for all stakeholders; regular interaction to improve stakeholder relationships; determining appropriate institutional options for stakeholder engagement; and promotion of stakeholder opportunism should be the way forward. The study concludes that effective regulation and

legislation in Ghana's telecommunications industry is a positive predictor of effective communication.

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APPENDICES

APPENDIX 1: INTERVIEW GUIDE

MANAGING STAKEHOLDER COMMUNICATION INTERESTS

INTERVIEW GUIDE FOR KEY STAKEHOLDERS IN THE TELECOMMUNICATION INDUSTRY OF GHANA

[Demographics: Gender, Age, organization, position, years of experience in the industry]

Your knowledge of communication strategies among the stakeholders in the Ghanaian telecommunication industry

- (a) What is the contribution of the telecommunication industry of Ghana?
- (b) Who are key stakeholders in the telecommunication industry of Ghana?
- (c) What is the role of these stakeholders?
- (d) As a stakeholder, what communication strategies do you use when dealing with industrial players (eg. regulator, other stakeholders)?
- (e) As a stakeholder, what communication channel do you use when dealing with industrial players (eg. regulator, other stakeholders)?
- (f) Can you explain some of the communication strategies and channels utilized by other stakeholders when dealing with you within the industry?
- (g) Are these communication strategies effective in the management of interest of telecommunication industrial players?

Your communication interests in the Ghana telecommunication industry

- (h) What is your interest as a stakeholder in the telecommunications industry?
- (i) What are some of the communication interest areas for stakeholders within the industry (explain)?
- (j) Which people or groups are responsible in managing communication interests within the industry?

- (k) Are your communication interests being managed effectively?
- (l) What challenges evolved from the management of your communication interests by those responsible and what is the way forward?

Communication challenges faced by you as a stakeholder in the Ghanaian telecommunication industry

- (m) What are communication challenges within the industry?
- (n) As a stakeholder, can you outline some communication challenges you face in the telecommunications industry of Ghana?
- (o) What is the effect of these challenges in the management of communication interests by those responsible?
- (p) What solutions would you suggest to these challenges?

How you can assist to improve stakeholder communication in the Ghanaian telecommunications industry?

- (q) What are some of the ways through which stakeholder communication can be improved in the telecommunications industry in Ghana?
- (r) What should be done to effectively manage stakeholder communication interests within the industry?
- (s) As a stakeholder, what strategies can be adopted to improve effective management of communication interests within the industry?
- (t) As a stakeholder, what communication channels can be adopted to improve effective management of communication interests within the industry?

,

Thank You

APPENDIX 2: QUESTIONNAIRE

MANAGING STAKEHOLDER COMMUNICATION INTERESTS

QUESTIONNAIRE FOR STAKEHOLDERS IN THE TELECOMMUNICATION INDUSTRY OF GHANA

I, Abed-nego Bandim is a PhD-student in Communication Management at the University of Pretoria. This questionnaire has been designed to enable me to complete research on the topic: Managing stakeholder communication interests in the Ghanaian telecommunication industry. The target group of the study is all stakeholder groups within the telecommunication industry of Ghana. I kindly require your assistance to effectively complete this questionnaire as part of the research. The information is for academic purposes only and maximum confidentiality is guaranteed. Thank you for your attention and time.

SECTION A: DEMOGRAPHICS

This section seeks to gather some demographic data for the research. Kindly select by checking (✓) all that apply

A1: Age of respondent (years)

a. 20 or younger [] b. 21-30 [] c. 31-40 [] d. 41-50 [] e. 51-60 [] f. Above 60 []

A2: Gender

a. Male [] b. Female []

A3: Educational level of respondents

a. Diploma/HND [] b. First degree [] c. Masters degree [] d. PhD [] e. Other (specify).....

A4: Marital status

a. Single [] b. Married [] c. Divorced [] d. Widowed [] e. Other (Specify).....

A5: How long have you been in the telecommunications industry

a. Less than a year [] b. 1-3 years [] c. 4-6 years [] d. 7-9 years [] e. 10 years + []

A6: What is your connection to the telecommunications industry?

- (a) Policy maker [] (b) Legislature [] (c) Regulator [] (d) Network service provider []
 (e) Telecommunication consumer/subscriber [] (f) The telecommunication chamber [] (g)
 Academic expert [] (h) Consumer protection agency/civil society group []

SECTION B

7. Your knowledge of communication strategies among the stakeholders in the Ghanaian telecommunication industry

This section seeks to understand communication strategies among the stakeholders in the Ghanaian telecommunication industry. Please indicate the kind of communication strategy employed among stakeholders within the telecommunications industry of Ghana using the scale by marking (√) the right column of the table.

1 = Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree; (A) 5 = Strongly Agree (SA)

Communication strategies	SD	D	N	A	SA
Awareness creation					
B1: I am aware of and understand the operations of the regulator within the telecommunication industry of Ghana					
B2: I am aware and understand the procedures for addressing stakeholder concerns in the telecommunication industry of Ghana					
B3: I am aware and understand transparency and inclusive approaches for addressing stakeholder interest in the telecommunication industry of Ghana					
Traffic communication					
B4: I know the existence of traffic safety communication in our telecommunication operations					
B5: I understand the operations of traffic safety communication in our telecommunication operations					
B6: I understand that the traffic safety communication was developed to enhance healthy relationships and mitigate risk within our operations					
Relevant operational information					
B7: I believe the telecommunication regulator delivers operational information to all stakeholders at the right time					

B8: I believe information flow within the telecommunication industry through the regulator is gender-sensitive and culturally-appropriate					
B9: I believe there is always a regular two-way flow of information among stakeholders within the telecommunication industry of Ghana					
Implementation and monitoring					
B10: I believe the telecommunication regulator is responsible for the implementation and monitoring of stakeholder communication					
B11: I believe the telecommunication regulator ensures proper information dissemination among stakeholders					
B12: I believe there exist regular contact with all interested stakeholders by the regulator within the telecommunication industry of Ghana					
Appropriate feedback					
B13: I know the required channels through which stakeholders can provide feedback on issues previously communicated by the regulator					
B14: I am aware of regular meetings among stakeholders which ensures that sufficient feedback are provided					
B15: I believe the regulator provides accurate feedback in a timely manner to all interested stakeholders					
Regular consultations					
B16: I believe stakeholders are consulted regularly by the telecommunication regulator					
B17: I believe stakeholder engagement occurs timely and in regularly					
B18: I believe stakeholders are part of all major decisions that are taken within the telecommunication industry of Ghana					
Use of public information systems					
B19: I believe regular publications on industrial progress are made by the regulator using the most appropriate communication channels					
B20: I believe the traditional media is the major public information system used by the regulator					
B21: I believe the regulator often develops key information materials for distinct stakeholder groups					
Promotion of stakeholder alignment					
B22: I am aligned to operational activities of the telecommunication industry of Ghana					
B23: My expectations are managed effectively by the telecommunication industry regulator					
B24: I believe my interest is aligned with the objectives of the telecommunication industry regulator					

8. As a stakeholder, can you outline some of the communication strategies and channels that are used by you in the Ghanaian telecommunications industry? -----

SECTION C

9. Your communication interests in the Ghana telecommunications industry

(i) Are you aware of communication interests of stakeholders within the telecommunication industry of Ghana?

(a) Yes [] (b) No []

(ii) If “Yes” can you outline your communication interests areas as a stakeholder in the telecommunication industry -----

(iii) Are your communication interests being managed effectively?

(a) Yes [] (b) No []

(iv) If Yes, how can your communication interests as a stakeholder be managed better? -----

(v) Who or which group are responsible for the effective management of your communication interests? (tick all that apply)

(a) Regulator [] (b) Network Service Provider [] (c) Telecommunication consumer/subscriber []
 (d) The Ministry of Communications (e) Others (specify) -----

(vi) Is your communication interests effectively being managed by those responsible?

(a) Yes [] No []

(vii) What challenges evolved from the management of your communication interests by those responsible and what is the way forward -----

SECTION D

10. Communication challenges faced by you as a stakeholder in the Ghanaian telecommunications industry

Please indicate the communication challenges faced by you as a stakeholder in the telecommunications industry of Ghana by using the scale below and marking (√) in the right column of the table.

1 = Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree; (A) 5 = Strongly Agree (SA)

Stakeholder communication challenges	SD	D	N	A	SA
D1: I face resistance to share information					
D2: I have difficulty in realising my new roles in the evolving telecommunication industry					
D3: I sometimes mis-define my real needs and interests during communication					
D4: It is difficult working with different stakeholders with different views					

D5: I have problem with the use of some modern communication channels, for example social media, emails, et cetera					
D6: Providing feedback to the telecommunication regulator is sometimes difficult for me due to work schedules and pressure					
D7: Lack of resources in ensuring effective communication also restrain me from providing feedback on time					
D8: I believe the regulator is unable to in provide information on a regular and timely basis and that is a challenge for me					
D9: The regulator has difficulty in managing the diverse expectations of all stakeholders					
D10: I have problem with regards the use of the most suitable communication channel when dealing with other stakeholders					

11. As a stakeholder, can you outline some communication challenges you face in the telecommunication industry of Ghana? -----

12. Please can you suggest solutions to these challenges -----

SECTION E

13. How you can assist to improve stakeholder communication in the Ghanaian telecommunication industry.

Please indicate how you can assist in improving stakeholder communication in the telecommunication industry of Ghana by using the scale below and by marking (√) in the right column of the table.

1 = Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree; (A) 5 = Strongly Agree (SA)

Improving communication among stakeholders	SD	D	N	A	SA
E1: The continuous engagement of all stakeholders					
E2: Clear definition of stakeholder needs and expectations					
E3: The development and implementation of a stakeholder communication plan should be the way forward					
E4: The encouragement of regular feedback among stakeholders					
E5: Properly defined communication channels for all stakeholders					
E6: Regular interaction to improve stakeholder relationships is very important					
E7: Determining appropriate institutional options for stakeholder engagement					
E8: Building stakeholder consensus using the regular involvement in decision making					
E9: The development of an effective two-way communication process by the regulator					
E10: The promotion of stakeholder ownership regarding decisions taken					
E11: Regular systems to monitor and evaluate stakeholder interest					

14. As a stakeholder can you outline some of the ways through which stakeholder communication can be improved in the telecommunication industry in Ghana? -----

APPENDIX 3: QUESTIONNAIRE

MANAGING STAKEHOLDER COMMUNICATION INTERESTS

QUESTIONNAIRE FOR CONSUMERS IN THE TELECOMMUNICATIONS INDUSTRY OF GHANA

I, Abed-nego Bandim is a PhD-student in Communication Management at the University of Pretoria. This questionnaire has been designed to enable me to complete a research on the topic: Managing stakeholder communication interests in the Ghanaian telecommunication industry. The target group of the study is all stakeholder groups within the telecommunication industry in Ghana. I kindly require your assistance to effectively complete this questionnaire as part of the research. The information is for academic purposes only and maximum confidentiality is guaranteed. Thank you for your attention and time.

SECTION A: DEMOGRAPHICS

This section seeks to gather some demographic data for the research. Kindly select by checking (✓) all that apply

A1: Age of respondent (years)

a. 20 or younger [] b. 21-30 [] c. 31-40 [] d. 41-50 [] e. 51-60 [] f. Above 60 []

A2: Gender

a. Male [] b. Female []

A3: Educational level of respondents

a. JHS/SHS/VOC [] b. Diploma/HND [] c. First degree [] d. Masters degree [] e. PhD []
f. Other (specify).....

A4: Marital status

a. Single [] b. Married [] c. Divorced [] d. Widowed [] e. Other (Specify).....

A5: How long have you been using mobile phone?

a. Less than a year [] b. 1-3 years [] c. 4-6 years [] d. 7-9 years [] e. 10 years + []

A6: Which of the following stakeholders are you connected to within the telecommunication industry of Ghana?

- (a) Policy maker [] (b) Legislator [] (c) Regulator [] (d) Network service provider []
 (e) Telecommunication consumer/subscriber [] (f) The telecommunication chamber [] (g) Academic expert [] (h) Consumer protection agency/civil society group [] (*Tick all that applies*)

A7: Which mobile network(s) do you use? (*State all*) -----

SECTION B

7. Your knowledge of communication strategies among the consumers in the Ghanaian telecommunications industry

This section seeks to understand communication strategies among the consumers (as stakeholders) in the Ghanaian telecommunications industry. Please indicate the kind of communication strategy employed among consumers within the telecommunications industry of Ghana using the scale by marking (√) the right column of the table.

1 = Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree; (A) 5 = Strongly Agree (SA)

Communication strategies	SD	D	N	A	SA
Awareness creation					
B1: I am aware of and understand the operations of National Communication Authority (NCA) within the telecommunications industry of Ghana					
B2: I am aware and understand the procedures for addressing consumer concerns in the telecommunications industry of Ghana					
B3: I am aware and understand transparency and inclusive approaches for addressing consumer interest in the telecommunications industry of Ghana					
Traffic communication					
B4: I know the existence of traffic safety communication in telecommunications operations					

B5: I understand the operations of traffic safety communication in telecommunications operations					
B6: I understand that the traffic safety communication was developed to enhance healthy relationships and mitigate risk encountered by consumers within the telecommunications industry					
Relevant operational information					
B7: I believe telecom operators delivers operational information to all consumers at the right time					
B8: I believe information flow from telecom operators through the NCA is gender-sensitive and culturally-appropriate					
B9: I believe there is always a regular two-way flow of information among stakeholders within the telecommunications industry of Ghana					
Implementation and monitoring					
B10: I believe the NCA is responsible for the implementation and monitoring of stakeholder (telecom operators) communication					
B11: I believe the NCA ensures proper information dissemination among stakeholders					
B12: I believe there exist regular contact with all interested stakeholders by NCA within the telecommunications industry of Ghana					
Appropriate feedback					
B13: I know the required channels through which consumers can provide feedback on issues previously communicated by telecom operators					
B14: I am aware of regular meetings among stakeholders which ensure that sufficient feedback is provided					
B15: I believe NCA provides accurate feedback in a timely manner to all interested stakeholders					
Regular consultations					
B16: I believe stakeholders(consumers) are consulted regularly by the telecommunications regulator (NCA)					
B17: I believe consumer engagement occurs timely and regularly					
B18: I believe consumers are part of all major decisions that are taken within the telecommunication industry of Ghana					
Use of public information systems					
B19: I believe regular publications on industrial progress are made by the NCA using the most appropriate communication channels					
B20: I believe the traditional media is the major public information system used by the NCA					
B21: I believe the NCA often develops key information materials for distinct stakeholder groups					
Promotion of stakeholder alignment					
B22: I am aligned to operational activities of the telecom operators of Ghana					
B23: My expectations are managed effectively by telecom operators through the NCA					

B24: I believe my interest is aligned with the objectives of the telecom operator through the NCA					
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8. As a consumer can you outline some of the communication strategies and channels that are used by telecom operators in dealing with you? -----

SECTION C

9. Your communication interests in the Ghana telecommunication industry

(i) Are you aware of communication interests of consumers (as stakeholders) within the telecommunication industry of Ghana?

(a) Yes [] (b) No []

(ii) If “Yes” can you outline your communication interests areas as a consumer in the telecommunication industry -----

(iii) Are your communication interests being managed effectively by telecom operators through NCA?

(a) Yes [] (b) No []

(iv) If Yes, how can your communication interests as a consumer be managed better? -----

(v) Who or which group are responsible for the effective management of your communication interests? (tick all that apply)

- (a) Regulator [] (b) Network Service Provider [] (c) Telecommunication consumer/subscriber [] (d) The Ministry of Communications (e) Others (specify) -----

(vi) Is your communication interests effectively being managed by those responsible?

- (a) Yes [] No []

(vii) What challenges evolved from the management of your communication interests by those responsible and what is the way forward -----

SECTION D

10. Communication challenges faced by you as a consumer (as stakeholder) in the Ghanaian telecommunication industry

Please indicate the communication challenges faced by you as a consumer (as stakeholder) in the telecommunication industry of Ghana by using the scale below and marking (√) in the right column of the table.

1 = Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree; (A) 5 = Strongly Agree (SA)

Stakeholder communication challenges	SD	D	N	A	SA
D1: I face resistance in sharing information to service providers					
D2: I have difficulty in realising my new roles as a consumer in the evolving telecommunication industry					

D3: I sometimes mis-define my real needs and interests during communication with service providers or other stakeholders					
D4: It is difficult working with different telecom operators with different views					
D5: I have a problem with the use of some modern communication channels, for example social media, emails, et cetera					
D6: Providing feedback to the telecom operators is sometimes difficult for me due to work schedules and pressure					
D7: Lack of resources in ensuring effective communication also restrain me from providing feedback on time					
D8: I believe telecom providers through NCA are unable to provide information on a regular and timely basis and that is a challenge for me					
D9: Telecom providers through NCA have difficulty in managing the diverse expectations of consumers					
D10: I have a problem with regard to the use of the most suitable communication channel when dealing with other stakeholders (especially telecom operators)					

11. As a consumer, can you outline some communication challenges you face in the telecommunication industry of Ghana? -----

12. Please can you suggest solutions to these challenges -----

SECTION E

13. How you can assist to improve stakeholder communication in the Ghanaian telecommunication industry.

Please indicate how you can assist in improving stakeholder communication in the telecommunication industry of Ghana by using the scale below and by marking (√) in the right column of the table.

1 = *Strongly Disagree (SD)*; 2 = *Disagree (D)*; 3 = *Neutral (N)*; 4 = *Agree (A)* 5 = *Strongly Agree (SA)*

Improving communication among stakeholders	SD	D	N	A	SA
E1: The continuous engagement of all stakeholders					
E2: Clear definition of stakeholder needs and expectations					
E3: The development and implementation of a stakeholder communication plan should be the way forward					
E4: The encouragement of regular feedback among stakeholders					
E5: Properly defined communication channels for all stakeholders					
E6: Regular interaction to improve stakeholder relationships is very important					
E7: Determining appropriate institutional options for stakeholder engagement					
E8: Building stakeholder consensus using the regular involvement in decision making					
E9: The development of an effective two-way communication process by the NCA					
E10: The promotion of stakeholder ownership regarding decisions taken					
E11: Regular systems to monitor and evaluate stakeholder interest					

14. As a consumer can you outline some of the ways through which stakeholder communication can be improved in the telecommunication industry in Ghana? -----

THANK YOU

APPENDIX 4: LETTER OF INTRODUCTION

10th May, 2018

The Director General
National Information Technology Agency (NITA)
Accra - Ghana

Dear Sir,

REQUEST FOR CONSENT LETTER TO UNDERTAKE AN ACADEMIC RESEARCH

1. Request

The National Information Technology Agency (NITA) is kindly being requested to participate in a research study conducted by (Mr. Abed Bandim) from the University of Pretoria (UOP). (Please find attached for your perusal research title registration document from the university).

Therefore, a consent or approval letter is being requested from your organisation in order to carry out the research. This will enable the researcher and his associates to go in and out of your office premises to conduct their work.

2. Research Topic

The research is titled “Managing Stakeholder Communication interests in the Ghanaian Telecommunications Industry”.

3. Research Aim/Objective

The purpose of this study is to seek ways to improve communication between social marketing practitioners, policy makers, the regulator, telecommunication operators among others. It will also provide a wide perspective for describing and evaluating the overall stakeholder interest in the telecommunication industry.

The objective is to identify the challenges facing the stakeholders of telecommunication industry in Ghana.

It is also to create a fair platform for consistent, reliable, clear and a managed communication resource for all stakeholders and design a well-planned feedback mechanism and strategic communication approach to manage the needs of stakeholders.

This study will contribute to the researcher’s completion of his thesis.

4. Research Procedures

This study consists of a survey in a form of one-on-one interviews and questionnaire that will be administered to selected public and private organisations and individual participants

across the country. You will be requested to provide answers to a series of questions related to identifying the communications challenges facing the stakeholders of telecommunication industry in Ghana.

5. Time Required

Participation in this study will require about twenty (20) minutes of your time.

6. Risks

The investigator does not perceive more than minimal risks from your involvement in this study (that is, no risks beyond the risks associated with everyday life).

7. Benefits

Potential benefits from participation in this study include:

The research will be significant in seeking ways to improve communication between social marketing practitioners, policy makers, the regulator, telecommunication operators and other stakeholders.

Particularly to the regulators of Ghana's mobile networks, the findings and results that will be reported in this study will provide a wide perspective for describing and evaluating the overall stakeholder interest in the telecommunication industry.

This will help to meet the needs of consumer's/end users who actively use electronic medium for research, communication, wireless connections for academic and business purposes.

This research paper will also add to existing knowledge for students and a reference library for other researchers.

8. Confidentiality

The results of this research will be presented at conferences, workshops etc. While individual responses are obtained and recorded anonymously and kept in the strictest confidence, aggregate data will be presented representing averages or generalizations about the responses as a whole.

No identifiable information will be collected from the participant and no identifiable responses will be presented in the final form of this study. All data will be stored in a secure location accessible only to the researcher. The researcher retains the right to use and publish non-identifiable data. At the end of the study, all records will be destroyed

9. Participation & Withdrawal

Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind. However, once your responses have been submitted and anonymously recorded you will not be able to withdraw from the study.

10. Questions about the Study

If you have questions or concerns during the time of your participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

Researcher

Mr. Abed Bandim
Dept. of Communication Management
University of Pretoria
abandim@yahoo.com

Supervisor/Promotor

Prof. AF. Grobler
Dept. of Communication Management
University of Pretoria



Abed A. Bandim

0241150549

CC Head Student Affairs

*In case of reply the **number and date** of this letter should be **quoted***

Tel No: +233-(0)30-266-6465
Fax No: +233-(0)30-266-7114
Digital Address: GA-079-0539



Republic of Ghana

MINISTRY OF COMMUNICATIONS
P. O. BOX M.38
ACCRA

My Ref. No: HA106/165/01F

21ST May, 2018

Your Ref. No:

MR. ABED BANDIM
DEPT. OF COMMUNICATION MANAGEMENT
UNIVERSITY OF PRETORIA
SOUTH AFRICA

RE: REQUEST FOR CONSENT LETTER TO UNDERTAKE AN ACADEMIC RESEARCH

We acknowledge with thanks receipt of your letter dated 10th May, 2018 on the above subject.

Please be informed that the Ministry has no objection to your request and you are to liaise with the Deputy Director, RSIM for the conduct of the research.

Thank you.

ABUKARI MAHAMA NUHU
DEPUTY DIRECTOR, RSIM
FOR: MINISTER

5th & 6th Floor, Ministry of Communications Office Complex, Abdul Diouf Road, Ridge Accra



NATIONAL COMMUNICATIONS AUTHORITY (NCA), GHANA

May 18, 2018

NCA/HR/UP/AB/18

Abed Bandim
National Communications Authority
Airport City, Accra

Dear Sir,

RE: REQUEST FOR APPROVAL/CONSENT TO UNDERTAKE AN ACADEMIC RESEARCH

We refer to your memo dated May 10, 2018, seeking approval from the Authority to enable you conduct your academic research on the topic **"Managing Stakeholder Communication Interest in the Ghanaian Telecommunications Industry"**.

We wish to inform you that the Authority has approved your request and given its consent to gather data from the Authority.

We believe there are immense contributions to be derived from this study as the impact would shape the way Stakeholders' interest are managed in Ghana's Telecommunications space.

In this regard, we assure you of our support and any courtesies you may require as you administer the questionnaire across the organisation.

We wish you success in your academic pursuits.

Yours Faithfully,

CHARLES AMOAH WILSON
AG.HEAD, HUMAN RESOURCE
FOR: DIRECTOR GENERAL

cc: Director General
Deputy Director General, MO

Tel: (0302) 664697 / 664698 / 662465
667524 / 0289673960 / 1 / 2
Fax: 233 (0302) 662690
Email: info@epa.gov.gh



Environmental Protection Agency

P. O. Box MB 326
Ministries Post Office
Accra

Website: <http://www.epa.gov.gh>

Our Ref: 167/253/01

21st May, 2018

Prof. AF. Grobler
Department of Communication Management
University of Pretoria
South Africa

Dear Sir,

RE: REQUEST FOR CONSENT LETTER UNDERTAKE AN ACADEMIC RESEARCH

I refer you to your letter dated 10th May, 2018 on the above subject-matter.

We are pleased to inform you that the Agency has decided to give its consent and ready to assist Mr. Abed Bandim carry out his research on the topic "Managing Stakeholder Communication Interest in the Ghanaian Telecommunication Industry".

Yours faithfully,

**CHARLES K. AMEVOR
(DEPUTY EXECUTIVE DIRECTOR/F & A)
FOR: EXECUTIVE DIRECTOR**

Cc: Mr. Abed Bandim
National Communications Authority
Accra

In case of reply the
number and the date of this
letter should be quoted

Telephone Accra: 0302 - 400303, 400310, 401343
Cables & Telegrams GHANATOM
Telex: 2554 GAEC GH
Fax: 233-0302-400807

AG. 35/SF.6/VOL.II/58

Our Ref:.....

Your Ref:.....



REPUBLIC OF GHANA

GHANA ATOMIC ENERGY COMMISSION

P. O. BOX LG 80
Legon - Accra

21st May, 2018

The Chair,
Post Graduate Committee
Faculty of Economical and Management Studies
University of Pretoria
South Africa
Attn: Prof A. F. Grobler

Dear Sir,

CONSENT LETTER TO PARTICIPATE IN ACADEMIC RESEARCH

With reference to your letter dated 10th May, 2018 regarding research to be conducted by **Mr. Abed Bandim**. I am pleased to inform you that Ghana Atomic Energy Commission (GAEC) be willing to participate in the research entitled: **Managing Stakeholder Communication Interest in the Ghanaian Telecommunication Industry**.

Kindly contact Dr. Joseph K Amoako with the questionnaire. Email: joe.amoako@gmail.com

We hope through our participation, the stated objectives of the research will be achieved.

Thank you.

Yours faithfully,

Prof Shiloh Osae
Ag. Director-General



GIFEC/UOP-SA/05/18

ABED A. BANDIM
DEPT. OF COMMUNICATION
UNIVERSITY OF PRETORIA
SOUTH AFRICA

May 29, 2018

Dear Sir,

RE: REQUEST FOR CONSENT LETTER TO UNDERTAKE ACADEMIC RESEARCH

I write on behalf of the Administrator to convey to you GIFEC's approval to participate in your academic research titled "Managing Stakeholder Communication Interest in the Ghanaian Telecommunications Industry"

2. Further to the approval, I will like you to furnish us with the schedule of activities at least one week prior to the engagements. Additionally, I will advise you to adhere to the provisions of the Data Protection Act of Ghana in the process of your engagement with us.
3. We look forward to meeting with you.

Thank You.

FAISAL ISSAHAKU GBANJILI
DIRECTOR,
SUSTAINABILITY AND PARTNERSHIPS DIRECTORATE
FOR: ADMINISTRATOR



GHANA INSTITUTE OF JOURNALISM

32nd Gamel Abdul Nasser Road, Osu, P.O.Box GP 667, Accra, Ghana
Tel: +233-302-228336 Email: info@gij.edu.gh Website: www.gij.edu.gh

May 21, 2018

Mr. Abed Bandim
Dept. of Communication Management
University of Pretoria
South Africa

Dear Sir,

RE: REQUEST FOR CONSENT LETTER TO UNDERTAKE AN ACADEMIC RESEARCH

I refer to your letter dated 10th May, 2018 on the above-mentioned subject and wish to inform you that management has considered your request and decided to grant you permission to undertake the academic research.

We wish to inform you that we studied your research topic and considered it relevant to our operations and would be beneficial to our institutional progress.

We however, hope that you would carry out the exercise within the stipulated timelines and wish to add that we would provide you with any form of assistance that you may need in the course of the research.

Yours faithfully,

**Patience Sowah (Mrs.)
Ag. Registrar**



May,
24th March, 2018

Mr. Abed A. Bandim
Faculty of Economic and Management Sciences
Department of Communication Management
University of Pretoria

Dear Mr. Bandim,

RE: REQUEST FOR CONSENT LETTER TO UNDERTAKE AN ACADEMIC RESEARCH

This is to grant you permission to conduct your research work on the premises of Ghana Technology University College, Tesano Campus. You are entreated to abide by the ethical code of conduct in academic research. As a way of promoting knowledge, we would be grateful to have a copy of your final research works.

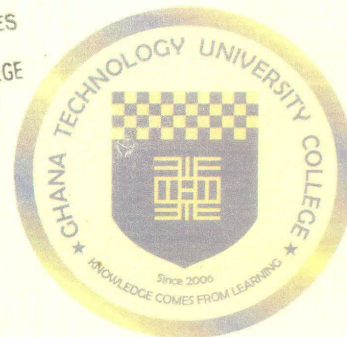
Should you encounter any difficulty or need further clarification do not hesitate to contact the Office of Research Services and Innovation.

Thank you

APPROVED BY:

Dr. Kofi Bobi Barimah
Director of Research and Consultancy
Office of Research Services and Innovation
Ghana Technology University College

[Signature]
DIRECTOR
OFFICE OF RESEARCH SERVICES
AND INNOVATION
GHANA TECHNOLOGY UNIVERSITY COLLEGE
TESANO, ACCRA-GHANA





NITA
National Information Technology Agency
G H A N A

Our Ref: NITA/ADM/18/05/30

30th May, 2018

MR. ABED BANDIM
DEPT OF COMMUNICATION MANAGEMENT
UNIVERSITY OF PRETORIA

Dear Sir,

**RE-REQUEST FOR CONSENT LETTER TO UNDERTAKE AN
ACADEMIC RESEARCH**

Please refer to your letter dated 10th May, 2018 on the above subject matter.

The National Information Technology Agency, in this regard gives its consent and agrees to participate in the research.

Yours Sincerely.

FOR: AG. DIRECTOR GENERAL
MUSAH ISSAH
HEAD, HR

Abdul Diouf Road, Ridge
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PMB, Ministries Post Office, Accra, Ghana
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