



THE IMPACT OF MANAGEMENT INFORMATION SYSTEMS ON ORGANIZATIONAL  
EFFECTIVENESS IN HUMAN RESOURCES DEVELOPMENT: A STUDY OF THE  
NIGERIAN INSTITUTE OF MANAGEMENT (CHARTERED)

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By Ulonnam David Ebere

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## Approval of the Thesis

### THE IMPACT OF MANAGEMENT INFORMATION SYSTEMS ON ORGANIZATIONAL EFFECTIVENESS IN HUMAN RESOURCES DEVELOPMENT: A STUDY OF THE NIGERIAN INSTITUTE OF MANAGEMENT (CHARTERED)

This Thesis by Ulonnam David Ebere has been approved by the committee members below, who recommend it be accepted by the faculty of Unicaf University in Zambia in partial fulfillment of requirements for the degree of

Doctor of Philosophy (Ph.D.)

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This study sought to determine the impact of management information systems on the effectiveness of the Nigerian Institute of Management (NIM). The challenges on the transition of manual means during the pre-chartered era to an automated means of transacting business operations in the post-chartered era necessitated the need for this research aimed at bridging the gaps in literature through the integration of management information system (MIS) in the Nigerian Institute of Management operations in-order to enhance organizational effectiveness.

To achieve the study objective, a conceptual model was developed using ADDIE's model where five independent variables represents management information system while one dependent variable represents organizational effectiveness. A mixed method approach was employed as a stratified random sample for 600 respondents was used through questionnaires (quantitative data), interview and group discussions (qualitative data) to code respondents' information via likert and thematic scales. The multiple regression analysis was used on Statistical Package for Social Science (SPSS) to analyze the quantitative data while the thematic analysis was analyzed for the qualitative data.

The multiple linear regression results showed that the parameters of management information system with respect to the five independent variables at 5% level of significance, with Durbin Watson falls within 1.5 to 2.5, and P-values of 0.76, 0.84, 0.71, 0.81 and 0.68 have a positive significant relationship on organizational effectiveness of the NIM. In addition, the thematic findings with respect to the focus group discussion and interviews falls above 20 and 14 respectively, indicating that management information system significantly impacts organizational effectiveness of the NIM.

Therefore the study recommends the investment and deployment of advanced technological infrastructure on the operations of the institute for organizational effectiveness. Furthermore in order to facilitate the integration of management information system on the NIM effectiveness, the researcher constructed a proposed new system of technological business model and named the framework “Ebere’s remedial technological business model” (ERTBM), where the leveraging effects of new technologies further cements and recommends its application or utilization as an additional (new) guide for improving the Information technology infrastructural developments through the adoption and acceptance of the continuous use of technology.

Thus, the study further implies that the outcome of this research is also expected to significantly contribute to the existing body of knowledge and assist officials to appreciate management information system as a necessary effective organizational human resource development tool.

### Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where states otherwise by reference or acknowledgment, the work presented is entirely my own.

## AI Acknowledgment

I acknowledge that I have not used any AI tools to create, proofread or produce any text or ideas related to any draft or final versions of the thesis.

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### Dedication

I dedicate this research work to God Almighty for His provision and unmerited favour over my life despites the challenges and also to my Family (both immediate and extended) and most especially to my better half Dr. Adaobi Ebere for her understanding throughout the immense research period.



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### **List of Abbreviations/Acronyms**

**AI** – Artificial Intelligence

**ATI** – Advance Technological Infrastructure(s)

**AR** – Augmented Reality

**DOI** – Diffusion of Innovation Theory

**DA** – Descriptive Analysis

**DV** – Dependent Variable

**ERTBM** – Ebere’s Remedial Technological Business Model

**ELT** – Existing Literature Theory

**FGD** – Focus Group Discussion

**HR** – Human Resource, **HRD** – Human Resources Development, **HRM** – Human Resource Management

**IBM** – International Business Machines, **ICT** – Information and Communications Technology, **IoT** – Internet of Things, **IS** – Information Systems and **IT** – Information Technology

**IV** – Independent Variable

**MIS** – Management Information Systems

**ML** – Machine Learning

**NIM** – Nigerian Institute of Management (Chartered)

**OE** – Organizational Effectiveness

**RA** – Regression Analysis, **RO** – Research Objective, **RP** – Research Problem, **RQ** – Research Question, **RS** – Research Solution

**SPSS** – Statistical Package for Social Science

**TAM** – Technological Acceptance Model

**TPB** – Theory of Planned Behaviour and **TRA** – Theory of Reasoned Action

**UTAUT** – Unified Theory of Acceptance and Use of Technology

**VR** – Virtual Reality

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## CHAPTER 1: INTRODUCTION

### Background of the Study

To achieve the aspirations of unobstructed human resources progress, it was from the urgency to ensure better working developments by leveraging information technology from its management information systems that the shift toward organizational effectiveness emerged. This section provides an introductory background to the study, with an overview of the study's objectives, emphasizes the study's strengths, addresses the study's goals and objectives, discusses the study's significance, as well as outlines the research demilitations. Sequentially on the background of the report, it is safe to say that management information systems cannot be overemphasized enough as it have played vital roles in organizational efficiency for the past decade by aiding in facilitating decision-making through providing precise, quick, and critical information. This is in agreement with Gilbert & Ali (2000), who had earlier stated that organizational effectiveness is a measure of how effective an organization is at achieving its predetermined goals.

For according to Yang (2007), an effective organization is one in which all constituents within the company are satisfied. Such organization is in a better position to transform the inputs into output as effectiveness portray the volume of resource utilization within the company. While Agwu, Adeola, Etefia & Ogwu (2010) had also noted that only effective management information system can ameliorate challenges of minimizing operational uncertainties and providing organizations tools to facilitate faster and automated decisions in today's organizational management operations. Keeping in mind that management cannot be effective without adequate information, even though information does not serve as an alternative to effective management. Information systems, according to laudon (2006), are a group of

connected parts that gather, process, save, and share data to support decision-making, synchronization, and management in an organization.

However according to Lucey (2005), the term management information systems (popularly abbreviated as MIS) and computers are often thought of as identical components meanwhile these terms are actually different as management information systems have been around in companies and institutions for a long time even before computers were invented existed. From this perspective, the functionality of management information system became clearer as it manages data, organizes, retrieves communicable knowledge which assist companies to provide services faster, and market more accurate and easier decisions, thus also impacting on the effectiveness of the institution or company. This scenario became necessary due to past developments where the computers were not utilized in the earlier years when organization started keeping their records with traditional and manual methods of inputting official informations. Computerization of official information has presented organization with effective deliveries targets and challenges on how to properly utilised it to achieve organization effectiveness.

As the ancient means of decision making has been outdated by a lot of modern processes that it could no longer suffice in this globalize world. Moreso, Ottih (2005) had also duly emphasized that it was crucial to highlight that the computer was credited with the increased interest in management information systems due to its easy data processing and thus opens up new career opportunities in the field. Organization effectiveness however and according to Mitchell (2012), relies on the quality of decisions that guide its operation. In this light, Information technology offers a tool that assist to combine data to create useful information as decision making performs key functions in the internal access processes of most institutions or

companies for if decisions are right, it generates positive organizational outcomes unlike where poor decision are executed (either due to mis-information or lack of information), it tends to cripple the company activities and goals (Gabriel, 2013). Despite the assessment, MIS being a delicate area calls for more caution by professionals and managers in decision making policies as cited by Lingham (2006), who noted that being meticulous and skillful improves a person's confidence in the positive outcomes of using MIS for decision making and other business areas.

Although the Information Technology (IT) can also be a powerful resource tool available to managers for the quality of data processing, it sometimes could also serve as a threat just like Xiang (2019) noted on the Artificial intelligence information technology which she cited was much faster in operations but done with little or less human intervention and with huge cost and ethical implications. However, Schwartz et al (2019) immediately countered this by proposing that the top management has to be creative and strategic enough through their conceptual and intellectual capacity to explore full opportunities in all strategic judgements of the enterprise which affect the long term objectives of the Organization with the introduction of a more inclusive and ethical compactable technological solution known as "Green Artificial intelligence". Further citing on how the real world interacts with computer-generated perception information such as the Augmented Reality technology and other solutions which are safer and more economical, for they requires more human intervention unlike Red Artificial intelligence.

Moreover Allen, Heurtebise & Turnbull (2010), had stated management information system usually assist in making solid decisions by providing organized tools, timely information and appropriate managerial policies and rules through the use of computer, television, video, film, internet, telephone and mobile phones. This was further supported by Mwanja & Muganda (2012), who noted that Information technology particularly, computer technology has been an

indispensable ally and tool for every governmental and business offices. This is in accordance with the National Information Technology Development Agency (NITDA) who asserted that virtually all sectors of the Nigerian economy is becoming computerized for more people are showing interest in management information system tools as employees of labour these days prefers to employ people that are computer literate than those that are not. Management of data aids in the decision making process of organizations as structured collection of data is of utmost importance to ensure reliability. In order to add, access and process data stored in a computer database, the need of a management information systems arises. As MIS are very crucial in ameliorating organizations information processes and securities (Davenport & Short, 2008).

In addition, according to Allen *et al.* (2010) despite the fact that management information system supplies decision makers with facts (likewise, it supports and enhances the overall decision making process), it also enhances job performance throughout an institution. At the most senior level, it provides the data and information to help the board and management to make strategic decisions (top management decisions or long lasting decisions) while at other levels of management, MIS provides the means through which the enterprise activities are executed, monitored, controlled and information are distributed to management, supervisors, employees and customers (Jahangir, 2005). MIS is a critical component of the institution's overall risk management strategy; it supports management's ability to perform such reviews. Also, Jahangir further reported that some MIS allows multiple users to view identical information simultaneously without any difference. This improves the supervisory capabilities of MIS in arriving at important decisions and increases the company's success by helping to ensure accountability and encourage initiative.

However as an overview with respect to the impact of Management Information System on organizational effectiveness using the Nigerian Institute of Management as a case study, since the independence of Nigeria from the British in 1960, there were several formation of development as a nation. The Oil sector, the transport sector, the building and construction sector, the health sector, Banking sector, Air sector, Food sector all had to be handled by component professionals known as managers in order to drive the economy forward. Subsequently, this enabled the introduction of management as the key component to enact organizational policies. The idea to form a management body to provide management training and competence originally came from the members of British Institute of Management (BIM) residing in Nigeria on training purposes who felt there is need to impart expertise knowledge on the managerial means of conducting business in the country. Thereafter, in 1961 a group of about 50 people came together to launch the Nigeria Management Group and on the 24th of January 1964, the group changed its name to the Nigerian Institute of Management (NIM) with an increased membership base of over 2000 people.

Coincidentally as the mode of operation internationally started to change, this affected the style of business transactions with the institute and necessitated the need for it to change in order to be abreast with modern trends of business operations. To manage resources effectively is a concept that Terry (2004), explained that is characterized by critical factors challenging the manager who tries to convert resources into results and to know the difficulties involved in putting resources to productive use. Sadly at that time when the institute was not chartered, it was characterized by foundational challenges such as the technological incentives and government backing on regulations and licensing which also adversely affected the ease of operations and quality of training and institute's resources. This created gaps in the

functionalities of the institute and the need to bridge these gaps aligns with the purpose of the study.

Therefore the research focuses on the impact of management information systems on organizational effectiveness by balancing of technology, people, risks and profit which encouraged the Nigerian Institute of Management to invest in new trends of business operations. Subsequently, the Federal Government of Nigeria granted the institute its chartered status and it became a multidisciplinary professional regulatory body known as the Nigerian Institute of Management (Chartered). Tasked with the legal mandate to train managers of various industries and sanction members who defaults its guideline. This development marked a turning point of the Institute as before then the means of transacting business was characterized as traditional and primitive thus, the chartered status enabled the modernization of operations to new investments in technology (Institute of Electrical and Electronics Engineers-IEEE, 2020).

With the gradual emergence of technology to achieve smooth business operations, the importance of management became pivotal essentially for ensuring the right people are handling the required services to achieved organizational goals. This supports Peter Drucker (2003) who stated that management is the process of putting resources together in the right proportion to achieve a profitable goal and Armstrong and Taylor (2014) who stated that management is to make human resources productive. Thereby also supporting Banjoko (2010) statement which cited that human resources implies that every factor of production belongs to man and putting them into productive use is the work of management. The factor that belongs to man is known as managerial roles which according to Business Dictionary (2020), a manager is an individual who is in charge of a certain group of tasks, or a certain subset of a company. He supervises the duties of others and ensures business flow/continuity.

Regardless after the charter status, the institute being the nation's management regulatory body was not insulated with national and global issues such as economic recession, poor application of information technology and industrialization and poor government policies, health pandemics such as Ebola and Covid-19 virus and poor government policies. This led to a disruption of business activities and it hugely affects the economy and market forces. Therefore the Nigerian Institute of Management had to put on their thinking caps in a bid to transact operations smoothly and healthy by ensuring safe practices and business continuity. To bridge all these associated barriers, triggered the need of this study, which is to use NIM as a case study to explore and identify the processes involved in converting the old method of operations into modern means of operation by evaluating the impact of management information systems on organization effectiveness in human resources development. Hence, re-emphasizing the reason for the study which was as a result from the functionality measures of management information systems on the effectiveness of the institute's human resources progression.

### **Statement of the Problem**

The problem encountered during the transition of a manual means to an automated means of transacting business operations has its impact on the effectiveness of an organization to achieve its goals. This is the case of institutes' pre-chartered and post-chartered era of operation which was in a primitive mode thus further emphasizing on the need for organizational effectiveness through the impact of improving its means of transacting business operations to modern technology. This primitive mode was characterized by adaptive and ancient means of transacting business services during the institute's pre-chartered days. Notably, the Nigerian Institute of Management is a regulatory multidisciplinary professional body which came into



existence in 1961 as the trainer of the management profession in the nation. Hence it also became highly influential to human resources development.

Regardless, during the 1960-1990's era of the pre-chartered status the method of operation was so obsolete that it adversely affected revenue generation and there was need to change its technological competencies through its human resources development (NIM, 2020). However having become chartered in 2003, their business operations and scope of functions increased in size and effectiveness. Already several relevant theories and models (such as Kurt, 2017 ADDIE's Model) on management information systems (Human Relations Theory - Elton Mayo, 1924; Resources Based Theory - Wade and Hulland, 2004; Theory of Planned Behaviour - Ajzen, 1991; Open Systems Theory - Bastedo, 2004; Gap Analysis Model - Channon and Sammut-Bonnici, 2015; Diffusion of Innovation Theory - Rogers, 1995; Technology Acceptance Model – Davis *et. al*, 1989) had been well documented in management and sciences extant literatures. Sadly, despite the increase in its scope of operations during the post-chartered era, NIM demanding mandate, the approaches and logical model(s) for management information systems to achieve organizational effectiveness have been a challenge as the transformational change barriers such as fear of the unknown, ineffective leadership, broken communication, slow pace of work, pandemic outbreak, globalization and undue complexity kept on resurfacing.

Previously, Avgerou (2000) had duly noted that, it is the responsibility of human resources in an organization to make sure that operations are taking place smoothly, and things are going well. Thus, this research proffers solutions on the challenges in bridging the existing gaps through the integration of management information system in the Nigerian Institute of Management's operations in-order to enhance organizational effectiveness. The intriguing fact that the case study has never been used as a research base and the phenomenon unraveling the

case study resources with the knowledge gap (Miles, 2017) earlier mentioned, enabled the researcher to attempt to address the issues. This served as the purpose of the study and the purpose statement of the study was discussed in the next section

### **Purpose of the Study, Research Aims and Objectives**

The purpose of this mixed-method of quantitative and qualitative research (Guba, 1990) was to determine the use of Management Information systems at the Nigerian Institute of Management for organizational effectiveness. This was intended to be achieved by identifying the various components of the organization's effectiveness, examining the model or conceptual framework to test in this study, carrying out a comparative analysis of status eras, investigating further by showing their relationships within each other and exploring the concepts of how one or two (or more) components can cause or influence the effectiveness of NIM.

The aims and objectives of a research reflect on the overall purpose of the study (Mwanzia, 2020). As stated earlier, the purpose of this research was to determine the impact of Management Information systems on organizational effectiveness in Human Resources Development using the Nigerian Institute of Management as a case study (Neuman, 2014). Therefore, this thesis majorly aims to employ multi-factor models to investigate and explain organizational effectiveness by further testing the adherence to the Technology Acceptance Model (TAM) in the advancement of technological infrastructures responsible for the growth of management information systems. Hence, this study formulated five specific research objectives (RO) as seen below; in order to achieve the desired study outcome and this is in line with Thomas and Hodges (2010) who further cited that, to achieve the desired outcome, the issues have to be thoroughly investigated.

RO1). To compare the levels of business operation with regards to management information systems drive in human resources development during the pre and post chartered era of the organization.

RO2). To assess the major differences (leadership style, structure and re-engineering) in the extent of Management Information Systems penetration in human resources development within the pre and post chartered eras of the organization.

RO3). To establish the effectiveness of Human Resources Management involvement in change management and administration in the human resources development of the organization within the pre and post chartered era of the organization.

RO4). To determine if the boost in information technology is meant for improving management information systems in human resources development for organizational effectiveness at the post-chartered era of the organization.

RO5). To identify and establish the roles of advanced technological infrastructures meant for executive decision making and business services impacting management information systems' effectiveness in the post-chartered era of the institute's human resources development.

In an attempt to prove the dissertation is valid, the researcher attempted to demonstrate an ability to apply appropriate methods to address the research issues as discussed. In addition also, plus why the researcher has decided to execute this study; as well as to summarise the research objectives required to achieve the research main aim or purpose. This would be emphasized in the nature and significance of the study below.

### **Nature and Significance of the Study**

This study sought to determine the impact of Management Information Systems on Organizational Effectiveness in Human Resources Development using the Nigerian Institute of

Management as a case study (Bryman, 2012). To achieve its purpose, this study employed mixed-method of quantitative and qualitative research (Guba, 1990) using multi-factor models to investigate and explain organizational effectiveness by further testing the adherence to the Technology Acceptance Model (TAM) in the advancement of technological infrastructures responsible for the growth of management information systems. Through the use of a case study design (Yin, 2003), a descriptive research method was employed for the purpose of this study. This descriptive type was used due to the reason that it enabled the researcher to have direct contact with the sample of the study while also using Dillman (2007) tailor design method that accommodated both opened-end and closed-end questions. These questions were also accorded with the efficient utilization of questionnaires and interview transcripts specifically designed in a pragmatic way which addressed the research questions (of what and how) and the purpose of the study. The study variables were determined by the research questions reflecting the purpose of the study.

Notably the sources of data were both primary and secondary sources of data. As the primary sources consisted of structured response to questionnaires and unstructured interviews with members and staff of NIM (Chartered) while the secondary sources included books, lectures, journals, newspapers, documents and reliable internet resources. Data was collected through both sources as permission was sought from the management of NIM (chartered) to disseminate questionnaires and conduct interviews in the safest way (either online or physically) to the selected sample of the study. The researcher disseminated the questionnaires solely to members and staff of the organization (internal stakeholders) as well as to the external stakeholders.

Also ethical principles were re-emphasized and carried out while conducting the research in compliance with standard research procedures (Evangelos, 2019). Data collected from the questionnaires and interview transcripts were presented through percentages, means and multiple regression analysis tables and further analyzed through the use of regression analysis both expressed on Statistical Package for the Social Sciences (SPSS) IBM's tool then reposted on Microsoft computer using Excel Sheet and Goggle Sheets. However, in order to validate the results and based on the various variables in the comparison analysis, the interpretive/scientific method of interviews and focus groups was eventually sorted out also. This was in-line with Cronbach (1971) who had previously cited that while reliability is necessary, it alone is not sufficient and for a test to be reliable, it also needs to be valid.

Thus, further justifying the triangulation (mixed-method) approach employed which accepts the combination of quantitative data from questionnaires with the qualitative data from personal interviews and focused groups. This also increased the need for validity and reliability as test-retest reliability. The study's scope involves a population sample data comprising of 600 Nigerian Institute of Management personnel (members and staff) as well as external stakeholders (none-members and none-staff) at the administrative quarters in Lagos. This limit the categories to four groups comprises of adults ranging from 18 – 70 years old who are members of NIM, staff of NIM, external stakeholders of NIM, people at the Administrative office who may be non-members but of influential interest group individuals. Notably, this excludes any other criteria of data outside the administrative quarters however the purpose of limiting on the four categories (demography, member, staff and none-member) was to provide adequate comparable multi-perspectives of the impacts to understanding as well as to the general acceptability of the research approach; mixed-method or triangulation (see Study Delimitation).

The potential participants was identified from a stratified random sampling sub grouped population based on their age, gender, the participants view most consistent with the theoretical framework, organization members and participants with more depth feedbacks as stakeholders. Since the research was based on mixed method, the pragmatic philosophical approach acted more like a foundational research support and was also highly practical when viewing the validity or existence of knowledge (Molina-Azorin, 2016). Therefore the participants were also approached through the focus groups comprising of the members, staff and other crucial stakeholders from the quantitative and qualitative online survey. Hence, supports the recruitment process of participants to be done primarily online with email blast messages tailored specifically to accommodate age-groups, genders, members and preference to the existing knowledge of developments on Management information systems.

However for the significance of the study, this research is important for organizational effectiveness as it builds on the survival instincts or positive human resources developments which management information systems impacts on going forwards as compared to the past where many organizations in year 2004 and beyond were grouped as failed organizations while some folded up or got distressed due to ineffective management procedures, decisions, attitudes and policies (\*Vanguard and African Service Newspaper, 2010). Some banks and financial institutions in Nigeria became distressed as a result of the absence of speed and accuracy in the work performance, the presence of large chunk of files which often leads to loss of data and waste of office space, the huge amount of money and time spent in sending letters through postal services and others (Yusuf Munirat et al., 2015).

Sadly, most top management team that served as the basic decision makers lacked adequate management education principle and practices. Most of them applied the traditional

management styles that were peculiar with traditional or adaptive organizations that make decisions by non-scientific methods approach but rule of thumb decisions that are relevant in developing economics (Neuman, 2005). Thus, further emphasizing on the need for strategic leadership equipped with the right decision making skills for organizations (Boal and Hoojiberg, 2001). Therefore study is also expected to highlight the management information system's role in providing the appropriate data and information in order to support management function, giving advanced solutions for managers, helping administrators to take correct decision in a large margin, improve the administrative level in human resources.

Today, most modern businesses and organizations heavily depend on management information systems such as from database employee e-mail to e-commerce websites (McGraw-Hill, 2012). Hospitals have huge patient databases for storing patients information. Public and Private Organizations as well as Financial and Educational Institutions have lots of sprawling networks, plus small businesses which also uses management information systems tools such as WhatsApp Business, Facebook, Global Position Systems as well as other applications to track their progress. Theoretically, the study validates ADDIE's model by using it as an additional design tool guide from previous studies and model for the study's conceptual framework. Hence, this study further assists in ensuring adequate reliability as it also emphasizes on the crucial roles in helping organizations (both private and public) to achieve profitable results and keep competitive forces in check.

By the middle of 20<sup>th</sup> century, the world experienced the introduction of computers and subsequently traditional operations gradually transformed to digital technology. Using software and computers, many businesses use management information system tools to ensure services are run efficiently and smoothly. This study is beneficial to organizations through the

deployment of management information systems tools in numerous department such as security, human resources, finance, manufacturing and many others. Management information systems has actually become one of the major driving information technology forces in most organizations and businesses. Enterprises and businesses are seeking to get management information system applications that can assist sell their services and products more effectively (Adeyemi, 2009). For instance, by using the information tools systems, businesses and organization can move information/data much faster and also coordinate numerous activities in order to achieve the useful purpose of the business services as well as to enhance productivity.

Traditional efforts such as beasts of burden cost-drawn costs and simple technologies for labour based processes graduated to modern technologies for projects conception, design, procurement, construction, operations, maintenance, upgrades and facility management. These are in form of many corporate softwares, hardwares or combination of both as visibly pronounced in Artificial intelligence. In this vein, this study will be beneficial to modern interest groups such as financial institutions, educational institutions, public and private companies as it enables enterprises to adopt pragmatic measures (such as Database systems, Augmented reality and Virtual reality) to correct the loopholes previously encountered (Ajayi and Omirin, 2007).

The outcome of this study is expected to help human resource officials and all other sector managers to appreciate MIS as a necessary effective organizational tool to identify the existing structure strengths and weaknesses as well as to take corrective measures for business continuity, fast and accurate decision and policy formulations (McGraw-Hill, 2012). Also, enterprises can work remotely (such as through Cloud technology, Internet of things, Digital blue print, social media applications, drone mapping and virtual reality) and pay remotely (such as blockchains, augmented reality platforms and online payment applications) by improving their



Information technology infrastructures (Asare et al, 2019). Furthermore, it is also expected to contribute to the existing body of knowledge and serve as reference material for further studies.

### **Demilitation of the Study**

Having discussed the scope/nature of the study, it is essential to also discuss the hindrance of the boundry of the study. Noting that the study sought to determine the impact of management of information systems on organization effectiveness using the Nigerian Institute of Management as a study. The study's introductory/confirmation letter brought to the research case study (see Appendix A) coincidentally was during the time of the Covid 19 pandemic, hence the researcher did not have the time and legal backing to travel to all the management center offices in Nigeria due to the government travel restrictions. Hence, the scope of the study was narrowed to the headquarters in Lagos while focusing on the institute adults ranging from 18years to 70 years who are internal and external stakeholders within the lagos headoffice for a mixed blend of sample size using a mixed method methodology to ensure reliability and validity of the research.

However, in a follow up attempt on the insights of the nature, significance and delimits of the study, the research problems was restructured into the research questions and research hypothesis in line with the research objectives.

### **Research Questions and Research Hypothesis**

The study had previously discussed the research objective(s), hence the following research questions (RQ) were formulated in-order to guide and narrow down the research problems precisely to the intended research purpose (Philips and Pugh, 2012);

RQ1). What were the levels of business operation with regards to management information systems drive in human resources development in the pre-chartered and within the post-chartered era of the organization?

RQ2). What are the major differences (leadership style, structure and re-engineering) in the extents of management information systems penetration in human resources development in the pre and post chartered era of the organization?

RQ3). What were the interactive effects of Human Resources Management in management/administrative changes on the organizational effectiveness in human resource developments in the pre and post chartered era of the organization?

RQ4). How did the emergence of information technology boost management information systems on organizational effectiveness in human resources development in the post chartered era of the organization?

RQ5). How are the roles of the advanced technological infrastructures in executive decision making and business services impacting on management information systems' effectiveness in the post-chartered era of the institute's human resources development?

To answer the research questions and in line with Oppenheim's (1996) law, this study specifically designed the questionnaires and interview sheets in such a way that it followed an orderly sequence of proceedings. Where the sample size that consisted of members, staff (as internal stakeholders) views on the research questions and objectives were included as constructs and considered with also that of some none-members (as external stakeholders). Furthermore, in order to attain the objectives of the study, research hypothesis were designed based on the five research questions as the thesis aims to test for five hypotheses. For this study required the need to devise relevant research hypotheses in order to complete the investigation successfully. While also noting that in the hypotheses below  $H_0$  refers to the null hypothesis while  $H_a$  refers to the alternate hypothesis as shown;

Ho1): There is no significant relationship between the levels of business operations with regards to management information systems drive in human resources development on the Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered and within its post-chartered era.

Ha1): There is a significant relationship between the levels of business operations with regards to management information systems drive in human resources development on the Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered and within its post-chartered era.

Ho2): There is no significant relationship between leadership style, structure, and reengineering in the extents of management information systems penetration in human resources development on the Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered era and within its post-chartered era.

Ha2): There is a significant relationship between leadership style, structure, and reengineering in the extents of management information systems penetration in human resources development on the Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered era and within its post-chartered era.

Ho3): There is no significant relationship between interactive effects of Human Resources management on management/administrative changes on the organizational effectiveness of the Nigerian Institute of Management in human resources development during its pre-chartered era and within its post-chartered era.

Ha3): There is a significant relationship between interactive effects of Human Resources management on management/administrative changes on the organizational effectiveness of the

Nigerian Institute of Management in human resources development during its pre-chartered era and within its post-chartered era.

Ho4): There is no significant relationship between the emergence of information technology boost in management information systems on the organizational effectiveness of the Nigerian Institute of Management's post chartered era in human resources development.

Ha4): There is a significant relationship between the emergence of information technology boost in management information systems on the organizational effectiveness of the Nigerian Institute of Management's post chartered era in human resources development..

Ho5): There is no significant relationship between the impact of the roles of the advanced technological infrastructure in executive decision making and business services with respect to management information systems on organizational effectiveness in the post chartered era of the Nigerian Institute of Management's human resources development.

Ha5): There is a significant relationship between the impact of the roles of the advanced technological infrastructure in executive decision making and business services with respect to management information systems on organizational effectiveness in the post chartered era of the Nigerian Institute of Management's human resources development.

The null hypothesis represented as  $H_0$  were tested and analyzed using the multiple regression approach in order to attain the objectives of the study. In cases, where the null hypothesis  $H_0$  do not meet the decision criterion of the regression analysis, the alternate hypothesis represented as  $H_a$  are accepted, while the null hypothesis are rejected. These research questions and hypothesis would assist the literature review in providing a reference structure that would guide the entire study as discussed in the next chapter (chapter two).

## **CHAPTER 2: LITERATURE REVIEW**

### **Introduction**

This chapter summarizes the purpose statement of the study and continues the discussion of the impact of management information system on organizational effectiveness. It reviews the concepts of development and application of management information systems before seeking the underlying theoretical foundations that explains the impact of management information systems. Discussions on the field/industry descriptions of the study and also past literatures related to the study which leads to the underlying theories for the study were highlighted. The theories help in understanding the functionality of management information systems by enabling the overview of theories and framework used to establish the link between management information systems and organizational effectiveness in human resource development using the Nigerian Institute of Management as a study.

By using theory to help frame a study, it allows the application of the study through the use of theoretical and conceptual framework (Cozby, 2001). Hence, this literatures review consist of the study's concept for development and application level, conceptual, theoretical, empirical and critical review as well as the identified research gaps and a brief summary.

### **Management Information Systems Concept of Development**

Theiruf (1984) emphasized that before moving into the definition of management information systems, the processes or business model involved occurs through the deployment of information technology. Presumably when speaking of Information Technology (IT) as a whole, it was noted that use of computers and information are associated. In actuality, information technology is the process of using computers and software to manage information (Davis and Olson, 1984). In Nigeria, the National Information Technology Development Agency (NITDA,

2001) is the clearing house for information technology sector. The agency is committed to the coordination of general IT and its services closer to the people as it also entrusted with the implementation of National IT policy which seeks to enable Nigeria a compliant digital nation.

However it noted that IT process metamorphized into what is referred to as Management Information Services (or MIS) or simply as Information Services (or IS) defining Management information system is a planned system of collecting, processing, storing and disseminating data in the form of information needed to carry out the functions of management (Laudon and Laudon, 2007). Furthermore, according to Javatpoint (2021), MIS involves three sub components or pillars;

*Management1* emphasizes on the ultimate use of such information systems for managerial decisions making rather than merely stressing on technology while *Information2* involves the processed data gotten rather than the raw data and the context in which it is used by managers as well as other users. Then, *Systems3* emphasizes a fair degree of integration of component and resources that work together and having a holistic view. This involves a Data Base Management Systems (DBMS) which is a collection of programs that enables someone to store, modify and extract information from the database.

While also noting that there are different types of DBMS ranging from small systems to large systems for example an Automated teller machine (ATM) and a identity card management system. It manages data in database systems rather than file systems. For example another database system created from Microsoft Office are the Excel and Access database as well as other enterprise softwares (as discussed later) with the intention of fast tracking the traditional manual operations to automated modern operational process seamlessly. This is in line with the purpose of this study, where management information system involves a set of computer based

systems and procedures implemented to help managers in their crucial role of effective decision making (Kumar, 2006). Das (2012) had supported this later by defining MIS as a concept mainly concerned with processing data into information for appropriate decision making. The desire to integrate MIS usage in the Nigerian Institute of Management in compliance to other management systems usage is driven by the researcher's vision to acquire new knowledge and explore the literature gaps by filling them.

Also, the ability to make business solutions and rapidly implement them on the basis speed, accuracy and reliability in processing information through advances or investment in technologies infrastructures. According to Beaumaster (2002), MIS implementation processes if successfully driven, intends to encourage globally competitive enterprise where all the informations are available in electronic form and is regarded as the awareness usage in application of plans, models or policy. He further noted that the necessary implementation processes includes *investment analysis*<sup>1</sup>, *risk assessment and analysis*<sup>2</sup>, *life cycle planning*<sup>3</sup>, and *system acquisition*<sup>4</sup>. The purpose of the study supports these processes and its applicational concepts can also be used to support or build a new framework for the study.

### **Level of Management Information Systems Application**

According to Ahmed (2007), he stressed that during the use of various methods for mixed method study, no single method is always superior as each has its strength and weakness. Therefore, having already identified the constraints from the research statement of problems, the research application of management information system will be discussed broadly in order to capture a multi-perspective model which can be outlined in three-dimensional levels namely a) Strategic level b) Managerial or Administrative and c) Operational. While noting that each

dimension represents a different level of control and has a different level of requirement for its application as discussed below.

### **Strategic Level**

This is the highest level in the organization as it is responsible for the regulatory nature and implementation of policies which the Nigerian Institute of Management is known for as a regulator of management practices in Nigeria. As later seen in Fig 3 of Chapter 2's participant of NIM effect on the market where as a regulator, it interconnection with government policies, labour forces, capital markets, stakeholders, guidelines for ensuring business continuity and safer business practice. Notably, these institutional steps are driven by managers for the growth and stability which leads to organizational effectiveness (Lucey, 2005). Participants seen at this level are the government officials and other stakeholders who are responsible for the regulatory policies and implementations of directions set out by the Council of the organization and also set by the Federal Government.

### **Managerial or Administrative Level**

This level is set to control and organize the actions of the organization. It is also performs the supervisory roles aimed at ensuring the correct input and quality processes are implemented and this is in alignment with the change management or administrative independent variable of the study. Bearing in mind that the globalization also played a role in the change process, the managerial level is more responsible for ensuring that the right people are chosen for the right functions. Hence, this level is orientated towards functions, processes or planning. This manpower planning paves way to the request for new innovation and technologies in order to successfully drive the organization within reason competition heights by ensuring drive developmental goals.



Data in this case provides day to day monitoring of operations as it can also be extracted at the operational level too and the participants responsible for ensuring these goals are achieved in organizations are namely the top management, middle management and lower management for they constitute of a larger population of stakeholders. Also in application, this level acquires vast awareness of the situation and harmony of the phenomenon studied as their participants are seen as prime movers of the organization (Davies, 2009).

### **Operational Level**

This level is processing-oriented and its participants are mixed. Its inputs are specific and derived from current data events. It is the operational level which is the predominant recipient of data in the company. These operational areas are usually the first to be systematized and the first to be computerized. This stage is best known as *the information processing system stage*.

Information processing according to Ives and Learmonth (1984) is a system which collects data, processes the data to produce information as output which is used by core managers for decision making. Their participants are from a broader perspective of stakeholders where resources are readily available for progressional goals. This resources provided are characterized by the learning, training, human capital programs, recruitment and specialization of skills while the provision of various information processing facilities was characterized by the birth of internet services which made the world to be a small global village as a result of the interconnections of information processing. Therefore, the information process can be categorized into three forms;-

Firstly, *the Operational information System (OIS)*: This is designed to assist the management in regard to the needed information to operate the organization effectively (Kevin, 2006). Operations system application in the Nigerian Institute of Management such as statistical data processing, membership database, NIM payment portal processing, identity management

processes. Each of the above subsystem is made up of several other components plus the stage of computerization has shaped the mode of operating such systems thus freeing mankind from boredom and drudgery as well as offering a new lease of life. Several software's abounds in the areas of accounting, office management, membership and personnel such as Human Resource Information System and Membership Portal System can be applied in the organization to ease the business operations.

Secondly, *the Management Information System (MIS)*: This is an Information processing System that converts data into information in an appropriate form to managers for making effective management procedures by planning, staffing, controlling and organizing the activities of the organization (McGraw-Hill, 2012). Examples of some MIS in the Nigerian Institute of Management are financial payroll registration system, identity management systems, membership list management system, personnel management information systems, among others. This MIS processes will support the quest for the Nigerian Institute of Management to effectively carry its role as the source and symbol of management excellence in the country for the operational standard will be in close comparison with the international standards. This application will improve timely delivery of services, improve customer or client services, enable speedy processes of information, encourage better structure of operations, create better communication with stakeholders and enable confidence in the organizational process.

Thirdly, *the Decision Support System (DSS)*: This is a collection of computer programs (software) and hardware that help decision makers (management) to arrange data and information in an efficient way to meet their organizational responsibilities (March, 2011). A DSS focuses on decision-making activities while MIS centres on general management matters. Examples of DSS that will be useful in application at NIM are Stakeholders regional planning

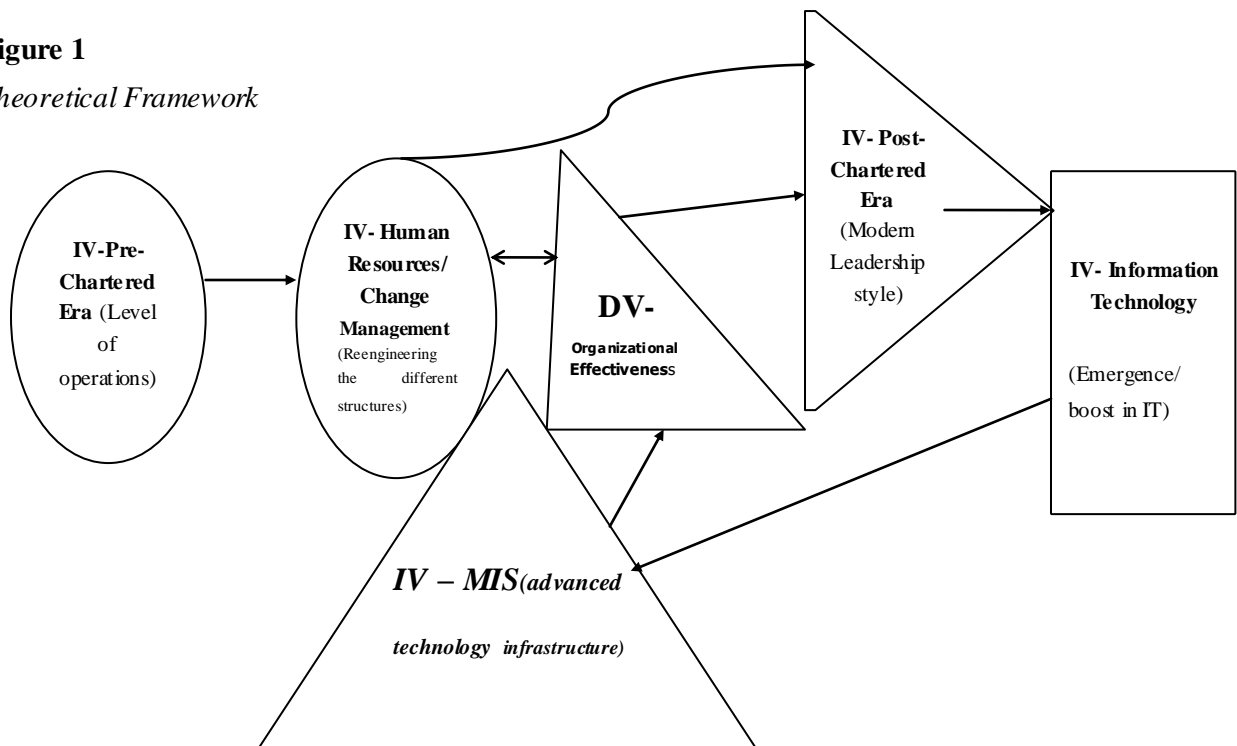
information system, demography information system for members, digital payment platforms, Internet of things, Block chains, Virtual reality (industry 4.0 and 5.0), Artificial intelligence, machine learning, Augmented reality, remote learning, economic information systems, executive management systems, document management and retrieval system among others. These system needs to be explained as their contributions to organizational effectiveness will add to the framework for this study.

### Theoretical/Conceptual Framework

According to Lederman and Lederman (2015), a theoretical framework provides the assumptions for the larger context of a study as well as outlines the field where the study will be applied. Therefore, this section not only intends to reviews theoretical foundations that discusses and gives more insight on the impact of management information systems but also of organizational effectiveness.

**Figure 1**

*Theoretical Framework*



*Where IV is independent variable and DV is dependent variable.*

**From figure 1**, the arrow indicates the direction (and sometimes measurable distance or strength) of the variable relationship to one another and this also illustrates the diagrammatical representation of the relationship between variables. While also noting that the independent variables (IV) are the causes and the dependent variable (DV) is the effect (Bhandari, 2022). However where Human Resources influences change management, though they are independent variables, they both have its supervisory role along with Organizational effectiveness and can also be used as an independent variable with its sub-variables (Mwanzia, 2021). The five independent variables represents management information system while one dependent variable represents organizational effectiveness, this also serve as a theoretical framework for this study.

Theoretical framework can be further defined as a broad theory based explanation (Schilz, 2010 and Lederman&Lederman, 2015) and the concept of causality such as “this variable caused this variable to change” and while the analytical modules (the components) also make up the conceptual framework of the research. While **in Figure 2**, using Kurt (2017) ADDIE’s model as an instructional design tool for the conceptual framework, these analytical modules are the components of organizational effectiveness which are also the different conditions responsible for the stability and growth of the organization (as identified in the purpose statement which also makes up the conceptual framework of the research).

Components such as the Pre-chartered status – using the Level of operations component (**A**-Analysis), interaction effect of Human Resources/ Change Management – using the Re-engineering the different structures component (**D**-Design), the Post-chartered status – using modern leadership style and interactive effect of business services component (**D**-Development), the Information technology – using the emergence of Information Technology-IT (**I**-Implementation), the advanced technological infrastructure (**E**-Evaluation) meant for executive-

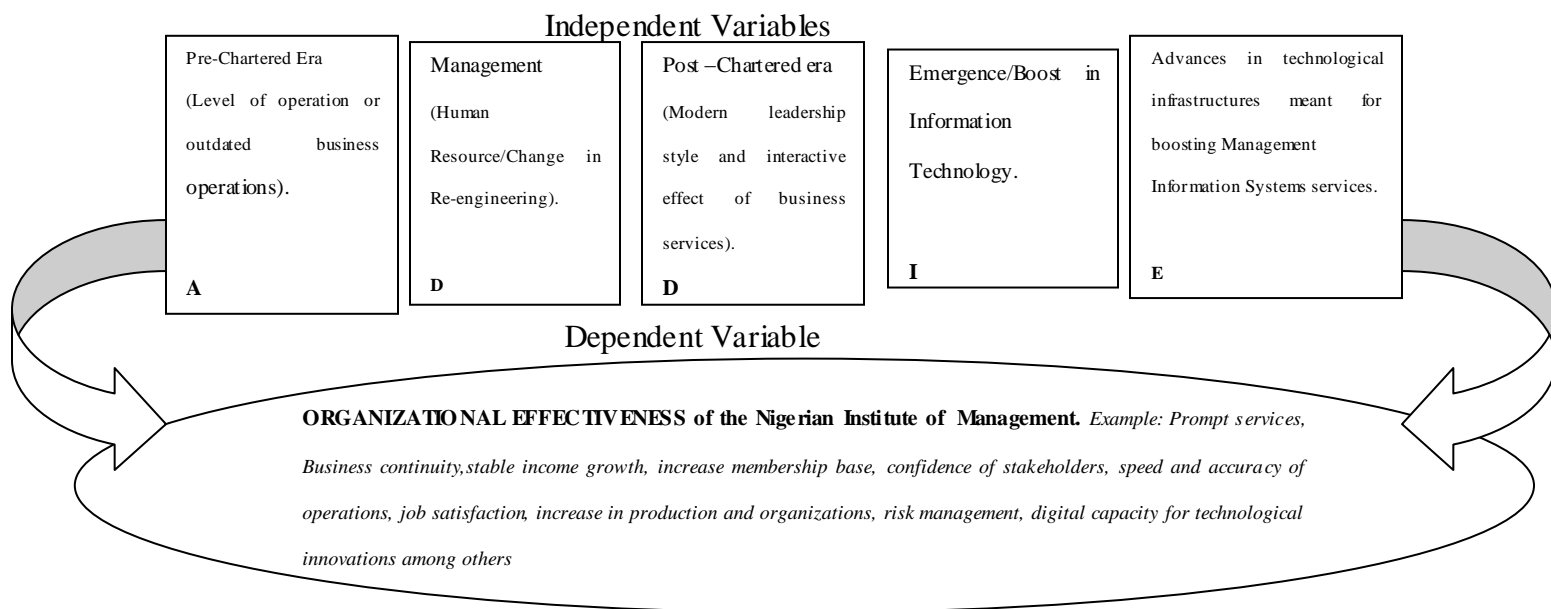
decision making and services impacting Management Information Systems- MIS effectiveness are the independent variables while the dependent variable is the organizational effectiveness.

Beaumaster (1999) wrote on the challenges on MIS implementation and listed the challenges as leadership issues, management process issues, organizational environment issues, technical systems issues and personnel issues. However in year 2002 (as previously mentioned), he further aligned these challenges with development or implementation processes which included *investment analysis*<sup>1</sup>, *risk assessment and analysis*<sup>2</sup>, *life cycle planning*<sup>3</sup>, *system acquisition*. Therefore the researcher was motivated to extend a new ADDIE's model of framework for this study, where the four Beaumaster's variables listed were interconnected and expanded to the study's five variables namely Levels of operations (Beaumaster's investment analysis), Reengineering the structures of HR extents (Beaumaster's risk assessment and analysis), Leadership styles and HRM policy/administration (Beaumaster's life cycle plan), Emergence of IT boost (Beaumaster's system acquisition) and Advanced technology infrastructures -ATI (*indicating MIS Evaluation through ATI investments and continuous usage*).

**Figure 2**

*Conceptual Framework Using ADDIE Model*

*Source: Field Study*



### **Field/Industry Description**

This aspect intends to use the two frameworks (conceptual and theoretical) as a field/industry discourse to justify the identification of management information system as a major influential independent variable (IV) used for achieving organizational effectiveness (as dependent variable-DV) of the Nigerian Institute of Management (case study). Therefore, this study also looks at the challenges on the criteria's to be used to measure the impact of management information systems (MIS) and its implication or correlation with other variables on NIM's organizational effectiveness (OE). To do this, the researcher saw the need to go deeply into the field/industry and thoroughly define organizational effectiveness with a proper description to its underlying factors such as the administrative/ human resources input of the leadership pattern(s) and re-engineering processes in the different eras by pairing them with their level of business operation at the Nigerian Institute of Management.

Thus, *this first part is done literally (or conceptually) by discussing the variable attributes/components in the field industry* which is done in alignment with the research objectives and questions specifically targeted or aimed to resolve the research problems as they correspond with the conceptual framework and significance of the study. Then in addition, differentiate between information technology, information systems and management information systems for the clarity of the readers and also to acquire in-depth knowledge of the research.

### **Field/Industry Description on the Pre-chartered era leadership level of operation**

Over the last century, researchers in management and organizational sciences have redefined leadership multiple times and conducted numerous empirical studies, but leadership remains a conceptual enigma. In our high-tech, knowledge-based world the demands of present-day social conditions and organizational conditions have challenged traditional views of

leadership. Leadership is defined in a variety of ways, but at its most basic level, it is preoccupied with the capacity to persuade people to achieve a common objective (Warneka and Wareneka, 2007). Awareness in leadership and its utility in the context of growing public health nutrition as a discipline and its position in our everyday practice require an understanding of the process and traits necessary to effectively influence people (Reed, 2001). A leader is a person who possesses multiple operations qualities (such as planning, organizing, controlling, motivation and directing) and characteristics that comprise leadership styles and Innovative Approaches to become successful (Renesch, 2001). First, leaders must have a clear vision of what and how to do by using different leadership styles through innovative thinking. The concept is an ideal and unique image or art of seeing invisible things.

According to Munroe (2003), vision is being aware of what the destination is and where you are going citing that the tragic thing is that many people live their whole lives without ever recognizing their vision. He further stated that leadership is never an individual's directing, it's a cooperative effort fostered by listening, gathering a variety of opinions, considering effective strategies and effectively generating a clear vision. The literal definition of leadership is the behavior of an individual when he is directing the activities of a group with a focus on a shared goal. Bearing in mind that to manage resources effectively, a leader should be equipped with the right technology, people and profit are stated by Babylonian King Hammurabi. That ancient manager, issued a code of 282 laws which governed business operations, personal behavior, interpersonal relations, wages and other social matters (Wren et al., 2002). They further noted that King Hammarabi's laws became the first historical mention of accounting. Wren and Bedeian (2009) in expanding the evolution of management, leaders and business level of operations also examined the thoughts of such contemplary writers as Chris Argyris, Henry Ford, John Kotter,

Elton Maya and William Whyte as it was discovered that managers and leaders are still faced with how and when to put resources into productive use (Fertig, 2017).

These researches on leadership perceptions also indicate possible gender and race differences in leadership perceptions. Men viewed leadership as more hierarchical than women, whilst women viewed it as more collaborative (Wielkiewicz, 2000; Komives et al., 2009 & Fischer et al., 2010). A leader is someone who chooses, prepares, teaches and motivates followers with different talent and skills. The leader helps the followers focus on the goals of the organization, leading them to work together eagerly and wholeheartedly to achieve those goals (Covey, 1999). Stephen Covey (2004) further stated the leader (whether man or woman) is made up of four intelligences that work interdependently: Physical intelligence (PQ), Emotional intelligence (EQ), Spiritual intelligence (SQ) and mental intelligence (IQ). In order to live a life of significance, a leader should strive to master and manage his intelligences. Effective management of intelligences leads to greater control of the leader's life and decision making.

Daft (2023) had recently noted that in every interaction between a leader, their followers, and the audience, the leader shows their dedication to values like humility, caring for others, self control, striving for what is fair and good for the group, being kind in thoughts and actions towards everyone, concentrating on organization's mission and the followers' welfare and building and maintaining harmony within the organization (relating to not just the absence of conflict but a place where peace flourishes). These values are based on the seven Beatitudes found in the Holy Bible, from the book of Matthew, chapter 5 the story aligns with the characteristic of the virtuous theory of Servant Leadership.

Kent, Crotts, and Aziz (2001) presented a description of the leader as one who marshals, energizes, and unifies people toward the pursuit of the vision. Kouzes and Posner (2002) added



to the idea of marshaling by stating that leaders need to challenge people to reach for a vision. Further noting that the idea of followers actively working to achieve the vision goes beyond the concept of inspirational motivation, as described in transformational leadership, or the motivational rhetoric of charismatic leaders. Followers have to see the incremental steps that connect the present to the future with each follower understanding his/her individual role in the concerted coordinated effort. According to Fischer and Forester (1993), persuasive rhetoric is the process of using language effectively, and persuasive rhetoric is the process of effective persuasion. A review of the literature on leadership and rhetoric implies to the observer that rhetoric is more in the domain of political communication than general communication, and it should not be restrained to the political arena.

If rhetoric is about the effective use of language and leaders use language (written, spoken, aesthetic, non-verbal, and others.), then leaders must continually engage in the practice. Gellis (2002) goes further to imply that the study of leadership should be done through a rhetorical lens. Interpersonal communication is communication between the communicator and a communicant. This type of communication is considered the most effective way of changing one's attitudes, opinions, and behavior because it is dialogical in nature, in the form of a conversation and has direct feedback (Effendy, 2007). This is supported by Wenburg and Wilmot's (1982) who had earlier cited that interpersonal communication is the process of exchanging information between two people who can be directly identified. Some other terms of interpersonal communication are dyadic communication, dialogue, interviews, conversations, and face-to-face communication (Singh and Lalropuii, 2014).

Kacmar et al., (2003) confirmed the value of interpersonal communication in a study that showed a relationship between higher job performance and more frequent communication with

the supervisor. Their study also showed lower levels of job performance with less frequent communication with the supervisor. Lee (2001) added to the breadth of the value of interpersonal communication by concluding from his study that followers in high-quality leader-member exchange relationships perceived greater fairness in distributive justice that, in turn, led to followers' perception that communication between leaders and followers in the work groups was more cooperative. Campbell, White, and Johnson (2003) posited that leader-follower rapport is a cause of both positive and negative interpersonal communication. To this end, this integrative definition references the positive side of interpersonal communication in that leaders, while not ignoring mass communication, must use one-to-one and one-to-few communication methods to clearly present to the follower what needs to be presented in a manner that helps the follower understand and contribute to the achievement of the organization's objectives.

Active listening is the process of hearing the follower's emotions and intent as well as the spoken words. Rutter (2003) conducted an active-listening intervention in a British boat building firm as a means of changing the leader-follower interaction that hopefully would lead to improved job performance. The results of the intervention showed that performance did increase as did the quality of leader-follower relationships. It is interesting to note that many successful modern leaders believe in the importance of asking questions and listening to responses when it comes to motivating followers. This idea has been highlighted in various popular press accounts (as listed; Leeds, 2000; Marquardt, 2005; Cohen, 2009; Ferrari, 2012; Groysberg & Slind, 2012; Maxwell, 2014). Despite this, business academics have not shown the same level of excitement for the common practice of asking questions and listening (Example; Brink & Costigan, 2015). Following the principles of engaged (Van de Ven, 2007), the value of asking open questions and listening is acknowledged which is referred to as Respectful Inquiry.

McManaman (2005) illustrates: there is power to sow a spirit of anxiety, or fear, or anger, or joy into the hearts of listeners by the words we choose to employ. Indeed, our words express an attitude that is within, and they bring a portion of that interior world of ours to those to whom they are addressed. They are, however, affected further by the quality of our words—and are either the first beneficiary or first victim of the words we utter. That is why they ought to be especially careful of the words spoken among each other. Through the use of positive discourse leaders can establish an environment of joy and as McManaman noted, become the first beneficiary of the communication. Deming (1986) would concur with McManaman in that Deming declared that one of the tasks of leadership is to create joy in the workplace. It is clear that human capital (follower function) is heightened by sociability. The sociability environment created by the leader over time and eventually reciprocated by the follower, yields trust and friendliness (Gao et al., 2011).

Given this reality, Tung and Chang (2011) assert that such dynamic increases participative decision-making and knowledge sharing, thus drastically reducing stress (Dulebohn, Bommer, Liden, Brouer & Ferris, 2012; Lorinkova & Perry, 2017). "Effective leaders encourage followers to speak their minds; they don't expect mindless obedience," said in a critique of Donald Trump's leadership style on the television show *The Apprentice*. In addition to creativity, leaders have the opportunity to determine whether the beliefs of their followers and their own values are in harmony. This is related to the 'alignment of values' component of this integrated definition. The leader may not like hearing criticism from followers, but when followers are encouraged to voice their opinions; organizational flaws can be identified and corrected.

Recent empirical research supports complexity leadership theory by suggesting that effective leaders facilitate the process of sense-making (Pye, 2005) and enable action by encouraging creative problem-solving and new behavior patterns (Fairhurst, 1993; Plowman, Solansky, & Beck, 2007; Kapucu & Van Wart, 2008). Followers should be comfortable with changing roles constantly in a volatile and always-changing environment, which are called permanent whitewater. If the employee's family is included as an environmental variable, then the work-family and work-family conflicts begin to be recognizable as systems issues. Stettner (2000) contended that leaders must have ethics. It may be essential here to infer that leaders should first have ethics and then emphasize ethics in order to increase the level of authenticity. Northouse (2004) took a similar approach where "transformational leadership is a process that alters and transforms persons," he explained. "Emotions, values, ethics, standards, and long-term goals are all addressed, as well as assessing followers' motivations, meeting their wants, and respecting them as entire human beings." (page 169). Of interest though is Bass' (2000) contention that while transformational leaders seek to improve and influence the followers the leader's motive is to benefit the organization but that in servant leadership theories the leader's motive is to benefit the follower.

Patterson (2002) and Winston (2003) both implied that servant leaders will seek the benefit of their followers even at the expense of the organization. While also, bearing in mind, the aspect of the emotional and physical healing of their followers. Researchers have consistently identified twenty characteristics of servant-leadership that Russell and Stone (2002) described. As a result of their repetitive prominence in the literature, their first list consists of functional attributes. Servant-leaders have the following functional attributes and can be observed through specific behaviors at work: 1. Vision 2. Honesty 3. Integrity 4. Trust 5. Service 6. Modeling 7.

Pioneering 8. Appreciation of others 9. Empowerment. The remaining characteristics are identified as accompanying attributes of servant leadership: 1. Communication 2. Credibility 3. Competence 4. Stewardship 5. Visibility 6. Influence 7. Listening 8. Encouragement 9. Teaching 10. Delegation.

Most of the leadership literature is an attempt to understand the leader as an entity with distinguishing characteristics and occupying an inactive status position in relation to those who are not obviously tied to him. In reality, the leader arises as a result of a group's demands and the nature of the circumstances in which that group is seeking to function. After an absolute review of past studies, Stogdill comes to the conclusion that leadership is neither a passive stance nor a collection of attributes. It is more of a working connection between members of a group in which the leader gains status via active engagement and proof of his ability to do cooperative duties. According to Sansom (1998), as referenced by Abbas and Asghar (2010), organizational leadership is described as management's ability to obtain and protect corporate benefits by recognizing employees' needs and company targets and bringing them together to work in a better environment to achieve common goals.

In the Nigerian Institute of Management at the pre-chartered era, leaders blame followers, whilst followers blame leaders. Just as Subordinates blames their managers whilst managers blame subordinates. Hence the traditional means of business operations did not possess multiple qualities and characteristics that comprise leadership styles and Innovative Approaches to become successful as the level of business operations was largely characterized by dissatisfied results obtained using rigorous manual means which made leaders most likely to make mistakes. This contradicts with John Maxwell (2001) view of leadership, as the process of influencing people so that they will strive enthusiastically towards the achievement of company's goal or

converting vision into reality via strategic thinking and action. However the dissatisfaction became positive and subsequently lead to the Post-chartered revolvment of its company's goal.

### **Field/Industry Description on the Post-Chartered era Different Leadership Styles of Operation**

In order to achieve company's goals, a leader sorts out harmony with the subordinates to accomplish social influence. In general, the term "leader" refers to someone who directs or influences others to accomplish specific goals. In today's enterprises, effective leaders who have a clear understanding of complexities involved in fast-changing global environment are crucial. A highly structured task and a good leadership relationship will result in high employee effectiveness. Leadership effectiveness and responsibility are important in terms of performance, leadership behaviors, and attitudes; according to Barchiesi and Bella (2007). Behavioral complexity and dynamics appear to have an impact on perceptions of leadership, as high leadership indices are associated with better performance and organization reputation. A mechanism of leadership styles on team invention was investigated at private research centers, looking at the link between different leadership styles and team innovation, as well as the mediating effects in sharing deep understanding and team togetherness.

The connection among the Organizational Culture and Style of Leadership was examined, thereby consisting of factors like Organizational Culture, Charismatic Leadership, Transformational Leadership and Transactional Leadership. Voon et al. (2011) further found out the influence of leadership styles on employees' job satisfaction in public aspect of enterprises in Malaysia. They used factors like salaries, job autonomy, job security, workplace flexibility. Out of these factors, they found that transformational leadership style has a stronger connection with job fulfilment. Fang Chung – Hsiung et al. (2009) identified that leadership style can affect

company's commitment and work gratification positively and work gratification in turn can affect company's commitment and work performance positively. Leadership is largely culturally orientated, embracing traditional beliefs, norms and values and a preoccupation. According to Goh Yuan et al. study (2005), leadership style is significantly influenced through the immediate and extended family, clan and tribe of the leader.

This study finds the linkages between enterprise leadership with business ethics, thereby making a contribution toward increasing the status of work life which may have a positive influence on both members of the institution and also the community at large. Lu Ye et al. study (2011) explained employees perceptions about the transactional or transformational leadership style of executive, both have highly positive connection in regards to perceptions about executive's encouragement factors of its innovation climate. Podsakoff et al. (1990) said that leadership behavior can affect trust and gratification of employees to a company and company's citizenship behavior further enhances connection between leadership style and a company's direct commitment.

Transactional leadership is considered as the subordinates' rewards through their efforts and performance. Guang-Yi and Zhi-sheng (2008) compared Transactional leadership to Transformational leadership. Transformational leadership theory is deemed to improve the subordinates' performance by changing the motives and values of employees. Bass divided leadership style into transformational leadership and transactional leadership. Transformational leadership has the characteristics of individual influence, spiritual benefits and intellectual stimulation. They often take individual into consideration, establish vision and aim inside, create an open culture, trust the staff to reach their goals and give full play to staff's potential. Transactional leadership is focused on staff's basic and external demand, the relationship

between leaders and subordinates is based on the contract. They tend to attain organizational goals by pacific job roles and mission design. Their basic purpose is to maintain a stable organization. Leadership style is the relatively consistent pattern of behavior that characterizes a leader". Today's organizations need effective leaders who understand the complexities of the rapidly changing global environment as different leadership styles may also affect organizational effectiveness or performance.

According to Sakiru et al. (2013) the success or failure of proper organizations, nations and other social units has been largely credited to the nature of their leadership style. Jeremy et al. (2012) explained in manufacturing company, leadership is really a process for impacting on others commitment towards recognizing their full potential in achieving goals, vision with passion and integrity. The study also revealed that the associations between leader and worker give additional factors to employees' satisfaction which the leadership styles are considerably affected by the leader's. However from the available literature we can also summarize various aspect of leadership styles along with their effect on employee fulfilment, team work, organizational change and employee performance.

**Transformational leadership styles:** this involves followers development as well as their needs as managers here concentrate on the growth and development of the value system of employees, their inspirational level and moralities with the preamble of their abilities. Bass (1999), cited that the aim of transformational leadership would be to transform people and organizations in a literal sense - to alter them in the mind and heart. Enlarge vision, insight and understanding clarify reasons make behavior congruent with values, concepts and brings about changes which are permanent, self-perpetuating and momentum building.



According to Bass and Avolio (1994), transformational leadership happens when leaders become wider and uphold the interests of the employees, once they generate awareness and acceptance for the purpose and assignment of the group, so when they blend employees for the benefit of the group, they adapt company's goal and focus above personal objectives. Therefore, transformational leaders also, encourage followers to view problems from new perspectives, provide support and encouragement, communicate a vision, and stimulate emotion and identification. Lopez-Dominguez et al. (2013) said that transformational leaders are able to define and articulate a vision for their organizations and their leadership style can influence or "transform" individual-level variables such as increasing motivation and organization-level variables, such as anticipating change behaviours and mediating conflict among groups or teams.

Podsakoff et al. (2003) disclosed transformational leadership had active influence on individual and organizational outcomes such as employee satisfaction and performance. Stronger stages of transformational leadership were linked to increased stages of group potency. Wang et al (2011) discovered that there is a positive connection between transformational leadership and the performance of individual followers. Furthermore, the study also found that transformational leadership and organizational performance of teams are positively correlated with improved organizational performance. Xu and Wang (2010) also said that performance depends on skills, abilities, knowledge and motivation that are focused on a specific behavior. The study conducted by the above mentioned authors indicated that transformational leadership enhances the overall development of followers. The followers of transformational leadership associate with a self-defining and satisfying relationship with an individual or group. The idealized and behavioral

charisma of transformational leaders inspires the followers to associate with the leader (Jyoti & Bhau, 2015).

The personalized association between a transformational leader and the employees creates a climate in which the employees are comfortable and hence, their total performance is positively correlated with their success. Transformational leadership and organizational success can therefore be attributed to positive organizational performance (Jyoti & Bhau, 2015). Sofi and Devanadhen (2015) stated that transformational leadership has a major effect on the organization's success. They conducted the research on the banking organizations with the help of statistical tools such as SEM and SPSS, reaching the above conclusion indicating how transformational leadership has a direct effect on the organization's success.

**Transactional Leadership styles:** this focuses on the trade among the leader and follower, where followers are rewarded for meeting specific goals or performance criteria. The leader first establishes the link between performance and reward, then encourages subordinates to improve their performance through appropriate responses. In organizations, transactional leadership involves exchanges between managers and subordinates. This style of leadership is based on an understanding of rewards and objectives among the workers and their supervisors. According to Bass and Avolio (1994), transactional leaders motivate subordinates by offering rewards, taking corrective actions, and enforcing rules. Bernard Bass (1999) explained that transactional leadership relies on contingent reinforcement, such as positive rewards or different forms of management-by-exception.

Transactional leaders motivate followers through exchanges, such as completing tasks in exchange for rewards or preferences. Kahai et al. (2003) discovered that group efficacy was higher under transactional leadership. Burns (1978) noted that transactional leaders focus on task

completion and employee compliance, relying on organizational rewards and punishments to influence employee performance. A study by Longe (2014) showed that transactional leadership has a good effect on organization's success, creating an environment where organizational plus human capabilities are maximized through physical and non-physical assets. This style helps create an optimal performance society and communicates a compelling vision that enhances overall organizational performance (Longe, 2014). Sofi and Devanadhen (2015) on the contrary discovered that this style of leadership does not affect organizational performance directly, as it does not also inspire creativity and innovation with employees, leading to performance below the organization's expectations.

**Charismatic leadership style:** Charismatic leadership is regarded as one of the most effective leadership styles, in which charismatic leaders develop a vision and expect the followers to follow and execute it. This style of leadership encourages innovation and experimentation and is thought to be motivating for staff. The main disadvantage of this style of leadership is that the followers are entirely dependent on the leader and once the leader leaves the organization, they become directionless. The problem worsens as charismatic leaders fail to prepare their juniors to act as their replacements in the future and this results in pleased followers, but few future leaders (Germano, 2010) as it can have a broad detrimental impact on company revenue.

Ojokuku et al (2012) also stated similar results through their research as they conducted quantitative research on the employees of twenty banks based in Nigeria through a survey questionnaire. The findings of their research suggested that charismatic leadership bears a negative relationship with organizational leadership as inspiration and commitment of staff are not seen here enough to get the required result out of them (Ojokuku, et al., 2012). In the view of Choi (2006), charismatic leadership assumes three core components: envisioning, empathy, and

empowerment. He argued that a charismatic leader's envisioning behaviour influences the followers' (employees) need for achievement, the leader's empathic behaviour stimulates the followers' need for affiliation, and the followers' need for power is enhanced by a charismatic leader's empowerment practices.

Michael (2010) posits that this type of leadership paves way for fruitful atmosphere in terms of adventurous and commitment as it also inspirational to attracts followers. Zervas and David (2013) stated a charismatic leadership involves setting an example instead of using instruction manual and intentional staff development, establishment of high standards, and through imparting enthusiasm. They argued that people follow a charismatic leader because of what they believe the leader can do, not by his leadership skill. The above view gives credence to the assertion made by Stephen (2013) that followers of charismatic leaders perceive them to be endowed with qualities not found in ordinary leaders. He stresses that this perception of the charismatic leaders' qualities motivates the followers to a broader commitment including job performance in comparison to the usual case. Employees generally feel better about themselves and their circumstances when working with charismatic leadership.

This is because charismatic leadership has the potential to help an organization rise above unsatisfactory performance and internal cultural restrictions to develop a positive interface with its operating environment (Stephen, 2013). Zervas and David (2013) also pointed out that these leaders tends to use force if a subordinate fails to act accordingly as well as if there is an issue. Also in year 2013, Alan posits that charismatic leaders believe more in themselves than in their teams. He stresses that this "attitude" can create the risk that a project or even an organization might collapse if the leader leaves. House and Howell (1992) cited in Stephen (2013) acknowledge that attitude of this leader can inflict conflict and chaotic alignments in the

administrative and result processes, and can increase the risk levels of the enterprise. Moreso earlier, O' Connor et al. (1995) had noted that organizational members can be subjected to artificial control and deceit by charismatic leaders. According to Stephen (2013), previous researchers like Conger and Bryman had stressed that charismatic leaders are unlikely to be able to enforce the positive characteristics of their leadership into the company to proceed beyond their incumbency. They posit that it is rare for charismatic leaders to be replaced successfully by leaders with the same capacity for the company to transform.

The above review has revealed the positive and negative aspects of charismatic leadership. For an enterprise or company seeking to retain its critical and talented workforce, it is therefore suggested that socialized charismatic leadership is encouraged. This is because an effective socialized charismatic leader can revolutionize a company as well as also inspire workers to enhanced performance unlike the personalized charismatic leader that focuses on his personal advancement and interest (Stephen, 2013). Such feeling of invincibility by the personalized charismatic leader can easily lead to disappointment, protest and apathy within even the most talented employees, thereby ruining the employees' interest and company's objectives. Thus, further hampering performance and instigate employees' turnover of the enterprise.

**Democratic leadership style:** Zeeman (2019) cited Tannenbanum and Schmidt's leadership continuum to have defined democratic leadership as the leadership in which decision-making is decentralized and is shared by all the subordinates. In the democratic leadership style, the potential for weak execution and poor decision-making is high. However, democratic leadership is also known to motivate employees to perform better, as their views and opinions are valued. Another big problem associated with democratic leadership is the assumption that everyone involved has an equal stake in the decision-making with a shared expertise stage (Rukmani, et

al., 2010). The study by Elenkov (2002) indicated that democratic leadership has a positive impact on organizational performance. The democratic leadership encourages workers in choice making initiatives as well as sharing with the board and their supervisors. Here, praises along with criticism are given objectively and also diligence is also developed within the workers.

In year 2016, Bhargavi and Yaseen had also analyzed the effect of this type of leadership on an enterprise output. As per their findings, this leadership highly influences the company's success due to it provides opportunities for workers to explore and actualize their innovative minds while still remaining involved in critical choices. Also it sets the pace for tomorrow's leaders and assist the company plan ahead. Choi (2007) also stated that a democratic leader is the one who focuses on large numbers of members discussion and participation thereby favoring the impact on the successful followers on their leaders. Therefore, this style can be used for improving organizational performance as well as efficiency. Hence, Elenkov further stated that democratic style has a good effect on the successful company's output.

According to Ushie et al. (2010), when a manger uses a democratic leadership style, they give their authority to their subordinates but still hold overall responsibility. Zervas and David (2013) and Iheriohanma et al. (2014) believed that this type of democratic leadership style encourages responsibility, flexibility, and high morale among employees, leading to better performance that will result in improved employees' performance. They posit that when a leader uses a democratic leadership approach, it can boost employees' drive and enthusiasm and also help them feel more connected and committed to the company. They also believe that when employees are involved in making decisions and planning, they are more likely to have a better understanding of what the organization really needs. This means that when employees are under

democratic leadership, they feel trusted and this helps them work together as a team, keep their morale high and get rid of any negativity.

Even though democratic leadership has its advantages, there are still some challenges. Donna (2011) pointed out that democratic leadership has a few disadvantages that need to be addressed in order for it to be effective in the organization. He highlighted five main difficulties of using the democratic leadership style which are: competency, handling crises, reaching consensus, fake-participation, and adherence. He also stated that addressing these challenges, organizations can take full advantage of the benefits of this leadership style like improved employee performance, satisfaction and retention rates. In the workplace, these advantages arise due to the democratic leadership style allows employees to feel empowered, be creative, take initiative, participate, grow, develop and plan for their future with the organization. These are key factors that motivate empowered employees, especially in this current globalized and knowledge driven economy.

**Autocratic leadership style:** Autocratic leaders are classic and bossy in nature. The autocratic leaders want their subordinates to work according to them. Typically, autocratic leaders retain the decision-making rights with them (Obiwuru, et al., 2011). The autocratic leaders force their members to carry out operations and tactics according to the narrow way they are guided. Iqbal, Anwar, and Haider (2015) carried out a research to establish the role of leadership styles on a company's output. The study stated that autocratic leadership is also called the authoritarian style. The autocratic leaders are not innovative for they encourage less diplomacy interacting. Thus adversely influencing the inspiring and gratifying effect of the workers. The autocratic leadership style is however, known to be effective in the short term. Autocratic leadership restricts workplace socialization as well as interactions needed for a harmonized organization's

success. For the autocratic leadership also leads to organizational disagreements and adversely influence the total company's production output (Iqbal, et al., 2015).

Keeping in mind that on the contrary in year 2016, Bhargavi and Yaseen suggested that the autocratic style possess a high effect on a company's success and further noted that this leadership style is more suitable when the projects are to be completed within provided deadlines. Igbaekemen and Odivwri (2015) also carried out research on the role of leadership styles on the organization's success. They stated that an autocratic leader is the one who determines the activities, techniques and policies for the employees and expects the employees to follow the same. In addition such leaders do not have much faith in their followers. While earlier in year 2013, Zervas and David (2013) had suggested that these leaders achieves goals by sharing a clear and inspiring vision, ensuring that this vision is incorporate into strategic planning and using it to direct actions across the organization. They emphasize that autocratic leaders give clear instructions, closely track progress and persuade employees about the managemnt's stance. Gordon (2013) mentioned that companies led by autocratic style of leaders experience issues like employee absence and high turnover rates. She argued that employees face issues with autocratic leadership because managers do not trust them, use punishment or threats to motivate them and do not value their input.

She emphasized that autocratic leadership can have a bad impact on employees' morale. For skilled and specialized workers may act disinterested, bitter, and may even resign when they are led by an autocratic leader. Sometimes, employees might feel resentful and try to find ways to get their managers in trouble which could make the manager paranoid. According to Pugh (1971) as mentioned by Ushie et al. (2010), an autocratic leadership style leads to two types of behavior among workers. It either makes them aggressive or causes them to become apathetic



and withdrawn. Despite the drawbacks of this leadership style, Swarup (2013) argued that it is not entirely negative. He believes that sometimes it is the most effective style to use in situations where new or untrained employees are unsure of what tasks to perform, or when there are high-volume production needs on a daily basis. In such cases, detailed orders and instructions are necessary for effective supervision. Additionally, an autocratic leadership style may be necessary when a manager's power is challenged, the workplace is poorly managed, or when work needs to be coordinated with another department or organization.

However, Swarup also mentioned situations when an autocratic leadership style should not be used. This includes when employees become tense, fearful, or resentful, when employees expect their opinions to be heard, or when there is low morale, high turnover, absenteeism, or work stoppage. Overall, an organization with an autocratic leadership style is likely to experience discontent among employees, leading to low performance and high turnover. In today's knowledge-based economy, employees prefer organizations that encourage creativity and innovation to showcase their talents and skills. This is important for organizational effectiveness as teamwork and idea sharing help strengthen relationships and increase productivity. Providing employees with opportunities for creativity and innovation in the workplace leads to optimal performance and higher retention rates.

**Bureaucratic leadership style:** Here the leaders compel their workers to follow specific rules and regulation by dedicating to work processes instead of to people management, which can make them seem distant. However, this approach is not very effective in motivating and developing employees. Instead, these leaders mainly focus on ensuring tasks are completed in an organized manner. Research has shown that bureaucratic leadership can have a negative impact on organizational performance. Bureaucratic leaders do not always encourage employees to work

towards improving their overall performance. This leadership style is only beneficial when tasks require a structured approach over a longer period of time.

According to Michael (2010), in bureaucratic leadership, policies dictate how tasks are executed and impact on their outcomes, objectives and company's strategies. Bureaucratic leaders prioritize procedures over employees, which can make them seem disconnected and resistant to change. Swarup (2013) suggests that bureaucratic leadership can be effective in specific situations, such as when employees are performing repetitive tasks, need to adhere to certain standards, or are working with equipment that requires specific procedures. However, it can be ineffective when employees struggle to break old habits, lose interest in their work or colleagues, or become complacent about organizational policies.

The drawback of bureaucratic leadership is that it overlooks the importance of motivating and developing employees. Relying solely on policies can lead to employee demotivation and hinder desired outcomes. This can ultimately impact performance and lead to the company's high rates of turnover.

**Laissez-faire Leadership Style:** Laissez-faire is a French term that means "leave it be." It refers to leaders who let their people work independently (Alan, 2013). Originally this relates to mercantilism to indicate an economic system that works best without government interference. This style of leadership, also known as hands-off, involves managers providing little to no direction, giving employees maximum freedom. In laissez-faire leadership, all authority is given to employees to set goals, make decisions, and solve problems on their own. This leadership style is seen as a light-weight approach by some, as leaders limit their involvement with group members. It involves giving employees the freedom to make decisions without much guidance. The motive behind this leadership style is that leaders believe employees perform best when

given the chance to take on responsibilities in their own way. A laissez-faire leader believes in giving employees freedom of choice and leaving them to do their jobs as they see fit.

Here the belief states that workers know their jobs best and should be left alone to do them. In a laissez-faire work environment, there is minimal participation, involvement, or communication among the workforce. Job requirements, policies, and procedures are typically shared from employee to employee in this type of leadership, leading to processes being out of control in managing the workforce. Alan (2013) emphasized that a laissez-faire leadership style can work well if the leader keeps an eye on performance and regularly gives feedback to team members. This leadership style is most effective when team members are experienced, skilled, reliable, motivated, and able to work independently (Alan, 2013; Kendra, 2013; Swarup, 2013 and Stogdill, 1974).

According to Swarup (2013), the laissez-faire leadership style should not be used when it makes employees feel uncertain when the manager's input is not available. For example when the manager cannot provide regular feedback to show employees how they are performing, or when the managers fail to recognize employees for their good work, also when the manager does not understand his responsibilities and relies on employees to cover for him. Critics have pointed out the negative impact of the laissez-faire leadership style within an organization. Alan (2013) stated that this leadership style can be harmful if team members struggle to manage their time or lack the necessary knowledge, skills, or motivation to do their work effectively. Ronald (2011) argued that laissez-faire leadership can result in disorder, confusion, and inefficiency. Despite these drawbacks, Alan (2013) also mentioned some positive aspects of the laissez-faire leadership style. He suggested that this style allows team members a great deal of freedom can lead to high work fulfilment, and increased company's productivity. This indicates that if

employees are satisfied with their work under laissez-faire leadership, it is likely to improve their performance and increase their loyalty to the organization.

**Situational leadership style:** The concept of situational leadership was first introduced by Paul Hersey and Kenneth Blanchard in 1969 (Richard, 2013). Originally known as the "life cycle" theory of leadership, it was later renamed as situational leadership theory in 1972 (Mwai, 2011). In 1985, Blanchard redefined the model and it became known as the situational leadership (SL11) model (Qin, 2011). The situational leadership approach is based on the idea that each leadership situation is unique and requires a specific combination of leadership, followers, and circumstances (Richard, 2013). The proponents of situational leadership believe that a leader must adapt their leadership style to the specific needs of a situation. This means that a leader's actions should be based on the specific circumstances (Peng-Hsian, Hsin, and Thun-Yun, 2008).

Rotimi (2013) stated that according to the theory of situational leadership, there is no one-size-fits-all leadership style for every workplace situation. Instead, effective leaders adjust their leadership styles to suit each situation. A leader's style changes depending on the situations they face and the environment they are in. It suggests that managers should use different leadership styles based on the different situations they encounter. This means that leaders can assess specific challenges in a situation and choose the most suitable leadership style to address them. According to Peng-Hsian et al. (2008), the situational leadership model emphasizes the importance of a leader being flexible and able to adapt their leadership style to meet the current needs of their followers. They highlight the need for a leader to recognize and adapt to the varying levels of readiness in their followers. They also suggest that a leader should know when and how to use the right style to support and motivate employees in the workplace. The situational leadership model consists of two key components: development level and leadership

style. It suggests that the leadership style should align with the stage of followership progression. In this model, leadership behavior depends on both the leader's characteristics and the follower's characteristics.

The progression stage involves the follower's dedication and competence (Qin, 2011). Competence refers to the knowledge and skills a follower has for a specific goal or task, while commitment is the follower's motivation and confidence in the goal or task (Mwai, 2011). Leadership style is divided into two types of behavior: supportive behavior and directive behavior. Supportive behavior is people-oriented and involves two-way communication focused on emotional and social support, while directive behavior is task-oriented, focusing on goals and actions to be taken (Qin, 2011). A critical review of this style suggests that it creates a supportive and motivating environment for employees based on their individual needs. Implementing this leadership approach can boost morale among employees and foster a productive environment that reduces employee turnover.

**E-leadership style:** All of a person's leadership responsibilities and actions are carried out through electronic channels under e-leadership. As a result, the main difference in an e-leader and the typical one is where they perform their functions (Kalantz, 2020). By defining e-leadership and investigating how it affects leaders, followers, teams and the enterprise, in the year 2003, Avolio and Kahai explored how technology is impacting leadership in companies. E-leadership, according to the authors, is more than simply a continuation of the typical physical form of leadership; it is a fundamental shift in how leaders and followers interact inside and between businesses.

Even in this changing setting, the authors emphasized that some leadership basics will almost certainly remain the same. The authors defined e-leadership as a social influence process

mediated by technology from a business and management perspective. The authors wrapped up their paper with several takeaways from their e-leadership research. The authors characterized e-leadership as a silent revolution that resulted in the wiring of businesses to the point where many critical human interactions are now mediated by information technology. Leadership, according to the authors, is a dynamic, resilient mechanism nested inside a wider organizational structure. They went on to say that well-defined organizational structures determine the anticipated connections amongst employees.

Avolio & Kahai (2003) also noted that ICT (information and communication technology) implements these same organizational structures electronically across time and space, where not only does information technology facilitate communication between leaders and followers, but it also facilitates the collection and dissemination of data needed to support organizational work. Furthermore, they stated that leaders may lead entire projects from a distance and interact with followers or team members solely through information technology. E-leadership takes shape in the virtual context where collaboration and leader-follower interaction are mediated by corporations or group of individuals acting together, also supervises or give instructions on the execution of ideas or decisions. E-leadership also share some of the concepts of the traditional face to face type of leadership as it can be inspiring when communicating through emails, video calls and any other electronic means that is exemplary by achieving various organizational teams that operates electronically and is still able to excel in the organizational goals periodically.

These shared views of the leadership mediated by information technology gave the authors confident that the same style and content can also be exhibited by the traditional face to face leadership. The authors also mentioned that although access to information and media has changed, the followers of this modern age have the same access to the information which their

leader have. Thereby adding pressure and awareness on the leader to be up to date with information and be ready with the latest facts in order to properly lead and justify their position whenever called upon. Bearing in mind that this modern world, a disgruntled employee can easily express their anger by notifying hundreds or thousands of colleagues by clicking on one computer keyboard option, the authors emphasized on the need for e-leaders to mix and balance their concept with the traditional face to face leadership by openly communicating their intents and adapting new trends in technology that will be impactful to others.

As the environments may appear to require leaders to cope with paradoxes and dilemmas, and with the associated behavioural complexity generated from the process of changing the old practice to the new technology, another author Gurr (2004) argued that although e-leadership is a relatively recently emerged concept with continuing conceptual ambiguity, there are significant differences between leading non-electronic companies with those that have technology-mediated environments. Though more research may be truly required, even at this early stage in the development of e-leadership it is quite apparent that leadership in technology-mediated environments as a special niche is important to us.

Noting that the E-leader must be obligated to establish an appropriate social climate through sustained communication, and be able to convey exemplary interpersonal skills through the associated technology. E-leadership also poses a greater emphasis on dispersed leadership for in some situations, such as anonymous groups, formal leadership may be detrimental to group performance. Earlier, Antonakis and Atwater (2002) noted the term leader distance has been subsumed in a number of leadership theories. For example; Distance can be a physical distance as well as a social distance. The two types of distance are studied, with physical distance resulting in the need for virtual leadership.

The authors reviewed the available literature and demonstrate that an understanding of leader-follower distance is vital to the task of untangling the dynamics of the leadership influencing process. As they categorized one type of distance leadership as virtually close leadership (which is also known as a E-leader), and noted that virtual communication may result to several advantages and disadvantages. The most widely cited e-leadership term was provided by Avolio et al., which has gained solid footing and acceptance in the mainstream of leadership research (2014, pp107). They define e-leadership as "a social influence process mediated by AITs [advanced information technologies] that produces a shift in attitudes, feelings, thinking, behaviour, and effectiveness in both proximal and distal contexts".

Thus, e-leadership is an abstract term explaining either using ICTs to induce changes in the behaviours and mental states of followers or not using ICT for such. E-leadership, however, is not just about specific tools and communication events; it is about creating an increasingly pervasive digital environment that leads to high levels of effectiveness, no matter how that is defined: high productivity, low turnover, high morale, among others. Some common problems reported in the literature regarding digital environments includes email and data overload, worker alienation and weak social bonding, poor accountability in teams and use of time, low trust, insufficient technological competence, and an inability to provide persuasiveness and deep change based on commitment rather than commands. In response to these changes, company's researchers have begun to talk about e-leadership to refer to leaders who conduct many of the processes of leadership largely through electronic channels. Leadership in the electronic age is surely different.

As the impressive and seemingly constant parade of developments in computer and communications technology continues to change our world, manpower planning on inquiries



which changes (or not) were encountered still persist. One tremendously important context for leadership is the impact of e factor on leadership. It changes the way information is gathered, stored, understood, and shared, which in turn changes how people are influenced and how decisions in enterprises are made. According to Avolio and Kahai (2003), some specific changes brought about by information technology that impact leadership and power bases include:

1. Access to information and media has been transformed.
2. Increased interconnectedness among workforce.
3. Easier communication and connection with others.
4. Communication is more lasting than before.

The main difference between leadership and e-leadership is that e-leadership occurs in a setting where work is influenced by information technology. In this setting, a leader's communication with followers as well as in sharing of details both happen through technology process. As the differences may lie on key factors such as; how feeling the leader's presence is understood, as well as the extent, speed, lasting impact, and perception of a leader's communication. Despite the mentioned differences, e-leadership focus is also to strengthen how organizational members correlate with each other as defined by the organization's structure.

### **Attributes of a good leader**

Leaders who can be trusted gain respect from those around them. Being a good leader involves being, knowing, and doing certain things. A leadership framework outlines these elements. Clark (2000) defines 10 attributes of a leader which are:

1. BE a professional: Be loyal to the organization, perform selfless service, and take personal responsibility.
2. BE a professional who possess good character traits: Honesty, competence, candor, commitment, integrity, courage, straightforward, imagination.
3. KNOW the four factors of leadership - follower, leader, communication, and situation.
4. KNOW yourself: strengths and weaknesses of your character, knowledge, and skills.
5. KNOW human nature: Human needs and emotions, and how people respond to stress.
6. KNOW your job: be proficient and be able to train others in their tasks.
7. KNOW your organization: where to go for help, its climate and culture, who the unofficial leaders are.
8. DO provide direction: goal setting, problem solving, decision making, planning.
9. DO implement: communicating, coordinating, supervising, evaluating.
10. DO motivate: develop moral and esprit in the organization, train, coach, counsel.

Therefore as seen literally, in the Post-Chartered era of the Nigerian Institute of Management LEADERS Listen actively, Empathetic to issues at hand, Attitudes are positive and optimistic, Delivers on promise and Commitment, Energy level is at times high, Recognizes self doubts and vulnerabilities, Sensitivity to others' needs. Hence the modern business input introduced at the post-chartered era possess the multiple qualities and characteristics that comprise leadership styles and Innovative Approaches to become successful.

### **Field/Industry Description on how leadership affects organizational effectiveness**

An assumption underlying the study of leadership is that leaders affect organizational performance and effectiveness. Leaders, through their actions and personal influence bring about change. People, who control organizations the highest level executives, make the same assumption. A frequent antidote to major organizational problems is to replace the leader, in the hope that the newly appointed leader will reverse performance problems. For example; the Leader in Action: Paul Anderson was brought in at a time when his organization was not doing well and with a range of well-thought-out strategies brought about effective change. The influence of leadership on an enterprise success is also important for leadership is viewed by some researchers (example; Zhu et al., 2005) as a key driving force in facilitating a company's effectiveness.

Recalling that effectiveness in leading has been described as a potent source for management development as well as for sustained competitive advantage in promoting a company's success (Rowe, 2001; Avolio et al, 1999 & Lado et al., 1992). Citing the transactional style as an example, for it helps achieve companies target more efficiently when linking work success to valued rewards through ensuring employees have the resources needed to get the job done (Zhu et al., 2005). Whereas, the visionary aspect of leadership create a strategic futuristic insights, then communicate further through framing with the use of metaphor, consistent reshaping of the insight by building commitment in line with this insight (Avolio et al, 2014 and 1999). Also, some scholars (like Zhu et al., 2005) had suggested the visionary aspect of leadership will result in high levels of commitment, loyalty, gratification thereby promoting the success of that company in its field of competitors. This is in line with Mehra et al. (2006), who had cited that in the event of some companies seeking efficient ways to enable them to

outperform others, a longstanding approach is to focus on the effects of leadership. This is because team leaders are believed to play a pivotal role in shaping collective norms, helping teams cope with their environments, and coordinating collective action.

This leader-centered perspective has provided valuable insights into correlating leadership with team performance (Guzzo and Dickson, 1996). Some researchers (e.g. Judge, et al., 2002b; Judge and Piccolo, 2004; Keller, 2006; McGrath and MacMillan, 2000; Meyer and Heppard, 2000; Purcell et al., 2004; Yukl, 2002) have begun to investigate the strategic function of leadership, as well as how to apply leadership concepts and behavior to improve company's success. Keeping in mind that intangible assets such as leadership styles, culture, ability and competency, and motivation are increasingly viewed as essential sources of strength in enterprises which integrates people, processes for company's success, this is the case (Purcell et al., 2004, p.1). According to previous studies, leadership paradigms will have a direct impact on customer satisfaction, employee satisfaction, and cost analysis.

Despite this, the impact of leadership on company's success has not been thoroughly researched. Some have criticized leadership research for focusing too much on superior-subordinate interactions at the expense of various other roles that leaders undertake, as well as the company's ecosystem variables that are critical in mediating the leadership-performance link. Another issue with current leadership studies indicates various outcomes which are mostly dependent based on the size used for analysis. Micro-level study, which involves leader's relationship with his or her subordinates and immediate superiors, and macro-level research, which focuses on the entire company and its surroundings, were also distinguished. Other researchers believe leaders along with their styles has various roles on subordinates involved and towards the company's success and its effectiveness ( example; Tarabishy, et al., 2005).

### **Field/Industry Description on Organizational Effectiveness**

Richard *et al.* (2009) cited that Organizational effectiveness (OE) captures organizational performance and other broader measures for consideration. Different scholars had tried to deeply evaluate and research on organizational effectiveness despite their various research background, however the outcome had lead to a variety of indicators reflecting their in depth analysis on their study. This observation is in agreement with the dominant methods used to measure Organizational effectiveness, namely performance ratings from supervisors and peers (Newman et al., 2004). Although Motowidlo et al (1997), highlight this evaluative idea in defining the effectiveness domain as similar to contextual performance for they still maintain that job performance are behaviours in the individual task differences and not necessary the result alone.

The scholars of business policy and strategic management almost fully rely on financial measures of effectiveness (Hitt, 1988, p.29), meanwhile there are other diverse measures existing such as morale, absenteeis, low sense of remorse or regret that other scholars have adapted for assessing organization effectiveness (for example; Allen et al., 1979). Furthermore, marketing scholars have utilized both economic and non economic as well as generic measures to assess effectiveness (e.g. Katsikeas et al.,2000). Also, another scholar Morales (2014) defined organizational effectiveness as the efficiency with which an association is able to meet its objectives. This means doing business without waste and making profits.

The Nigerian Institute of Management- NIM (2020) major objective as a professional body is to regulate and promote the growth of management profession in Nigeria. This mandate was truncated during the pre-chartered days in the early 60's to late 80's due to use of primitive methods of operations as the organization slowly adapted to change. However, despite the several theories on organizational effectiveness and the Nigerian Institute of Management's

demanding mandate, the approaches and logical models for achieving organizational effectiveness (OE) have been a challenge as the institution's barriers for change such as fear of the unknown, ineffective leadership, broken communication, slow pace of work and undue complexity kept on resurfacing.

The barrier to the needed change was far from insurmountable and to be turned into the stepping stones to success by embracing these changes and reaping their reward. Keeping in mind, effectiveness of a company is an organic aspect involved in leadership and leadership is seen as a collective phenomenon, a resource for the performance and survival of a collectivity. In this study, to measure the effectiveness of the institute (which is the dependent variable acting on management information systems influence), it will be conceptualized in the five components namely: the advanced technological infrastructures, the re-engineering processes and structures, the emergence of information technology services (information technology and systems), pre-chartered status era (using level of business operations) and post-chartered status era (using the modern leadership style and administration/change management) which interconnects as an independent variable bond.

### **Field/Industry Description on Re-engineering through Information Technology**

Information technology (IT) terms refers to anything related to computing technology, such as networking, hardware, software, Internet services, or people working with these technologies. Several scholars had defined information technology in this regards or something similar. According to Daft (1997) Information technology can be defined as the hardware, software, telecommunications, database processing along with various information-processing technologies used to store, process, and deliver information. Also another scholar defined

Information technology as the technical components, typically organized as hardware, software and communications, used to make up an information system (Bytheway, 2014).

Information technology is commonly used to assist managers with direct control over business functions, personnel and other resources. As managers oversee resource coordination and allocation, it can be difficult to coordinate business functions across various projects.

Bhattacharjee and Shrivastava (2018) has also recently supported the notion of the challenges citing that corruption plays a major role in the effective use of Information technology at national level. Citing that ICT laws moderate the effects of IT usage on certainty while ICT also reduces corruption by increasing the certainty. Information Technology is clearly considered as a key growth area in this century, specifically, in a dynamic and highly competitive business environment which requires utilizing advanced information technology tools to improve efficiency, cost effectiveness, and deliver high quality products and services to customers (Allen & Morton, 2004). Information technology is also considered as a tool of marketing, contacting customers and looking for possible customers, as well as presenting information technology services as distinguished potential services for customers (Werthner & Klein, 2005). Information and communications technology (ICT) has revolutionized the way people live, learn, work and interact. Tambe and Hitt (2014) stated that ICT is a mechanism used by companies to look for innovative ways of operating and relay information to achieve economic gains.

Also according to Abou-Moghli, Abdallah and Ayed (2012), information technology is a multimedia technology comprising of the internet, software, hardware, computer, television, telephone, email, satellite, blogs, and internet working projects. Kushwaha (2011) defined ICT as technologies and tools that people use to share, distribute, and gather information to communicate with one another, one on one, or in groups, through the use of computers and

interconnected networks. While, Listyarini, Ratnaningsih and Yuliana (2016) defined ICT as any use of technology to access, gather, manipulate and present meaningful information at the end. Kioko, Malowe, Martkin and Moody (2015) noted that ICT is a technology used to support information gathering, processing, tabulation and presentation in a meaningful form. In conjunction, Aguboshim et al. (2019) supported by stating that the adoption of ICT depends on its sustainability and the pace of diffusion for ICT is used in different areas. Koltay (2016) noted that the common factor is its acceptance as a technology used to facilitate movement of information through the use of variety electronically aided communications for ease of access and decision making.

As managers oversee resource coordination and allocation, it can be difficult to coordinate business functions across various projects. Information technology is one of the key innovations that is frequently implemented to assist in this process (Hobday, 2000). Peansupap and Walker (2005) maintain that IT is often implemented as it is believed to facilitate communication, improve integration, enhance productivity and service delivery. In the same vein, they noted that organizations' reliance on modern tools resulted in technological advances and changes in tandem with their growth and change. Companies deploy and use digital technologies to discover answers to specific difficulties, to make better decisions, to improve efficiency and quality, and to compete for emerging businesses in our global and competitive corporate world. Moreover, information technology can be seen as a powerful force that opens exciting opportunities for organizations to achieve their missions and goals in an effective way. Therefore, leaders in organizations must obtain an overall appreciation of the potential of information technology and link the acquisition and utilization of information technology to the



organizational mission (Hacker & Saxton, 2007). Information technology is at the core of many business functions, operations, products and services.

Andrew (2010) noted that today, organizations worldwide spend over 50% of their new investment funds on information technology and related communications. Stating further that how organizations manage these large investments is of critical importance to organizational efficiency and effectiveness. Furthermore, Information technology is often the link between the business model and the critical drivers of success. Many organizations have been unsuccessful with their information technology based investments because of poor alignment of information technology with the business. Take for example Toyota; a Japanese automotive manufacturer, which has flourished in a highly competitive environment because it has created a set of fine-tuned business processes and information systems that simultaneously promote agility, efficiency, and quality. It can respond instantly to customers and changes in the marketplace as events unfold while working closely with suppliers and retailers. As part of its ongoing effort to monitor quality, efficiency and costs, Toyota management saw there was an opportunity to use information systems to improve business performance.

Even though technology alone would not have provided the solution, Toyota carefully revised its business processes to support a build-to-order production model that based vehicle production on actual customer orders rather than best guesses of customer demand. Once that was accomplished, Oracle e-business software was useful for coordinating the flow of Information among disparate internal production, ordering and invoicing systems within the company and with systems of retailers and suppliers. Basic information technologies can be used to store, retrieve, organize, transmit and algorithmically transform any type of information that can be digitized into numbers, text, video, music, speech and programs to name a few

(Brynjolfsson & Hitt, 2000). Frenzel (2009) observed that the information technology revolution has created innumerable opportunities as well as some challenges for numerous organizations; therefore, managers must learn to adapt to and maximize the advantages offered by information technology in this information-based society while guarding against the threat associated with it.

Schubert & Leimstoll (2007) had earlier submitted the importance and use of Information technology in small and medium companies noting that technology has leveled the playing field citing that a world without mobile phones and internet is unimaginable as information technology has brought buyers and sellers closer together, thereby creating intimacy characterized in earlier eras. In the same vein, another researcher posit that information technology can improve efficiency and increase productivity in different ways leading to lower transaction cost, better resource allocation and technical improvements (Olusola & Oluwaseun, 2013). In addition, Chinomona (2013), affirms that in order to succeed in this evolving environment, managers must be proficient in the adoption of new practices and improved techniques for Information technology saves money and time spent on repetitive tasks in an organization. This aligns with Lohr (2007) earlier assertion that information technology has altered management practices and the nature of work in industrialized nations.

Proper dissemination of information via technology empowers governments, institutions and individuals who sufficiently integrate it into their organizational structure. These days, the flow of information across the globe as little restriction, with access to internet, individuals can interrogate gigantic databases on super information highways which information technology opens up. Woherem (2000) affirms that through internet connectivity business transactions can be carried out around the world without intermediaries or physical acquaintance with the customer. In support, Agwu (2018) had cited Scheimman's work that noted the adoption of

computers in organizations has gone through four distinct phases namely: Large central mainframes, personal computers and distributed data involvement, microcomputers networking as well as networking on other networks. This is in line with Feeny & Willcocks (1998) who had previously noted that as companies expand in size and transform, they depend more and more on information technology for their survival.

Companies today implement and use information technology to find solutions to business problems, to improve critical administrative judgement, promote productivity and quality, and compete for new markets in our global and aggressive business environment (Daft, 2023 and Porter & Millar, 1985). Moreover, information technology can be seen as a powerful force that opens exciting opportunities which companies can use to realize targeted goals and mission in an effective way. Therefore, leaders in enterprises must obtain an overall acknowledgement of information technology potentials and link the application plus implementation of information technology to the company's set goals (Hacker & Saxton, 2007). However, the information technology itself is useless, unless it is engineered into information systems which are characterized by hardware, and all other working system including the staff working along with these systems in order to deliver the required output of the business (Bytheway, 2014). Information Technology (IT) is not the same as Information Systems (IS), but it is the building block which we work with.

As a result, business organizations have engineered information technology and implemented information systems (IS) with other solutions meant to accredit IT/IS strategy to meet the business concepts (as highlighted from the framework). IS are applied to improve business processes and bring data to the business that becomes useful as business information. Furthermore, the business processes and business information is fundamental to how the

Nigerian Institute of Management is seen and operates. Again, most businesses have a strategy that guides and directs their efforts, even though the quality of the strategy varies. Hence, information technology must be aligned to the business strategy to address the business needs, by engineering it into information systems and others (management information systems - MIS).

### **Field/Industry Description on Re-engineering through Information Systems (IS)**

The business environment is always evolving, constantly due to innovation to discover solutions and introduce new platforms in response to customer demands (Rabalandi, 2014). According to Al-Hameedi and Al-Abeed (2009), in the past organizations relied on paper work and files to store data but they are now embracing new solutions and platforms. Ironically for telecoms companies, they no longer utilize the traditional paper and file method for operations as they now need to use information systems to manage the large amount of data for their over one million customers. Similarly, Sharma and Khanna (2012) also explained that information systems helps organizations to improve their performance by using information technology and its applications effectively. While Al-Mamary, Shamsuddin, and Aziati (2014) mentioned that different information systems have different effective functions within a business environment. Bearing in mind that the effectiveness of information system is determined by how much it helps the organization reach its goals, and these goals relates to performance of organizations while targeting her goals. While Hamilton & Chervany (1981) emphasized in evaluating information system's effectiveness, later on Al-Mamary, Shamsuddin, Hamid and Al-Maamari (2015) found that industries commonly use information systems like financial, accounting, human resources, billing, and customer relationship management systems.

Bal, Bozkurt, and Ertemsir (2012), on other hand noted that certain companies use human resource information systems to collect, record, analyze, and access employee information.

Moreover, the human resource system helps identify potential employees, maintain records on current employees and create programs to enhance employees' skills and talents. While the accounting information system includes data on company transactions such as payroll records, and customer receipts that can be accessed and retrieved (Bal *et al.*, 2012). Additionally, Thouin, Hoffman, and Ford (2008) emphasized that information system aids businesses in making better decisions and improving the efficiency of key business processes. Information systems offers many advantages such as saving money, enhancing production, decreasing delivery time, improving customer service, boosting innovation, expanding into new markets and increasing market share. These benefits ultimately result in enhanced performance and effectiveness (Thouin *et al.*, 2008). However, it is concerning that businesses continue to invest significant amounts of money in new information systems, despite the potential risk of not getting a positive return on their investment. Furthermore, it is easier to recognize the costs associated with information system failures rather than acknowledging their successes.

Information systems helps organizations achieve their goals by giving them information about how the company works so they can manage their resources more (Babu & Sekhar, 2012). Likewise, Information systems can give the right people accurate and relevant information in a timely manner and in the right pattern. Even though companies use IS to collect, process, store and find information to improve their performance, some users are not happy with using the systems, while others do not see the point of these (Saeed, Lodhi, & Iqbal, 2014). Additionally, lack of support from managers and training also play a role in decreasing performance even when information systems are being used. Despite using IS, there are other reasons that can harm performance, such as employees not showing up for work. This leads to not having enough people to get the job done, making services take longer to be delivered, wasting money and

disrupting the workflow. This in turn lowers productivity and the quality of services provided in the telecommunications field (Belhaj, 2012).

Business targets increasing profits by improving productivity or expanding markets shares (Peppard et al, 2002). To achieve this goal, it is important for businesses to adapt to environmental changes, particularly the advancements in information technology. Nowadays, information technology plays a crucial role in gaining a competitive edge and staying relevant in the market as it is difficult to gain this competitive advantage and survive without adapting to the advancement of technology to a certain extent. Information systems however are tools that management utilizes to plan, control and make decisions based on accurate and reliable information (Kilonzo, 2012). Hence, the complete acceptance and utilization of an information system is vital to gain system's growth.

However, even though many sectors in the industry have fully adopted information systems, there are still some mixed feelings towards the systems. Some employees are unhappy with them while others do not find them useful (Al-Mamary *et al.*, 2015). Ayuba and Aliyu (2014) also stated that despite the many advantages, organizations face several challenges in fully utilizing IS. These challenges include a lack of education and training, poor infrastructure, and poor network service quality. Thus, this paved way for a specialized information system called the management information systems in order to properly accommodate the challenges.

### **Field/Industry Description on the Effectiveness through Management Information Systems**

Management Information System (MIS) is a system for systematically organizing information related to various elements of management. It is also responsible for collecting, processing, analyzing, publishing, distributing and providing information services to consumers of educational information (Babaei and Beikzad, 2013). According to Zwass (2020), information

system is a portfolio of computer-based systems (also known as “management information systems”) and their complementary manual processes. Management information system facilitates the creation and use of information for planning and implementing policies for education systems, making decisions, monitoring, and assessing.

Ismail (2011) further argued that management information system needs to organize, store, and transform data into information for decision making. In addition, the information pertains to data streams processed in a way that is meaningful to consumers. Judging from these, every system would have coupled and interconnected parts which forms a unit and strives for a common goal. The success of management information technology in any organization or industry has a lot to do with its design. Therefore, establishing an efficient management information system requires the efforts of both managers and experts for the problem is not database (Ballard, 2019). Specialists have the role of communicating on the technical area. In addition, functional experts need to be involved to make relevant suggestions in their area. For example, marketers, human resources, and accountants all need to be involved in financial information systems.

According to Purkar et al. (2023), management information system development also includes many areas of expertise. It relies on such vast and evolving diverse ideas and methods to function effectively. A correct understanding of connections and links between different domains is essential to achieving a competent and functioning management information system. It is important to remember that an organization's MIS can be broken down into subsystems that represent the functional parts of the organization. Many characteristics of efficient management information systems have been proposed earlier, however some of them had been reviewed by Asare et al (2019) which listed nine (9) roles, stating that MIS;

- 1) It must consist of an integrated subsystem with forward and reverse looking system capabilities.
- 2) It must be able to plan along with accomodate the specified command of operations.
- 3) It must be able to produce reports that are useful for all sector of administration in all existing and planned functions along with its targeted policies.
- 4) It must be able to receive functioning data in due time for administrative use and enable transaction data processing.
- 5) It requires batch processing and interactive operating modes for quick response.
- 6) It should adopt privacy procedures that promise to authorize users in a more secure way to enable more storage of data.
- 7) It requires appropriate data storage media, such as random or direct access storage, to retrieve relevant information quickly.
- 8) It must allow the standard and customized models that the online data storage medium must have in order to provide effective output related to ongoing control operations.

Furthermore, Yusuf (2014) and Kusuma (2021) outlined distinctive features which an efficient management information system must have, such as:

**Relevance:** The predominant quality information should align with the issue being evaluated. Information, however takes many forms. Examples include reports, news, and tables. The positive impact on the immediate situation is primarily a feature of importance elsewhere. Without this related feature, the result analysis can be complicated and ultimately frustrating to the user.

**Accuracy:** Information must be trusted by individual members of the administrative team as it also has to be precise enough for the intended purpose. Even if absolute accuracy is not



available, the degree of accuracy should be adjusted for each decision level. Also, do not confuse accuracy with degree of accuracy for the information may be incorrect but accurate, and vice versa.

**Time:** A good way of imparting knowledge is when it is processed to extra data data in a specific period where the validity is still permissible. The durability of the processed data created on a regular basis is very important. Practically, it is advisable the information should be provided at a frequency that is related to or truly involved by a critical choice.

**Details on Decision taken:** Information should convey minimal information that is consistent with successful decision making. The level of information usually depends on the rank or status of the staff in the company.

As previously mentioned traditional efforts such as beasts of burden cost-drawn costs and simple technologies for labour based construction works (even formally recognized by International Labour Congress) graduated to modern technologies for projects conception, design, procurement, construction, operations, maintenance, upgrades and facility maintenance. These vary in different forms such software, hardware or the unity of both forms as visibly pronounced in Artificial intelligence.

**Artificial Intelligence (AI):** Akinsola et al. (2021) had cited AI has rapidly transformed numerous aspects of human life, revolutionizing industries, augmenting decision-making processes and propelling innovation to unprecedented heights. However, this new trend in technology is welcome in this digital era as it is also important to highlight the advantages and drawbacks of AI for integrating this technology ethically in our workplace. They also stated that AI enhances better decision making, it gives a personalized user's experience, it propels innovation and creativity, it is efficiently automated and has an improved security for safety.

Despite this advantages, the AI has some setbacks such as , it is has a huge ethical concerns, it limits privacy by promoting risks, it can lead to overdependency of simple tasks and job displacement.

**Augmented Reality (AR):** Joshua and Akinsola (2019) had stated that machine learning can assist in improving the quality and accuracy of AR experience by enabling detection and recognition of objects, surfaces and user preferences. Here the real world interacts with computer-generated perception information. AR requires human intervention unlike Artificial intelligence. Hardware components of AR includes sensor tracking GPS,Compasses, digital camera and wireless sensors. Eye Strain and discomfort on the extended use of AR can causes considerable eye stress or damage and this can be overcome by Machine learning.

Implementing AI enhances the AR experience by allowing deep neural networks to replace traditional computer vision approaches and add new features such as object detection, text analysis, automatic speech recognition and scene labeling.

**Digital Blue Print:** A Digital Blueprint is a digital version of a process diagram and includes highly detailed process flows, functional and non-functional requirements, and all regulatory requirements, amongst other critical information (Hinmikaiye et al., 2021).

**Internet of things (IoT):** This technology calls for full utilization and allows for the addition of an embedded device with sensor to objects such as vehicles, printers, roots, etc that can measure environmental parameters, generate associated data and transmits them through a communications network (Ogidiaka, et al., 2018). For the workplace, a smart office is an example of an internet of things technology used to ensure organizational effectiveness. This Internet of Things excludes the traditional computers like servers, laptops, smartphones and tablets. It also has privacy issues, data overload, downtime, high cost and implementation issues.

**Blockchain:** Akinsola et al.(2022) noted that this was originally known as Bitcoin Cryptocurrency but the creator of Blockchain Satoshi Nakamoto in 2008 admitted that it was much more than. As this is a digital ledger and an emerging technology which is capable of supporting various applications related to multiple institutions (supply chain, finance, educational, manufacturing among others). It has several uses such as for record keeping of data and transactions, it is highly automated thus saves time and money, it is highly secured and operates in a decentralized system. Despite its advantages, it also has some setbacks such as the use of public and private keys, too many restrictions as the number of transactions per is limited, and it can be difficult changing or adding new informations after it is recorded.

**Generative AI:** Google Generative AI (2023) describes this as a machine learning algorithms that can be used to generate new content, including audio, code, images, text, simulations, and videos using generative models. It is a subset of artificial intelligence that focuses on creating new content rather than just analyzing or classifying existing data. For example, Google AI has already developed Gemini, Studio Bot, Google Cloud and Firebase as generative AI to create new experience. Generative AI models are only as good as the data they are trained on, and if the training data is biased, the generated content will also be biased.

Other challenges include the large amounts of computational requirements and data the AI needs to run, as well as the fact that outputs generated may not always be aligned with the engineers needs. AI generative models have the potential to disrupt industries like entertainment, design, advertising, and more. They can enhance creative processes, automate content creation, and enable personalized user experiences. According to a survey done by McKinsey Global Institute (2023), generative AI features stand to add up to \$4.4 trillion to the global economy annually. The technology is evolving rapidly, and experts predict that towards the end of this

decade, it will also achieve human-level performance in many tasks and reduce full automation. For this will ensure that technology is a collective endeavor and is used for the betterment of the society as a shared responsibility.

Notably, this thesis majorly aims to employ multi-factor models to investigate and explain organizational effectiveness by further testing the adherence to the Technology Acceptance Model in the advancement of technological infrastructures responsible for the growth of management information systems. This is intended to be achieved by identifying the organizational effectiveness various components, examining the model or conceptual framework to test, exploring further by carrying out a analytical comparison of status eras of the institute's in human resources progression.

However for further discourse, *the second part which is the theoretical framework part of field description*, involves theories explaining how management information systems appreciates or affects organizational effectiveness in Human Resources Development of the Nigerian Institute of Management. For a clearer understanding with regards the theoretical foundations, the study is further reviewed and linked to the objectives of the study as it relates to the study's aim and problems. These theories are discussed below showing their relevance, as they relates to the problems, purpose and explains the formulation of the Research Objectives (RO) and how they further develop/links into Research Questions.

### **Theoretical Discourse on Human Relations Theory (ELT1)**

This involves a motivated theory in the workplace that believes that people desire to be part of a supportive team that facilitates institutional progress (Levitt and List, 2011). The human relations theory has three main aspects. The first, it highlights on the importance of individual as one who is not a machine but someone that response to his environment. Second, it takes account

of informal organization in the workplace. Thirdly, what is important to a worker and what influences his productivity level may not come from the organizational chart but his associations with other workers (Cooley, 2016). Although Elton Mayo developed human relations theory/approach to management from 1924 to 1932, he later discovered that the Hawthorne study theories at the Hawthorne Plant were not so applicable to dynamic business practices. Thereafter he and his colleagues realigned the theories with a school of organizational thought that focuses on worker satisfaction and contains Hawthorn Effect on motivation by pay. The theory also focuses on informal workplace organizations and a means of influencing employee productivity.

Scholarly researchers such as Levitt and List queried the process with its own criticisms asking “if truly there was really a Hawthorne effect? Greenwood and Wren (1993) responded that this theory does not view workers as essentially interchangeable parts. Here managers take more interest on the workers and treat them as people who have worthwhile opinions and realize that workers enjoy interacting together. The human relations theory also supports variables that acts either outside or within the organization and as well as supports broader development of technology. Opportunities with normative, coercive and imitative dynamics to influence NPOs (Non-Profit Organizations and professional membership institutions) and SMEs (Small and medium entrepreneur) to shape environmental, social or economic decision-making and legitimize visions of reality as sustainable business practices are rooted in the institutional theory of sustainable growth for SMEs (Caldera, Desha & Dawes, 2019; Shibin, Dubey, Gunasekaran, Hazen, Roubaud, Gupta & Foropon, 2020).

The objective of enlarging the portfolio of NPOs and SMEs globally are sustainable ventures for business practices, ensuring revenue, stability, and beneficial social and environmental consequences (Caldera et al., 2019). The theory also focuses on the variables for

technological developments (or innovation capabilities) related to the long-term growth of small and medium-sized enterprises as a catalyst to boost or encourage human resources developments that pursue long-term corporate growth in the form of factors such as culture, legal and social environment, traditional or cultural values, economic incentive programs and market values (Srisathan, Ketkaew & Naruetharadhol, 2020).

The main highlights on Non-profit organization (NPOs) and professional membership institutes focuses on institutional regulations, but the new approach on small and medium enterprises (SMEs) focuses on institutional entrepreneurship, such as the development of sustainable business models and opportunities (Hadjimanolis, 2019) for the effective leadership of the organization. Also, strategic leadership is based on the people who have the entire responsibility for the company, not just the chief executive officer but also the administrative team (Boal and Hooijberg, 2001). Creating and communicating visions of the future, formulating company's organogram, process with disciplinary measures, marketing strategic decisions, maintaining good company's culture as well as injecting values of ethical substance in the company, according to Hunt, (1991) and Ireland & Hitt (1999) are the activities associated with strategic leadership.

Therefore for this study, the theory is significant and needed by prioritizing on the characteristics of a leader along with explaining the process involved to cater for the people they manage. Bearing in mind that the human relations theory sets the pace for change by also embracing these difference as well as maintaining company organogram, cultures and processes involved for the company's goals. Also, it is useful in linking up to the impact of management information systems on organizational effectiveness in human resource development due to its close pattern with the paternalistic style of management which caters for all.

It also is in-line with the third research objectives (RO3) which is to determine the effectiveness of Human Resources Management involvement in change management and administration in the human resources development of the organization within the pre and post chartered era of the organization. Lastly, the roles of communication between workers and management, and the role of human behavior on production for organizational effectiveness further necessitated the use of this theory.

Advantages of Human Relations Theory are it improves productivity of employees, removes grievance among the employees, improves Employee Retention, creates good human relationships and improves the goodwill of the organization.

Disadvantages of Human Relations Theory are it focuses on human theory alone as it does not include productivity of workforce, it does not show road map of work, it has more theoretical concept, it has difficulty of analysis and also has loss of subjectivity.

### **Theoretical Discourse on Resources Based Theory (ELT2)**

In order for an organization to successfully implement its market entry strategy in a competitive fast paced environment, it is important for the organization to have enough money and skilled employees as resources (Wade & Hulland, 2004). These resources are essential for managing the various aspects of the strategy effectively. Additionally, organizations need to have dynamic capabilities which involve using resources to create value and improve performance. Penrose (1959), had cited that the roots of resource-based perspective theory go back to the times which suggested that resources that are effectively owned, deployed, and used produce better outcomes than capital structures. While, Wernerfelt (1984) coined the term "resource base perspective" to describe how he viewed a society from the point of view of an important

resource. Prahalad and Hamel (1990) emphasize the term "core competence", and emphasize many important resources, which are called enterprise capabilities and are competitive advantage.

Resource-based theory is an extension of firm growth theory (Barney, 1991; Grant, 1991). This hypothesis highlights a firm's long-term competitive advantage in terms of financial performance (Wernerfelt, 1984). Resource-based vision theory has highlighted opportunities based on the uniqueness of resources that can lead to competitive advantage (Grewal, Iyer, Javalgi & Radulovich, 2011). From a governance point of view, the analysis provides a better understanding of the framework of the study and approaches that focus on the sustainability of franchising. A resource-based perspective is certainly essential for business owners to consider on their growth path. Evaluating all resources enables companies to achieve their business goals more effectively. Choosing an appropriate growth plan allows managers to overcome obstacles to growth or mitigate changes in direction and growth challenges.

According to resource-based theory, dynamic competence theory argues that management authors need a framework to describe a company's culture of transparency and how innovation evolves into timely agility, rapidly or significantly in dynamic markets (Kiiru, 2015). An organization with enough money is likely to have a bigger impact on how well it runs through good leadership programs and managing changes. According to Boal and Hooijberg (2001), strategic leaders pay attention to what's happening around their organization and think about how it fits with their goals. Hence for this study, the theory is needed and beneficial through aligning the research objectives and questions such as RO2-RQ2 which is to evaluate the major differences (leadership style, structure & re-engineering) in human resources development and



RO3-RQ3 which is to determine the change management and administration in the human resources development.

This theory suggests that companies have certain resources that help them gain a competitive edge and perform better in the long run. This advantage can last for a long time if the company can prevent resource limitations, transfers or substitutions (Frawley & Fahy, 2006). Whereas, Wade and Hulland (2004) earlier stated MIS resources can have many of the features of dynamic capabilities and can be an esteemable tool of organization effectiveness for those operating in rapidly changing environment. While also noting that information resources may not necessarily affect the company to a position of huge, sustained competitive edge, but they could be essential to the company's broad range competitiveness in wobbly environments if they assist it in terms of innovation, add, integrate and release other esteemable resources over time.

Hence this is in-line with the research problems and human resource/ change management independent variable for the theory further discusses the means which the company's resources are crucial points before embarking on choices for implementing procedures, analyzing the ecosystem or reviewing its leadership as well as administrative team.

Advantages of Resource Based Theory are organizations can use their key resources to gain a competitive edge, rather than seeking to acquire new competencies, organizations can look within its available resources, business can be special if they are valuable, rare, inimitable and nonsubstitutable, it enable an organization to identify and leverage opportunities while protecting itself from threats that are considered valuable.

Disadvantages of Resource Based Theory are that they largely dependent on the availability of resources like human capital for productivity growth, resources for new technologies and trends

are rare. Thus, it does not necessarily provide competitive advantage if large resources are not available.

### **Theoretical Discourse on Theory of Planned Behaviour and Open Systems Theory (ELT3)**

Theory of Planned Behavior is a behavioral model which assists us in understanding how the behavior of people can change. Ajzen (1991) proposed that this model should assume that behavior is planned; hence it predicts deliberate behavior. This theory of planned behavior (TPB) generated from another earlier theory called “theory of reasoned action” (TRA) by Ajzen and Fishbein which discovered that behavior cannot always be controlled voluntarily hence a perceived behavioural control was added to the model as a TPB. Ajzen further noted that any action a person takes is guided by three types of considerations. First, the behavioural beliefs which emphasizes on beliefs about the probable consequences of practiced behavior. Second, the normative belief which gives emphasis on the typical expectations of other people’s behaviour. Thirdly, the control beliefs which emphasizes on the presence of factors that may enable or obstruct the performance of the behavior.

This is applied in man power or human resources (HR) planning as it aims at ascertaining the company’s manpower needs either in the right number or form. Furthermore, it aims at the continuous supply using the right personnel to fill various positions and embark on various training and development of the company. This continuous process is a two phased process by which the administrative team uses to project the future manpower requirement along with the progressional suitable action plans to accommodate the reality of what was projected. This planned behavior helps in formulating managerial succession plan as a part of the replacement planning process which is necessitated when the job/business change plans for managers and leaders to formulate. Thus, this theory is needed for this study especially on RO1-RQ1 which is

to examine the management informative systems drive on human resource development as behavioural beliefs usually result in a favourable or unfavourable attitude towards change management. Also, the greater the impact of management information systems, the more favourable behavior is noticed towards organizational effectiveness and this also affects the environment.

Strengths of Theory of Planned Behaviour are that this theory has a wider diversity of contributing factors such as the locus of control theory, which only focuses on one of the three factors examined in the theory. Also, it has a substantive number of empirical studies backing it, reflecting its usability, applicability and ability to stand up to rigorous testing. Lastly, the theory takes in cultural factors into its account.

Weaknesses of Theory of Planned Behaviour are that it may not necessarily accurately predict behaviour all of the time especially when an unexpected event or factor occurs. So then it may not fit into the three categories in the theory. Also, it fails to look at the subconscious factors that may affect decision making as it tends to focus on the conscious decision making processes. Hence this may not fully capture the complexity of human behavior. It also does not spell out a spectrum of motivations.

Hence, further leading to **another theory called “open systems theory”**. This theory relates to how organizations are influenced by their environment. Sequentially, this is in line with Bastedo’s (2004) observation, that, even though open systems theories offer a wide range of viewpoints, they all in concurrent with the view that a company’s survival depends on the ecosystem’s connection. Recent research on accountability movements, professionalization and instructional leadership finds value in taking an open systems approach to comprehend environment pressures and how policies are adjusted or not implemented in the process. Thus, it

relates to the human resources management by aligning the company's physical aspect and making the business environment more favourable as they relate to issues such as efforts in retaining staff, industrial health and safety measures to be considered, physical (training and development) and social (security and industrial relation issues) environment in which official task are accomplished while company's strategic goals with their business competitors are also identified. The explanations also serves as the theory pros and cons.

*Staff Matters:* Issues such as death, burial arrangement, medical services which include the company having a clinic and retainer-ship of hospital. Providing medical first aid services, retirement benefits among others.

*Industrial Health and Safety:* bothers around a conducive working environment where safety hazards are limited, machines to be bought or in place to reduce industrial accidents and wastages, investigating the possible causes reason for official clashes or mayhem, ensures company's optimal compliance and industrial act. Notably, safe environment was unexpectedly experienced during the Covid-19 pandemic where remote working technology was encouraged.

*Learning and Development:* issues like skills being retained and improved, training and development, human resources planning, recruitment, selection and placement of personnel, compensation and talent administration. Technology also encouraged the use of online training, data programming and multimedia technology devices for training.

*Security and Industrial Relations:* bothers on how workers come to work in a environment with a feeling of belonging and assurance of life and safety within and outside the environment but while on official duty. Insurance packages are tools used her as well as labour act dispute settlement tools, settling of grievances among others. The use of proper information systems tools encouraged data processing.

Therefore for this study, the theory is relevant since it highlights the way of achieving effectiveness of a company and improving competitive advantage through embracing technology. Through the technological advances in addition to the accurate and timely data for operational services available, the Nigerian institute of Management (Chartered) have invested in information management systems to ease decision making process (Thus, in-line with RO5-RQ5; which is to access and identify the role of advanced technological infrastructures meant for executive decision making and business services impacting management information systems' effectiveness in the post-chartered era of the institute's human resources development).

#### **Theoretical Discourse on Gap Analysis Model and Diffusion of Innovation Theory (ELT4)**

The need for growth and directed change lead to need analysis and assessing of the status or eras of the Nigerian institute of Management. Thus, for this study, it aligns with the aims and objectives notably which was meant for bridging prevailing gaps and create a better working condition for organizational effectiveness. The role of resource gap and value appropriation as described by Obloj and Chapron (2011) stresses on the need for better competitive race to develop and acquire superior resources to their competitors or close any resource gap while Channon and Sammut-Bonnici (2015) made further emphasis on this competitive race, stressing that rather than reducing targeted resources value, a gap analysis model (GAM) is a tool will be used to compare where you are as against where you would like to be.

Thus, assisting to identify the gaps between the two eras, namely the pre-chartered era and the post-chartered era in the Nigerian Institute of Management (Chartered) and coming up with action plans to close the gaps. This is also known as need-gap analysis, need analysis and need assessment as its basic role is to help find solutions to issues that hinders operational growth such as staff developments, current company's goals, possible identified skills gap and

filling up of the gaps. Thereafter, the futuristic or expected goals of the organizations with prepared or planned staff developments to curtail expected challenges. This is applied in this study as it is also relevant in the analysis of the pre-chartered era affairs with the targeted goals and the post-chartered era affairs with the future goals. Then further analysis of the affairs of the two eras with the expected organizational goals.

Pros of Gap Analysis Model are it tends to have achieve an competitive advantage as it can lead to improved business processes, higher productivity and quality products or services. It also creates new training methods with skill assessment and it streamlines contracting processes with need assessments.

Cons of Gap Analysis Model are it can have a negative impact on employee mood . Also it involves a huge production cost and the application or processing period usually takes a lengthy time.

Once these gaps have been identified, the re-analysis of why they exist and what can be done leads to **another theory called the “Diffusion of Innovation Theory” (DOI)**. Rogers’ (1995) stated that DOI theory is well known and used to understand how users adopt new technologies. According to Rogers, diffusion is how a new idea or object is shared over time among people in a society. He also explains that there are five categories for adoption namely; innovations, early adopters and majority, late majority and laggards. Leif Singer (2016) just like Rogers emphasized that an innovation is something that is seen as new but noted that it is communicated through members of a social system. This communication process was aligned with human communication theories (Littlejohn, 1999) for the speed at which an innovation spreads is influenced by factors like its relative advantages, intricacy, interactive, testable ability and attentive. Further explaining that these advantages deals with how much better an innovation

is compared to what came before it, while intricacy, is how hard an innovation fits with what people already believe in and need. Then testable ability is how easy it is to try out an idea before fully committing to it. However, it is important to note that innovators are also willing to accept occasional setbacks when new ideas maybe unsuccessful as cited by Infante, Rancer & Womack (1997), who noted earlier that the testability agent is possible when someone encourages a leader to adopt or reject innovation. Lastly, Rogers (2003) noted that attentive refers to how easily the outcomes of an innovation can be seen, making it a key aspect of linear model of innovation.

The concept of the "linear model of innovation" (LMI) was introduced by authors belonging to the field of innovation studies in the middle of the 1980s. According to the model, there are simple sequence of steps going from basic science to innovations - an innovation being defined as an invention that is profitable. In innovation studies, the LMI is assumed in Science as the endless frontier while noting the influential report was prepared by Vannevar Bush in 1945. On DOI's strengths, the technique of adopting new technologies has been studied for more than 30 years, and Rogers' book "The Diffusion of Innovations" describes one of the most widely used adoption models (2003). In his definition of innovation, he stated: "An innovation is an idea, practice, or project that is perceived as new by an individual or other unit of adoption" (Rogers, 2003, p. 12). Even if an invention has been around for a long time, if people consider it new, it can still be considered new to them. The three stages of the innovation selection process (knowledge, persuasion, and decision) are most closely related to the new characteristics of adoption. He asserted that there is also a death of diffusion studies on technological clusters.

A technology cluster, according to Rogers (2003), is made up of one or more distinct technological components that are thought to be tightly related (p. 14). Broadly, the individual's attention to accepting a technology as a way to accomplish a common activity is explained by

DOI. Also, the following factors influence the adoption of an innovation: performance expectations, compatibility, complexity, testability and observability (Moga, 2010). Many banks find that integrating Information and Communications Technology into their operations has increased their efficiency. This is done by creating websites and mobile applications tailored to the needs of consumers. Therefore, stakeholders can access their accounts from anywhere as long as there is internet access.

This theory is suitable for transitioning from design to using a new idea, item or engineering method or a new process of an existing one as one keeping in mind that a major company's challenge is to develop products customers want and will purchase. There exists a fine balance between providing just what the customer is known to want and what the producer believes is a far superior solution set. This balance represents a continuum, with development approaches known as market pull versus technology push respectively. Technology push model is referred to as a simple linear model which implies innovation process starts with an idea or a discovery – it is sometimes called idea push. Sometimes this is by a creative individual who has the knowledge and imagination to realize its significance and the practical skills to transform the idea or discovery into an invention. The producer is in the business of fulfilling functions for the consumer, and uses unique methods, technology or approaches to better fulfill the function in ways even the consumer may not initially recognize.

The producer carefully learns and understands about customers' problems. Moreso, technology push product growth is based on the belief the supplier recognizes market needs ahead of the market. However, more often nowadays the starting point is basic scientific research or applied study with directed change in firms. This proceeds through designing the directed changed into products for effective and economically manufacturing in enterprises afterwhich



they are sold on the market. Market pull is a scenario in which the market demands a commodity (or service) type, or defines a problem, and producers respond by producing and delivering that product. Market desire is well calculated. The producer is in the business of delivering products intended to fill a market-defined niche. In short, market pull product development is based on a perception of what products or services the customer wants, with the customer having a say in the direction of product processes. The customer defines the solution and educates the producer. On the DOI weaknesses, despite its wide acceptability on innovation, some scholars such Bayer and Melone (2003) criticism its short comings stating that it is quite difficult to understand as a managerial framework adopted for software engineering. In addition to the risk of failure and of overrun budgets and timescales, the impact that the innovation of technology has upon organizations continues once the technology has been introduced.

However, the impact of technology on the Nigerian Institute of Management is a heavily studied subject and includes the domains of organizational and management science, change management, socio-technical systems, computer science, human factors and many others besides. In the following section the key impacts that technology has had upon organizations are summarized. The list is by no means complete, as there are simply too many facets to cover in any scoping study; however, the intention is to give an overview of some of the key issues impacting on the organization. Notably for this study, this DOI is relevant for it explains in terms of direction where the organization intends to go or be. Therefore, the direction here it is to adopt technical innovations. The major reason the Nigerian Institute of Management will adopt technical innovations is to remain a prime player in the industry as well as to escalate its success. This means that organizational effectiveness can also be achieved. This is noted in RO4-RQ4 and RO5-RQ5.

## **Theoretical Discourse on Technology Acceptance Model –TAM and Unified theory of acceptance and use of technology – UTAUT (ELT5)**

The Technology Acceptance Model (TAM) was introduced in 1986 by Fred Davis which was based on the Theory of Reasoned Action (TRA) however, it customized to meet the needs for information technology research (Davis et al., 1989). For clarity and reliable forecast on how people decide to use or not use ICT, he proposed a theoretical model. This model helps understand why individuals choose to accept or decline using technology. Ultimately, TAM is built on the Theory of Reasoned Action which implies that new technology would not help organizations to work better if people do not accept and use it. Technology Acceptance Model is a popular way to measure how well people (from all caliber whether professional, academicians and others) use computers (Davis, 1989).

TAM follows Rogers' theory from 1983 on diffusion of innovation which deals on how new ideas spread where adopting the technology depends on several factors such as; how useful it is and how easy it is to use. In TAM, the two key perceived factors theoretically constructed that determine system use and predict user attitudes are, the usefulness and ease of use. Perceived usefulness deals with how much someone believes that using a system will promote their work gratifications and success, while perceived ease of use deals with the thought of someone mentality that involving a system will be easy (Davis, 1989).

Advantages of TAM: People all over the world have readily embraced TAM as a way to improve business services using technology. Also TAM is simple to understand and has proven to be very accurate. It considers external and social factors making it suitable for various technological fields to use. TAM can easily adapt to new technological advancements, making it widely accepted in the technological industry.

Disadvantages of TAM: Many experts have raised concerns about the drawbacks of TAM. They argue that TAM lacks practical value, is limited in explaining and predicting outcomes as well as it has been criticized for being too simplistic in practical value. Thomas and Hodges (2010) also observed TAM had steered researchers away from more pressing research topics and has given a false sense of advancement in knowledge. Additionally, attempts by different researchers to modify TAM to fit the evolving IT landscape have resulted in a state of confusion and disorder theoretically (Malatji et al, 2020).

However, TAM aims on how a single user of a computer perceives the usefulness of technology, adding more factors to explain this perception. It overlooks the social aspects in directed change meant for information systems growth, questioning whether more technology is always better as well as queries the use of technology in the social impact perspective. For this study, this theory is relevant especially as it discusses why enterprises accept and adopt technology (Thus, also in-line with RO4-RQ4 and RO5-RQ5) and this is because of perceived usefulness and perceived ease of use of technology by management information systems. Notably in a bid to correct the issues, Venkatesh *et al.* (2003) who had previously assisted formulating TAM, further combined TAM with seven other popular models in the technology acceptance field to create a broader and unified model known as the **Unified Theory of Acceptance and Use of Technology (UTAUT)**.

Like the TAM, for this study the theory is relevant especially as it discusses why enterprises accept and adopt technology (Thus, also in-line with RO4-RQ4 and RO5-RQ5). In addition, also because of perceived usefulness and perceived ease of use of technology by management information systems. The UTAUT core benefit is that it has a multitude of factors which makes it deliver the highest explanatory power of all standard of acceptance models.

Thereby assist in supporting the technology development processes. Persistent drive to make sure people like and use technology is a big challenge for managers (Schwarz and Chin, 2007). This has been a focus for researchers in information systems and technology (IS/IT) to a large degree that studying how technology is adopted and distributed has become a well-established area of research (Venkatesh et al., 2003).

Moreover, researchers have been actively using various exploratory techniques to study different systems and technologies in many different aspects. Moreover, that even in most cursory examination, a quick look at the existing literature will show multiple stakeholders viewpoints, technologies, contexts, analysis units, theories and research methods (Williams et al., 2015). Thus, researchers are often confused by having to select characteristics from different models and theories, which in turn creates a challenging situation. This complexity is seen as the main drawback, disadvantage or criticism of UTAUT. To address this confusion and create a reliable data related to adopting new technology, Venkatesh et al. (2003) created a single model that combines different perspectives on how users and innovations are accepted, which was mentioned earlier and known as “the unified theory of acceptance and use of technology” (UTAUT).

Despite its significant influence, no research has yet examined or evaluated how well UTAUT works or looked into its results and constraints. The UTAUT theory states that four main factors (how well it works, how easy it is to use, what others think including scenarios that make it easier) directly affect how likely someone is to use something and actually use it and that these factors are also influenced by things like gender, age, experience and whether it is voluntary use (Venkatesh et al., 2003). It is believed that by looking at how each of these factors play out in a real-life situation, researchers and experts can figure out if someone is likely to use

a certain system. Thus, making it easier to see what factors are important for acceptance in any situation.

Consequently, researchers developed the theory by reviewing and combining eight main theories and models. These include the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivated Model, Theory of Planned Behaviour (TPB), a combined TBP/TAM, the Model of PC Utilization, Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT). Previous studies in various fields like technological systems, marketing, social psychology, along with administrative tools had effectively used theories and models for understanding technology and DOI's adoption. Venkatesh and colleagues (2003) shared findings from a research of four companies lasting six months. The results showed that the eight models they examined had explained 17 to 53 percent of the differences in user intentions to use information technology. However, UTAUT performed the best with an adjusted R<sup>2</sup> of 69 percent.

Over the years, UTAUT has become a popular choice for researchers studying user's behavior and intentions in technology usage along DOI's research used for empirical studies. As of now, the article by Venkatesh et al. (2003) has been mentioned in nearly 5,000 other works. UTAUT has been linked to various technology like Internet, Web sites, Hospital Information Systems, Tax Payment Systems and Mobile Technology among others using different control factors like age, gender, experience, voluntariness to use, income, and education while combining a wide range of user groups like different user groups such as students, professionals, and general users have been studied. For every firm or enterprise governed by disciplined leadership, it is not enough citing what extent or degree a leader administrative team fulfils their

job roles, it is how acceptable every form of information dispersed to employees or staff and outsiders (customers) of an organization.

The UTAUT Model is the Unified Theory of Acceptance and Use of Technology used for explanation of user perception and acceptance behavior, according to Venkatesh et al. (2003). Through this model, performance expectancy, effort expectancy, social influence, and facilitating conditions are the four potential constructs to explain user perception and acceptance behavior.

### **Conceptual Discourse: Review of Variables on Existing Literature**

Using the conceptual framework (figure 2) of the study, the literature review provides a schematic representation of the relationship between the variables under investigation. Rather than rely exclusively on diagrams for the discourse, here it depicts the pre-chartered era's (represented as level of business operations) effect, human resource/change management (represented as re-engineering process and structure extent in human resource management, post-chartered era's (represented as modern leadership style and administration) effect, emergency and boost in information technology and advances in technological infrastructures meant for boosting management information system services as the independent variables while organizational effectiveness as the dependent variable. This is further illustrated using the research theories on the mentioned variables as follows;

***The Independent Variables are made up of five variables namely:***

***First is the Pre-chartered Era (represented as the level of business operations):*** which is using the Human Relations Theory and it is characterized by the use of outdated facilities, traditional and adaptive means recruitment and selection with poor health and safety measures.

***Second is the Human Resources Administration and Change Management (represented as the Reengineering processes and structures extent in human resources management):*** which is

using the Resources based Theory and it is characterized by Recruitment, Selection, and Manpower planning, Deployment of manpower, Training and Development and also Specialization of skills.

***Third is the Post-chartered Era (represented as modern leadership style and administration on human resources management):*** which is using both the Theory of Planned Behaviour and Open Systems Theory. It is characterized by providing different IT gadgets like the Computers, Software applications, Identity machines and others, Mobile phones and Digital equipment and improved training and health and safety measures.

***Fourth is the Information Technology (represented as Emergency/Boost in Information Technology):*** which is using both the Gap analysis & Diffusion of innovation Theory. It is characterized by the Gap analysis and efficient communication flow and Timely delivery, improved customer services using modern technologies like the Internet of things, machine learning, digital blue print, blockchain, cloud computing, social media application among others.

***Lastly, the fifth is the Advances in technological infrastructures for Boosting Management Information System:*** which is using the Technological Acceptance Model – (TAM). It is also characterized by the Balanced Management decisions, Artificial Intelligence, Remote working and virtual reality functions as well as the computerized reports and automated digital payments.

***While the Dependent Variable is made up of one variable namely;***

***The Organizational Effectiveness:*** uses Unified Theory of Acceptance and Use of Technology-UTAUT as its model. Its adoption and acceptance is characterized by the Investment in management information system, efficient communication flow, improved cash flow and reduced operational cost, Standardization of operations using Industry 5.0, Smart office automation, human-robot collaboration on machine learning and artificial intelligence.

### **Pre-Chartered Era (Level of business operations) on Organizational Effectiveness**

Since the independence of Nigeria from the British in 1960, there was several formation in the country for a progressive change. The Oil sector, transport sector, building and construction sector, health sector, Food sector all had to be handled by component professionals known as “managers” in order to drive the economy forward. These lead to the introduction of management as the key component to enact policies of firms and institutes. The idea to form a management body to provide management training and competence originated from the members of British Institute of Management (BIM) residing in Nigeria on training purposes who felt there is need to impart expertise knowledge on administrative ways of conducting business in the country. Subsequently, in 1961 a group of about 50 people came together to launch the Nigeria Management Group thereafter, on 24th of January 1964, the group changed its name to the Nigerian Institute of Management with an increased membership base of over 2000 people.

However later on, the mode of operation internationally shifted towards a change further affecting the style of the institute business transactions and necessitated the need for its own change in order to be abreast with modern trends of business operations. Moreover on the local scene, bandwagon boarding activities had promoted a glut of all sorts in the traditional market for cognitive management training. This again called for not only new insights but also deeper foray into cognitive sectors of human resource development. Hence, the institute governing council developed new visions for the institution targeting to provide an appropriate turning point to review roles and identify areas of value-adding undertakings in order to maximize human resource application.

According to Adetutu (2003), the Nigerian Institute of Management could be seen in the following context as; firstly, the national resource body for the profession of management,



secondly, as the national center for managerial capacity development and promotion of the best practices in management, thirdly, as the virile professional body or reference point on managerial issues and lastly, as the national think-tank on organizational issues, politics and performance. The actualization of these visions demanded the definition of the terms of reference or objectives or goals and the means or pursuit of strategies crafted for their realization.

Therefore, the term objectives would form the main thrusts of the key areas of activities namely; Education and Training, Public and Institutional Engagement and Research and Information. Hence, the mission accordingly is seen as an unremitting commitment to the realization of the outline goals and the promotion of best management practices. While noting that the underlying factor of management being performance was critically needed, therefore to carry out this effectively, an action plan was drawn up to provide the necessary steps and effect for the plans. The plan based on a strategy of self-sufficiency was initiated by addressing residual issues of internalities so as to reposition the institute for a sustainable take off on the new vision. Priority was therefore given to physical infrastructures, organization and revenue base.

These were intended to consolidate institutional identity as well as assure a comfortable level of income which would cover core activities. With regard to main activities, the basic approach of our strategy is one of the problem solving as it helps to avoid reinventing the wheel. It also assists in articulating the programmes of the vision through identification of needs, target group(s), markets and cost and their benefits. This is exemplified typically through the already mentioned key areas as follows:

*Education and Training:* This involved among others, a review of curricula in line with the current and emerging needs as per cadre through management spectrum and across sectors,

taking into account also global requirements and trends with the objective being to be functionally relevant and globally compliant.

*Public and Institutional Engagements:* This sought to address persistent and crucial managerial issues of concern to the economy, business and the polity such as exchange rates, inflation, unemployment, health and safety issues, education, infrastructure and governance. The process would involve dialogue, scenario, seminars, consultancies and also networking. The objective is sensitization, involvement, enlightenment and problem solving.

*Research and Information:* This served to collate, analysis and aggregate findings and proposals from operational activities of the Institute. Also, it was created to be a source to access as well as generate new knowledge and concepts with the underlying objective being to contribute to the national development of management practices, principles and techniques.

The membership was enabled with some value-added services such as induction and continuing education seminars to members nationwide, a zonal structure of organization with substantial devolution of functions enacted. This empowerment of zones was to allow the spread of the full impact of the institute's activities throughout Nigeria and it was also designed to enhance membership empowerment as well as institutional development through value added services. As the end of the 20<sup>th</sup> century started approaching, two major events had joined to change the landscape of management globally and they were known as the twin developments of Globalization and Information Technology.

Thereafter, the institute was set for key challenges over the decades till something significant is done to curtail and match the trending application of modern technology in its operations as the associated structural and organizational shifts called for re-conceptualization and re-positioning in order to remain relevant and find a place in the emergent scheme of things.

Historically also, non-government organizations (NGOs) and professional membership organizations plays vital role in shaping the country's future. However, in this modern digital era, these professional bodies must possess both the necessary technology and the skills to effectively utilize various applications need for business processes. Additionally, tkets in order to share and spread the information they gather.

NGOs often work closely with communities at a local level to provide help and support. Grass-root NGOs play a crucial role in helping people in developing counries improve their skills, knowledge, and accesss to resources from outside the confines of their small, isolated communities. In the past, specifically Non-Governmental Organizations have been slower than their corporate organizations in adopting new technologies and have been comparative behind to take advantage of emerging information technology developments as observed by Nitterhouse (1999). Many NGOs use old-fashioned ways of doing things like using computers for typing documents and keeping track of finances. They have a mix of new and old technology that does not always work smoothly. Unlike corporate companies, NGOs have limitations that stop them from using modern technology.

These limits include not having enough money to buy new systems and tools, not having steady funding for technological investments, not being to pay technical workers well and not being able to train staff in technical skills which prevents others from adopting Information technology. NGOs receive financial support from sources like individual donations, governmental grants, fundraising activities, grants via funding agencies, or direct contributions from other NGOs. However, most of the funds received by NGOs are used to accomplish the organizations' mission, goals and planned activities (Hacker, & Saxton, 2007). Only a small portion of the budget is allocated to general IT support or professional development of staff

members. When organizations do not plan for their information technology budget or strategy, it hinders their ability to benefit from the strategic and innovative opportunities that IT offers (Nitterhouse, 1999). Factors within organization such as expected advantages and obstacles can influence the adoption of information technology.

A company will choose to use new technology if it believes it can save money, work more efficiently, make more profit, be more flexible and improve the quality of its work (Brynjolfsson & Hitt, 2003). On the other hand, a company may decide not to use new technology if it thinks that it does not have enough money, lack skilled workers (such as IT specialist), faces barriers to accessing information and knowledge, or if its managers resist the change within the organization (Heinz, 2002). Therefore as a professional body, the role which the pre-chartered era has on organizational effectiveness depends on the function of the Nigerian Institute of Management - NIM, which according to Akubuiro (2006), the Nigerian Institute of Management is the centre of management excellence that mobilize human resources management in Nigeria to take advantages of available opportunities to provide the Nigerian people with effective and efficient management services that includes; developing management professionalism, regulating management practices, promoting management culture with a view of achieving the above objectives through team working and cordiality, with process discipline and outcome focus.

In the words of Akpala (1990), the Nigerian Institute of Management is made up of people who have the ability to see and evaluate business opportunities to gather the necessary resources to take advantage of them and to initiate appropriate management policies, decisions and actions to ensure management and organization success. Also cited by Nnebe (1991), the International Management Academy defined the Nigerian Institute of Management as the source

and symbol of management excellence and whose passion is professional excellence that exists for selfless services, for service above self and stands to contribute to strategic transformation and also aims at promoting the ideals of strategic, effective and efficient management practices, characterized by universal best practices, corporate governance standard and distinctive individual disciplines.

The Nigerian Institute of Management is the mother of scientific management within the Nigerian business environment and operates with one vision, common purpose and shared values of integrity, transparency, responsibility, accountability, equity, fairness, efficiency and effectiveness (Kayode, 2007). Furthermore, he noted that the major activities of the Nigerian Institute of Management upon which the Institute performances are based upon the following:

- Perception and identification of the Institute management business opportunities.
- Selection of the legal form of the Institute practices and functions as a chartered body, obtaining the necessary, permits from governments, international body organizations and approvals if and when necessary.
- Identifying, selecting and acquiring key management education and training resources.
- Innovation in management education, training and practices.
- Risk bearing and management and control of other management business ethics, culture, behaviors and attitudes that are necessary for the social, economic and political growth of management education; practices and training within the Nigerian business environment.

The successful achievement of the Institute activities is centered on the successful identification of available business opportunities and effective formulation of appropriate and

relevant management policies and decisions towards achieving the identified opportunities. This means that the Institute performance is not synonymous to only the establishment or determining which institute will take advantage of the identified opportunities but it includes successfully managing the business effectively and efficiently through effective decision making and policy formulations towards achieving the social, economic, cultural, technological and financial stability of the Institute.

Sadly, the growth of membership drive and business opportunity was gradually declining due to the institute continual use of outdated services for business operations and productivity became stagnant. Therefore, the pre-chartered era is characterized using the Human Relations Theory where early business services practice was mainly ancient and adaptive means of business transaction and human resource development was not yet at a competitive advantage (Frawley and Fahy, 2006). While also noting that decision makers enact strategic decisions through the aid of MIS tools. However, the drive for organizational effectiveness is complemented by the desire of people to meet institutional company's goals through the using IT tools for business operations. This is in-line with Muldoon (2012) who cited that human relation theory states that the unified harmony is the major force influencing productivity as this productivity will increase due to this unified harmony existing between IT, workers and members of the company or enterprise.

Also, this increased production leads to motivations which boost performance and limit disputes. As more information technology tools are used in HR planning and delivery, the way people in organizations view the nature and role of HR itself may shift (Roehling *et al.*, 2005). This type of shift is further discussed in the human resources/change management on organizational effectiveness.

## **Human Resources and Change Management (Reengineering process and the structure) on Organizational Effectiveness**

Change management is defined as the application of a well-structured process and a set of tools used to lead people to achieve targeted goals (Smith, 2017). It is the criteria heart of organization which brings about survival, production and growth of the business. Furthermore, it emphasizes on the steps of performance, leadership, turnover and productivity. When change management is achieved perfectly it will lead to Organizational Effectiveness while interconnecting with management for a company needs to effectively manage their personnel sector in order to acquire a business advantage in the ecosystem. This involves having up-to-date and precise information about both current staff and potential new hires in the job market.

Ball (2005) noticed that organizations have greatly changed by information technology as efficient and effective management of human capital management has become a more important and challenging process. The Human Resources Management department typically handles administrative tasks that are similar in most organizations. To make these tasks easier, many organizations have started using technology to automate these processes. This has resulted in the creation of Human Resources Management Systems that focuses on IT solutions. Due to this progress, information technology has become more widely used in HRM over the past few years, with a variety of applications now available for different HRM tasks. According to Ruel et al, (2008), the term e-HRM was introduced in the late 1990's during the rise of e-commerce, as it was sweeping the business world with new technological tools and concepts.

E-HRM involves using e-business methods within a company to improve the flow of information and make HRM more effective and efficient. With the advancement of information technology, organizations can efficiently handle more HRM tasks, leading to better access to information and knowledge. When IT and HRM come together, the interaction and intersection

between them create the HRMS, a term used to describe the systems and processes at the intersection between human resource management and information technology. This combines all HRM activities and processes with the information technology field. This integration results in standardized routines and enterprise resource planning software for managing human resources effectively. The Human Resource Management Systems have evolved since the late 1990s when they were mainly used for administrative tasks and data recording functions. Currently, they serve as valuable tools for human resource management, supporting functions such as recruitment, flexible benefits, training and development, e-learning and more. An HRMS is a system that assists organizations in managing information about their employees, including acquiring, storing, manipulating, analyzing, retrieving and distributing data. While the term e-HRM refers to the use of information technology in HRM.

In 2005, Martin et al. listed the key areas where HRM professionals usually use information technology. Additionally, they also mentioned that HRM has an important role in organizational development as managing change function may also be involved in organizational development and change management. The Chartered Institute of Personnel Development, United Kingdom (CIPD) in 2005, has cited that human resource department is a sensitive unit which is crucial in organizations and its success or failure depends on its HRM skills. It is clear that incorporating information technology into human resource departments can be complicated. The need for implementation and the effects of the technology vary depending on the organization's human resources management strategies and technology itself. Martin and colleagues further commented on the situation by saying that, using ICT can help create virtual customer relationships within the organization, adding strategic value. Additionally, through social networking, it can enhance better employee communication. While Wachira (2010)



suggests that HR departments in Africa should focus on using the internet, web-based systems and mobile technologies to improve communication between HR staff, line managers and employees.

The use of information technology in human resource management helps improve processes by making them faster and more efficient, saving cost, increasing customer satisfaction, ensuring accurate data and making processes more transparent and consistent. It also provides more access to information and helps human resources managers adapt to new roles and technologies. When creating a human resource management system, there is usually a balance between using the solution and making adjustments to meet the specific needs of the organization. Therefore, it is important to work closely with the human resource managers during the design and development process of the system for this is in order to outline procedures and guarantee that the system will be user friendly. This must be considered carefully, as should the branding of the solution, for it is important to carefully consider how the solution aligns with the human resource and organizational brand. Adequate testing of the system with human resource managers is crucial to ensure the product is user-friendly and efficient. This will greatly improve human resource management processes by making them quicker, more cost efficient, more reliable, more transparent and consistent.

Swanson (1995) had earlier asserted that in human resources development, performance is key as the advancements in information technology have helped human resource managers to generate accurate data using a human resource management system. This human resource professionals to make data-driven decisions and to offer advice to other managers. With a reliable human resource management available, data would be easily available and human resource managers can subsequently take on a more strategic or advisory role. Ball (2005)

followed up in his study and noticed that numerous organizations have moved past the usual tasks and created human resource management systems that aid in hiring, evaluating performance, analyzing employee benefits and ensuring health, safety and security. Recent applications of human resource management system covers: payroll, work assignments, time management, benefits administration, HR information management, recruiting, training and learning programs, and performance tracking records.

The payroll module makes payment to employees easier by collecting information on when they work, figuring out how much money to take out for taxes and other deductions as well as creating paychecks and tax reports. It gets data from human resources and timekeeping module to handle direct deposit and writing cheques. This module can handle all things related to employees and can connect with current financial systems. The work schedule records standard work hours and tasks. The latest modules offer flexibility in how data is collected, how labour is assigned and how data is analyzed. The main purposes are analyze cost and measure efficiency. The benefit administration module helps organizations manage and keep track of employee involvement in benefits programs such as insurance, compensation, profit sharing and retirement. The human resource management module covers various HR tasks from hiring the applicant to retirement of the staff.

Furthermore, the module records employee information like demographic and address data, selection, training and development, capabilities and skills management, compensation planning records and other relevant activities. Cutting-edge technology allows users to input information from applications into database fields, inform employers and manage positions. The role of human resource management includes hiring, placing, evaluating, compensating and developing

employees within a company. In the beginning, businesses utilized computer-based information systems to:

- Produce paychecks and payroll reports;
- Maintain personnel records;
- Pursue talent administrative.

HR sectors are increasingly using online recruiting to find potential candidates for available job opening in the organization. This recruiting management process is known as Talent Management Systems, this includes:

- Analyzing personnel usage in the company;
- Identifying potential applicants;
- Recruiting through company-facing listings;
- Recruiting through online recruiting sites or publications that market to both recruiters and applicants.

Maintaining a well organized recruitment process and sharing job postings on various job boards can be expensive due to the significant cost incurred in the process. To address this and remain competitive and relevance in the industry, a specialized module called Applicant Tracking System has been developed. These systems has several features which assist companies handle and monitor employee training programs effectively. The system, usually referred to as a Learning Management System (LMS) when it is on its own as a stand-alone product, lets human resources keep tabs on employees' education, qualifications and skills. It also shows what training courses, books, Compact disks, online learning or materials are accessible for improving these skills.

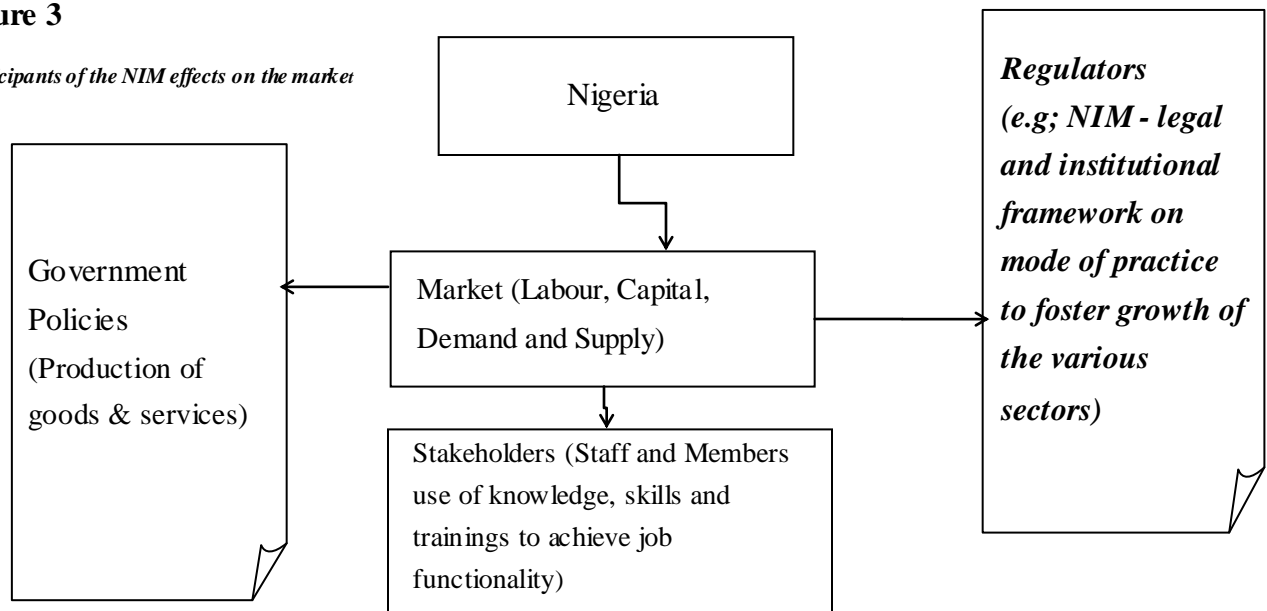
These training courses can then be scheduled for specific dates, and both participants and training materials can be organized and overseen using the same system. Advanced learning management systems enables managers to review and approve training sessions, budgets and schedules, while also evaluating performance and appraisal. This was evident as the evolution of computer technologylear that the need for information has been massively improved with the creation of Human Resources Software. This automated and redesign of work processes driven by information technology not only helps to save cost and cycle times but also enhances better quality.

The process of change is evolutionary as it began in the early 1960s when the Nigerian Management Group established to develop the education and training aspect of management profession later became the Nigerian Institute of Management in June 1961. The Institute in 1964 in collaboration with the Federal Ministry of Economic Development and other bodies arranged the first study tour to the United States for senior managers from Nigeria Government and private enterprise under a program organized and financed by the United States Agency for the International Development (USAID) under the leadership of Otunba J.A Adetuyo. In 1969, the Ford foundation gave the Institute a grant for formal training of consultants. Hence, NIM recruited the following consultants namely; Martin Oworen, M.O Akinrele and John Okoro for the function of marketing, production and finance respectively.

Following a six month international course in Turkey and the United Kingdom conducted by Messrs Urwick, Orr & Co., the consultants returned to set up scheduled courses in their functions. The high point of the training program was the annual three (3) weeks Advanced Management Program (AMP) runs at the University of Ibadan for top executive in business, industry and the public sector. These courses were moderated by a joint faculty of NIM

consultants and the American professors from Harvard, Columbia, Prudue and New York Universities sponsored also by the Ford Foundation. It was indeed a mark of high esteem and recognition for any top executive to be nominated for and to participate in the course. This program put a firm stamp of the Nigerian Institute of Management in the front role of management development of human resources in Nigeria and the African region. The Nigerian Institute of Management focuses on training, educating and promoting trainable managers, workers of organizations whether public or private organizations, financial institutions or individual investors on how to manage the social, economic, technological and financial resources available to them effectively and efficiently to achieve their organization goals.

These organizational goals included cementing their role in the Management profession as the regulatory multidisciplinary professional body which trains the management professionals in the nation. However despite the institute being the nation's management regulatory body, it was not insulated with national issues such as political instability, poor infrastructural facilities, poor training and development, poor manpower planning, low integration to modern information technology inputs, poor government policies, health pandemics such as Ebola and Covid-19 virus and poor government policies. This led to a disruption of business activities and it hugely affects the economy and market forces by creating gaps in business continuity. Therefore NIM had to put on their thinking caps in a bid to transact operations smoothly and healthily by proper manpower training/planning and re-engineering its workplace into a digital community with a transformed information technology friendly leader at the helm of the affairs of the institute.

**Figure 3***Participants of the NIM effects on the market**Source: Management in Nigeria*

From Figure 3, it shows the active influence of the Nigerian Institute of Management as a regulator and its interconnection with government policies, labour forces, capital markets, stakeholders, guidelines for ensuring business continuity and safer business practice. So, then what are the re-engineering processes necessary for change management? These are institutional steps driven by managers for the growth and stability which leads to organizational effectiveness. Thus, this is in-line with the research objectives and questions (RO2 and RQ2).

The Nigerian government enacts policies for producing goods and services, in this regards the Nigerian Institute of Management is among the core drivers of policy formulating for over the past 60 (sixty) years of the institute's existence, it has played commendable roles in the emergence and growth of management profession in Nigeria and outside Nigeria. As part of its efforts in national development and assistance to the nation, NIM has played key roles in the establishment of other professional bodies within and outside Nigeria such as Institute of Management Consultants of Nigeria as well as the Kenyan Institute of Management. It also plays

key roles by organizing professional seminars, workshops, lectures, conferences and other activities that will look into the various areas of governance and management vis-à-vis the making of policies and plans relatively associated to the success attained in their implementation.

Resolutions, summaries, recommendations and communiqués issued towards the end of the programmes are brought into the affected government agencies for possible implementations. Thus, this is in-line with the research objectives and questions 4 & 5 (RO4, RO5 and RQ4, RQ5) as the institute is a key player in policy formulation, arrangement and control of advanced management standards, education and training worldwide inclusive of extended and advances services for improved technological infrastructure. The Institute stakeholders also have expected targets from the institute for it is the institute's obligation to meet with the yearnings and expectations of the target audience as well as their stakeholders. Such aspirations or expectations are; up-to-date details on institute and membership, details on the institute (that is, what it is and what it does), a virile institute that will rank first among equals in management trainings, research and consultancy, an institute that will offer the best practice with references to code of ethics, an institute that will offer the best programmes in terms of seminars, conferences and with modern technology, an institute worth looking up to as an epitome of professional training, research, consultancy that will propel the practice of management in the country to greater heights.

Thus, this is in-line with research objectives and questions 1 (level of business operations), 2 (re-engineering) and 3 (leadership styles on human resources management). This implies RO1,2&3 and RQ1,2&3. As the human resources/ change management is characterized by the need to improve business services and maintain a competitive advantage in the industry. The process involved the improving leadership style, re-structuring and re-engineering in the

extent of Management Information Systems penetration. For companies with huge allowances for cash and its expenditures tends to have larger impact on the organizational effectiveness by delivering successful leadership programs and change management implementations (Wade & Hulland, 2004). This is also in-line with research objectives (RO3), which is to determine the effectiveness of Human Resources Management involvement in change management and administration in the human resources development within the pre & post chartered era of the institute. Hence, resource based theory is adopted in-order to adequately provide the funds and resources meant for productivity and growth which leads to organizational effectiveness.

**Post-Chartered era (Modern leadership style and administration on human resource management) on Organizational Effectiveness**

Following the unanimous approval of a motion to seek CHARTER status for the Nigerian Institute of Management at the Annual General Meeting at Abuja on Friday, 1st September, 2000, a private bill to this effect was subsequently submitted to the SENATE of the Federal Republic of Nigeria seeking to establish a Chartered Nigerian Institute of Management. As this would be the apex professional body which had also served as the national authority on Management Education and Development in Nigeria since its inception. According to the Management in Nigeria (2019) article on why Nigeria needs a Chartered NIM, an overview of Nigeria's potentials shows that despite the abundance of natural resources (Oil, Coal, Uranium and others), the resources alone cannot lead to national development.

Therefore to develop, Nigeria must be able to harness all its resources efficiently and effectively. Also, mismanagement of the country's resources was reported to be the main factor responsible for the poor state of the Nigerian economy. Hence, to correct the past errors and reposition the country for accelerated economic growth must be given top priority in the day-to-



day affairs of the country and treated with professionalism and credibility in urgent decision makings. It was also mentioned that it is wrong to assume that every person appointed in administrative position actually has managerial skills like training, retraining, monitoring and adherence to management ethics were considered pivotal to ensure optimum performance by each manager. Above all, Nigeria needed a regulatory professional body with legal backing that constantly monitors managers activities including seeking to improve their conduct and skill professional.

There was truly therefore a need to establish the Nigerian Institute of Management (Chartered) –otherwise known as NIM Chartered. The obligation to carry forward professional development and its sustainability should also be seen in terms of the vision, mission and formation of the NIM for the Nigerian Institute of Management was founded in 1961 to provide a forum for practicing managers and administrators from both public and private sectors of the Nigeria economy to share ideas and experiences, thereby promoting the management practices in Nigeria. For NIM role expected in national development functions was crucial especially during the 21<sup>st</sup> century during the grant of a chartered status, which has conferred formal empowerment on the Institute for regulations, control and development of management profession.

In discharging this role, the Nigerian Institute of Management needed to situate a firm professional platform commencing the process of setting up a baseline managerial practice for organizations. These administrative practices for organizations were to be backed up by modern use of Information and Communication Technology facilities (e-mails, teleconferencing, intranet, internet, the web, among others) introduced in the 1990s and would facilitate the NIM's effort to address its traditional operations challenges and enhance effective working culture as well as practices for the ecosystem benefit and the world at large. Thus with the growing trends

in technology and globalization, government approved was finally given for the institute to align and update its outdated services with the modern trend when NIM (Management in Nigeria, 2019) became chartered in 2000's through the Act No. 14, Nigeria's National Legislative Assembly and was given the following mandates;

First, to determine what standards of knowledge and skills are to be attained by person seeking to become members of the professional body and to raise those standards from time to time as circumstances may permit. Second, to secure the establishment and maintenance of register of members as well as and the periodic publication of the list of members. Third, to handle and regulate the Management profession in all its ramifications and lastly, to perform policy functions through the Institute's Council under the Act the functions conferred on it by this Legislative Act. The Institute affairs are vested in the Council which is headed by the President and Chairman of Council, who serves a maximum of two years in office. Also, election into Council is done every two years. Council is however empowered by the Charter to co-opt men and women of high integrity from the nation's multidisciplinary sectors in alignment with the Institute's mission statement. The Council is the Institute policy making body which is also assisted in this regards by several Committees. It executes these through Management team led by the Registrar/Chief Executive. The Council also appoints Ad-hoc committee from time to time to study specific problems affecting the Institute services and proffer solutions.

The Institute has six zones headed by Zonal Chairman and more than 59 chapters spread across the country through which it maintains close contact with its numerous members. For its day-to-day activities, the Institute is administered under a directorate system headed by the Registrar/Chief Executive. At present there are two functional Directorates namely the; Directorate of Membership and the Directorate of Capacity Building each headed by a Director.

The Directors in turn are assisted by Deputy Directors, Assistant Directors, Principal Managers, Senior Managers, Managers and other supporting staff. The Institute played and is still playing leadership role as Nigeria's leading manpower training and development institute. There is hardly any top indigenous/ government executive who did not pass through NIM training program. The training program ranged from supervisory course ranged from one week to three weeks. It is on record that more than 57,000 executives from both public and private sectors of the economy have benefited from the institute training in its almost 60 years of existence (Nnebe & Abebe, 2011).

Thus, it is safe to say that the post-chartered era, the institute have witnessed tremendous expansion of training and educational programs. Many courses have been introduced for managers and additional management centers have been established in some parts of the country to join the functions units established at the headquarters in planning and executing the courses. Bearing in mind the major reason for running courses at these centers and other parts of the country is to get the courses venue and participants nearer to the firms. This is done so as to minimize transportation's cost, lodging and hospitality of the participants coming from outside the administrative center in Lagos. The other cogent reason for this is to enhance organizational effectiveness by ensuring that the institute presence felt at the local levels. The Institute has not only worked very hard to develop Nigerian managers over the last 60 years but has also been instrumental within the present state of development of consultancy services as well as training services in the country. The institute also played vital roles in the establishment of some federal and state government owned training outfits like the Centre for Management Development (CMD), Administrative Staff College of Nigeria (ASCON) and the Institute of Management and Technology (IMT), Enugu. The post chartered era of the institute is unique for the introduction

of membership professional examination. This examination is different from the pre chartered one as it is purely for membership purpose. The examination is held twice in a year by May and November and the minimum qualification for members is First degree (Bachelor degree or Higher National Diploma) from any government recognized institution and candidates from any discipline are qualified.

Thus, this enabled the institute to known as a multidisciplinary institute. At successful completion of the examination and if certified passed by the board of examiners, the candidate is to attend an induction course and graduation ceremony which is purely on advanced management education, ethics, practices and behaviours. Afterwards, the candidate takes a pledge abiding by the rules of the professional regulatory body then is given a chartered certificate that makes the candidate to enjoy the both local and foreign recognition. Hence, the post-chartered era fosters the growth of professionalism in the management industry through developing managers from knowledgeable stage to experienced managers within their field of operations for organizational effectiveness.

Recent advancement in information technology are having a huge impact on how organizations operate, their structure and their strategy. This is support by Evans and Wurster (2007) believe that the success of future economies will largely rely on how well these technologies are developed and utilized. The global and competitive use of the internet has prompted many organizations to reconsider how they conduct business and how they can improve their business processes. For competent businesses are now able to interact more efficiently in the digital world, which presents them with a variety of new opportunities and challenges (Dennis & Harris, 2007). Keeping in mind that Bocij and McFarlane (2003) had mentioned earlier that technology has already transformed many aspects of business operations,

such as monitoring the external environment, communicating with partners and engaging with larger consumers. Therefore having clear strategic goals and a strong commitment are necessary for creating the right e-Commerce strategy and developing of web sites and other technological applications or solutions. The rise of mobile technologies and mobile commerce is predicted to have a big impact on various industries, leading organizations to rethink their strategic management (Evans & Wurster, 2007).

In addition, one of the prospects of the post-chartered era is its continued acceptance by practicing managers and administrators in the country as the globalization and promotion of the application of Information Technology tools has opened a new horizon for the Nigerian Institute of Management to impact itself on the Nigerian society as the vanguard for good management and administration of resources. Therefore, the post-chartered era which indicates the beginning of technological inputs in business services where the Nigerian Institute of Management became chartered and its operations had to be competitive with international standards as there was improved training and development as well as health and safety standards. This planned development lead to changes in management services due to environment.

Hence the theory of planned behavior and open systems theory will be adopted here where favorable behavior and the prevailing environment (Ajzen, 1991 and Bastedo, 2004) are factors that affect growth and development meant for organizational effectiveness. This is in-line with the research objectives 3 and 5 (RO3 and RO 5) which is to determine the role of human resources management on change administration (interconnecting with theory of planned behavior) and to identify the role of advanced technological infrastructures meant for executive decision making and business services impacting management information systems' in an organization. Here the organization (NIM) is influenced by the environment which necessitates

the change administered from the pre-chartered era to the post-chartered era and the improved delivery of business services corresponds with the principles of open systems theory. Thus, further justifies the adoption of this existing theory on the variable.

### **Emergence/Boost in Information Technology on Organizational Effectiveness**

The Emergence of Information Technology has greatly impacted on our daily life as well as that of the organization we work with. Information technology has revolutionized the way things are done in the information age and has lead to dramatic improvement in the decision making process of organizations. Information has made ICT become a revolutionary vehicle for job performance and organizational effectiveness for management in modern times relies heavily on information to thrive. Nothing moves without information and it is generally it is believed that information is powerful and that its owner has power (Gonfa, 2015). Furthermore, many organizations currently suffer from an excess of information and, therefore, need to manage all the information they have acquired so that they can meet the chaos of the digital era left behind by rapid technological advances at present and the widespread knowledge of dissemination (Dias, 2001).

In this context, the need for information systems has arisen as argued by Franco & Garcia (2017) that ICTS is a source of innovation solutions for competitive development of businesses. In other words, for an organization to effectively use technology as part of its strategy, the organization must maintain continuous communication with other organizations involved in the process of invention. This requires a series of transactions or contacts involving information about the state of the art, technological assistance, and transfers of the technology itself. The pattern of the transactions that occur between firms has been the primary focus of economists and, more recently, of organization theorists. Economists, generally understand such

transactions in terms of competitive market interactions. The classical form of market interactions assumes a purely competitive market in which many sellers with perfect information and no uncertainty sell identical products and cannot exert any price control.

While a purely competitive market model has proven powerful in dealing with some economic problems, it has a serious flaw. Arrow (1959) argues that the behavioural belief of firms operating in purely competitive markets are reasonable only when the market is at equilibrium. Wachler and Williamson (1978) expanded on this insight and argued that when disequilibrium exists: between buyers and sellers are not trading autonomously but instead develop accustomed trading relations. Good customers, reliable suppliers, and a willingness to accommodate the one another exigencies are valued trading attributes. In this regards, parties involved will seek to regularize the terms upon which trading takes place (Wachler and Williamson 1978, p. 553).

These "accustomed trading relations" between economists are inter organizational exchange association of enterprise theorists mindset (Levine and White 1961). What the economists (Arrow, 1959; Wachter and Williamson, 1978) refer to as accommodation and custom is very much what enterprise theorists also (Collins and Guetzkow, 1964) refer to as the formalizing or standardizing of inter company interactions. All these authors argue that norms, rules, and traditions emerge which in turn govern transactions. The parties form such relationships in order to reduce the uncertainty associated with transactions over long periods of time. By regularizing interactions, members of organizations are negotiating their environments (Cyert and March 1963). Contracts can in a way help to regularize interactions between organizations.

However, it is most difficult to write contracts when there is uncertainty about potential problems and results (Arrow 1974). Businessmen prefer loose contracts which allow negotiation to contracts that contain detailed specifications (Macaulay, 1963). This may reflect the "host of legal doctrines and techniques (that) lie in the way (of) enforcing such (contractual) remedies" (MacNeil 1974, p. 730). The relationship between two firms can vary from a simple ad hoc or market interaction to a fully formalized contract. The tendency will be for firms to form regularized relationships with trading partners. Such relationships are formed to reduce both the uncertainty and costs of transactions. The formation of such linkages between the producers and users of technology provides an underlying structure within which stable transactions are possible. As far as the accelerated pace of technological developments in the field of production is concerned, there has also been an evolution in the means of communication and transmission of information. Thus, growing competitive organizations have been forced to take quick and effective decisions thereby resulting to the organizational effectiveness (Belkur, Mehta, Shafter, & Amar, 2017).

In the Nigerian Institute of Management perspective, as a chartered portrait or symbol of management excellence, the mother of scientific management in Nigeria (Kayode, 2007) promotes its image and goodwill through the highly educative and programmes of induction courses, seminars, workshops and in service training and consultancy operations it undergoes in recent times. The institute has branches and chapters in almost all state capitals in Nigeria including the Federal Capital Territory, Abuja (where one of the management centres is situated). Hence, the seminars and workshops are organized for special category of public and private managers as well as members of staff within the states. These members of staff require high qualitative and informative managerial skills needed for development. Therefore,



organizations now need tools to aid them to make quick and automated decisions. Adding to ways to reduce uncertainty, only an effective MIS can mitigate these challenges (Senn, 2003). The tools are the information technology facilities which aids in improving the decisions by improving the quality of information processing in management information system (MIS). They speed up the process time of business delivery, training and development, health and safety protocols among others in-order to acquire more skills and knowledge on modern management practices that are competitive with international standards.

This is in-line with Thomas (2008), who noted that organizations have heavily invested in information systems because they seek to maintain their competitiveness in order to remain in the market. As the Nigerian institute of Management moved from pre-chartered phase to a post-chartered phase, administratively human resource management is faced with decision on how to effectively change operational policies and inputs in-order to meet up with modern standards. This situation where the human resources/change management is made to reflect on who they are or what they are doing and ask themselves what they want to be or do in future is known as ‘gap analysis’. Business Dictionary (2019), defines gap analysis as a technique that businesses use to determine what steps need to be taken in order to move from its current state to its desired future state.

The parameters for identifying management research gaps are also called; gap analysis, need gap analysis, needs analysis and needs assessment. While Jannetti (2012) earlier defined need assessment as a systematic process of gathering information that appropriate to develop an effective educational program that would address the needs and wants (gap). For gap analysis, four template questions were formulated;

1. Where we now or what we want? Action points- Listing of characteristics factors (such as attributes, competencies, performance levels) of the present situation.
2. Where do we wish we were or what should be? Action points- Listing of the factors needed to achieve future objectives.
3. When will it be time to close the gap observed? Action points- Highlighting the gaps that exist.
4. How are we going to close the gap? Action points- Highlighting the gaps that needs to be filled.

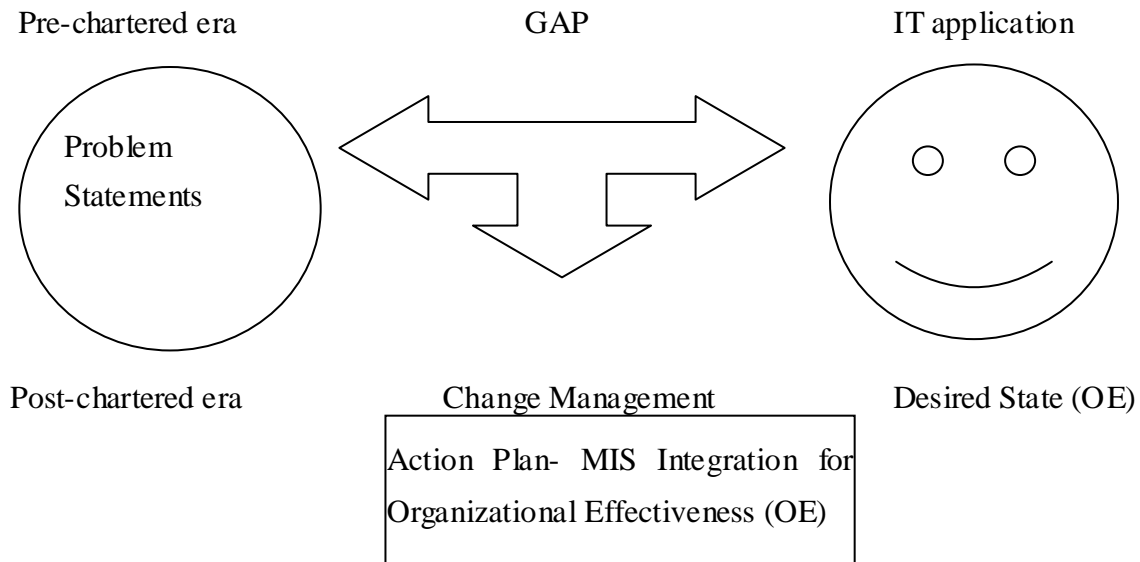
In-order to answer these questions appropriately, there is need to go back to the research problem statements. Bearing in mind that to manage resources effectively is a concept which Terry (2004) explained that is characterized by critical factors challenging the manager who tries to convert resources into results and to know the difficulties involved in putting resources to productive use. Furthermore, Mullins (2002), cited that management is the cornerstone of every organization effectiveness and is concerned with the arrangements for carrying out organizational processes and execution of works. These processes and execution of works are the backbone of the post-chartered era which is different from the pre-chartered days of NIM characterized by traditional and adaptive in mode of operations.

As previously mentioned, at that pre chartered era, the institute was lacking the technological incentives and government backing on regulations and licensing which also adversely affected the quality of training and institute's resources. Challenges such as unprofessional conducts, corruptions, poor communication and technology, poor marketing skills, half-baked resources personnel, poor infrastructural facilities, poor attitude to change, poor health and safety procedures and blame games on previous leadership all comprises of the problems faced by the

institute mostly before it became chartered. This created gaps in the functionalities of the institute and the need to bridge these gaps aligns with the purpose of the study. Thus, the emergence/boost in information technology variable resulted after a thorough gap analysis exercise between the two (pre and post chartered) eras and the future desire of the institute. The mode of IT applications was categorized into three aspects; the required strategy to integrate, the policy framework to implement and the enabling infrastructure to practice/operate.

The Strategy encourages government support in terms of research and funding by enabling their officials undergo training and executive courses which will be managed by NIM. Also patronage is increased and this in-turn boost revenue generation. The Policy Framework enables the right function and processes to be incorporated into the organization. The Post-chartered era of NIM here was more interested in the right way of disseminating information derived from the strategy level for implementation. Such data can be internally used for day to day monitoring of operations report. For example, a summary of events. This encourages documentation and reduces huge amount lost in traditional files. The Human Resource (HR) uses this application mode for its policy templates and operations. The Enabling infrastructure to practice and operate lead to proper data processing of information.

Their operations are the first to be systemized, computerized and they have a high degree of standardization. This modern input lead to better mode of NIM functions which are education, training and consultancy in-terms of prompt service delivery, increase in production and services of organizational tools.

**Figure 4***Gap Analysis*

source: Field Study

Thus, justifying the adoption of the gap analysis theory on the emergence/boost in information technology variable in-order to carefully assess the gaps from the two eras and plan on what the institute wants to be doing in his future. This influx of technology also leads to the adoption of the diffusion of innovation theory (Roger, 1995) because it explains the direction where the institute intends to go or be and that is to adopt new technical innovations for the effectiveness of the organization.

### **Advances in Technological Infrastructures for Management Information Systems on Organizational Effectiveness.**

During the 1960's and 70's, lots of companies used information technology to help with everyday office tasks like bookkeeping and accounting processes (Bird & Lehrman, 1993). It also helped keep track of what was going on inside and outside the company, supporting other parts of the organization's structure. Moreso, Bili & Raymond (1993) added that the early stage stigma such as high cost, limited distribution, and focus on basic tasks initially held back its use for strategic purposes like improving the organization's competitive position, expanding into new markets

and giving managers better information to make sound decisions. This effective decisions and fast pace of business process for improving company's goals by the persistent use of information technology tools paved way for the advances in technological infrastructures.

Advances Technology Infrastructure refers to the tools, methods and information that allow multiple parties of enterprises to participate in inter-organizational activities by efficiently collecting, processing, managing, retrieving, transmitting and display of data and (DeSanctis & Poole, 1994). Advances Technology infrastructures includes e-mail services, online forums, cloud storage and software for managing information in an enterprise such as documents archiving systems, payroll systems, and collaborative customer relationship, human resources systems, supply-chain systems among others. Recent developments also involve smart technology, automated process, Artificial intelligence and tools for streamlining work tasks. These modern or advanced technological tools assist leaders in analyzing, strategizing, making decisions, sharing information and overseeing operations effectively.

Currently, the technology space is observing a faster and wider spread of advancement in technology within companies than what was forecasted years ago. This is evident from the Internet Economy Indicators (Barua, Whinston & Yin, 2000), which was made possible by these advancement and has grown rapidly with a huge impact on the United States of America economy since 1994. This growth has been even larger as compared to when the Industrial revolution that started in 1700s. Similarly, a report from the United States (U.S.) Department of Commerce (Henry, Buckley, Gill, Cooke, Dumagan, Pastore, et al., 1999), found that industries that information technology products like computers, hardware, software, and services made up 8% of the U.S. Gross Domestic Product. These industries also contributed around 35% to the nation's economic growth. It was predicted that from year 2006 and above, about half of the

workforce in the United States will practice in fields that either make a lot of technology or use technology a lot.

An Advance Technological infrastructure set up in the economy is changing the way leaders operate. In an economy driven by advanced technology, leaders have access to quick processing of data, stakeholders knowledge sharing, along with usage of perceived details to create personalized relationship. This personalized or customized relationships in companies are seeking for more audience with their stakeholders. Alongside the broad directed change seen was as a result of the worldwide reach of enterprises connections, made possible using seamless exchange of data across different globes (Drucker, 1993). Leaders experiencing changes in their knowledge structures due to increased access to information and at the same time, indicates that the concept of leadership is evolving (Shamir, 1997). The fast-paced shifts in customer demands have resulted in an increase in the amount of work being carried out by make shift project teams. The teams are frequently set up in a virtual way, with team members working from various locations around the world, spanning different countries, cultures and (Spretizer, 2003).

Virtual teams members need to use Advanced Technological Infrastructure to communicate in different ways such as asynchronous, synchronous, one-to-one, or one-to-many or group chats communication. For virtual team leaders sometimes show “tele-leadership” when communicating with other team members electronically (Shamir & Ben-Ari, 2000). Additionally, sharing in leadership among virtual team members is achieved as they interact with one another (Shamir, 1997). Therefore, more active approach in building social structures that support the use of Advance Technological Infrastructures must be taken by leaders. Explicitly for leaders, their major setback is figuring out the means to effectively combine human and information technology tools in their companies to make the most of advance technological

infrastructure. It is interesting to note that even though organizations expect benefits such as improved efficiency, productivity, and profitability from implementing advanced technological infrastructures, there is no clear link with money invested in advance technological infrastructures and corporate profits which has been reported (Brynjolfsson, 1993; Grover, Jeong, & Segars, 1996). Infact, what many advance technological infrastructural systems have simply led to the creation of what McDermott (1999) calls to as “information junkyards.”

E-leadership is a term used to study leadership in the modern world. It involves using advance technology to influence people and bring about necessary drifts in attitude, feelings, thoughts, behaviors including success. E-leadership can happen at any company’s level and can involve interactions between one person and many people. It can be linked to one person or association of people as it shifts over time. Technically, that directed change in advance technological infrastructure is changing the way leadership is practiced. To talk about e-leadership, there is need to reflect on how advanced technological infrastructure works with leadership to shape leadership’s structure and impact, and how leadership can affect use and impact of advanced technological infrastructure in enterprises.

One crucial issue challenging the human dimensions today in business establishment is the application of technology and how it affects the complex interpersonal interactions within organizations. The use of Local Area Networks (LANs) and Wide Area Networks (WANs) may have considerable impact on company’s communication especially as it is transmitted within and outside the chain of command, as well as alters the patterns of communication. It seems as if Information technology brings back what the human relations movement has tried to abolish: the mechanized system of standardized work processes and operations governed by rules and prescribed behaviours. Except now, work is automated and self-regulated with people following

predetermined codes and procedures, which specify activities without much influence by the people involved.

The formal authoritative system of control that had demoralized people and triggered Chester Barnard's famous call to highly prioritize communicating interpersonally as this has reemerged this time in a transformed fashion as a high-tech medium that paradoxically increases the company's information processing capacities, while simultaneously reducing the amount and rate of verbal communications. The ability to control the flow of information centrally, by-pass middle leaders, and connect directly with front-line employees can lead to another effect of top IT leaders as this also may have an incentive to recover delegated authority. They can avoid vertical loading and decentralization of managerial decision making, depriving middle leaders of exercising their legitimate authority over lower levels thereby making their role as communication transmitters and translators ineffective.

Investment in Information technology facilitates shifts managerial responsibilities to teams while stripping mid-level leaders their customary bases of power. Information technology helps operationalize the needs for greater independence between employees and develop their awareness for joint accountability (Larkin and Larkin, 1994). They further advocated for direct contacts between top and lower levels, cite research by Harcourt, Richerson and Wattier (1991) who studied the communication practices of 871 US middle managers. Findings showed 16 per cent said their most important source of information was formal communication channels; 21 per cent said the grapevine; and 62 per cent, the largest group by far, said their most important information source was their intentionally constructed network. They further concluded that when information is moving in and through middle level administrator, it is not moving out. Therefore, as change is critical to the company's survival, top managers or leaders are advised to



establish direct communication link with front-line supervisors by calling them directly to see if they have received and understood the message.

- O'Connell's (1988) assessment of the impact of Information technology on human communication and the system of interactions within the organization is worth mentioning. Opportunities for face-to-face contact will be diminished; information from non-verbal cues will be reduced. Consequently, opportunities for Random, spontaneous information sharing will be reduced. Managers will need to structure work and relationships to provide for face-to-face contact to occur. Meanings will be derived increasingly from text and symbols.
- More informal messages and "short-circuiting" of the hierarchy will occur as new formats are accepted due to the remote nature of an electric network. Organization structure and formal information flow will be redefined.
- Trust will play a changed role in communication. Trust develops with the shared experience, values and give-and take that are the results of human communication. Satellites, electronic mail, and networks could reduce the dimensions of trust to which we are accustomed. New dimensions of trust may spring up in their place.
- The computer imposes the discipline of linear thinking. Data are processed at speeds that increase with new version of the chip. Consequently, people may become less patient and tolerant for individual styles of communicating. Organizations will think or perceive in a strict, linear mode. Organizations will need to find ways to encourage and protect nonlinear thinking and communicating.
- Expectations of work performance may be machine driven. As we become accustomed to the speed and accuracy of the computer, we may expect employees to have the same

qualities and produce in similar manner. Employees in some organizations will perceive this as dehumanizing and cohesive. Unions will take up the human environment as an issue. New ways of defining and using performance standards will be needed.

Having the Information Technology shadow the old life style; a major change can be noticed in the way people work or are required to work. In the working environment, where you do not get to see your employees or team members daily or not at all it requires different approach, different strategy and different methods to interact with them. A similar change in turn, of course reflects in their behaviour, their thinking, their efficiency, their performance, their motivation, their satisfaction, etc. It becomes essential to track this effect so as to mould the current practices, if all the resources are to be put to the best use. This is no new idea, but the divulging of the old basic law of adaptation to the change to survive, the only difference being that the change is not so manifest, as it is gradual and abstract in nature. Although many companies buy technology to save money and work more efficiently however experts argue about whether these gains meaningfully occur. People often talk about a productivity paradox if it actually exists and wonder also if technology plus its investment really makes us more productive.

Subsequently, experts have used this paradox to explain the evidence that even though a lot of money has been spent on information technology over the years, the rate of productivity growth has not gone up and may have actually gone down. Lehr and Lichtenberg (1988) argued that if productivity is how much you get out of something compared to how much you put in, and computers are one of the things you put in, then there is need for people to figure out if using more computers would actually make productivity go up. Research shows that integrating new software systems quickly and effectively can be expensive. For example in 1999, Microsoft was spending \$16,000 per year on each workstation for maintenance and upgrades. Some experts

believe that trying to change the way work is done while also saving money is often not successful. In 1990, Solow added to the discussion by noting that computers were not being reflected in productivity statistics. However, there is evidence that new technologies like computers and software can actually enhance productivity.

Previously, Strassman (1984) had noted that many businesses well-endowed with information technology -IT lose about \$5000 per year for each computer because of Futzing. He further stated that Futzing is when computer users spend time in a confused state while trying to figure out unexpected issues relating to the computer. Subsequently this has led to more studies trying to figure out if IT actually helps productivity. One way to argue against the productivity paradox is to consider that we might not see immediate productivity gains from computers because it takes time before the benefits are actually seen. According to David Autor et al. (2003, computers may need significant improvements in supporting systems (like human resources, knowledge and global communication networks) before the gains can be fully realized. As the technological infrastructure in a sector emerges, it provides an institutionalized framework in which technological change can occur as a routine, cooperative process among many organizations.

The infrastructure defines the boundaries of technological problems, provides an accepted technological approach, and establishes the criteria for evaluating projects and results. As the organizations participating in the network make commitments to particular technological approaches, their inventive effort will be compatible with that of the other organizations and with that of the organizations who are the potential users of their efforts. At the same time, the users make commitments to these approaches in their operations and product lines, as do their customers and suppliers. In effect, the situation becomes more standardized, which allows for

greater exchange in organisation (March & Simon, reviewed by Form, 1959). As the technology becomes more standardized, its role in competitive strategy must change.

Technology becomes an effective barrier to new entrants, and strategy relates to attempts to improve the market position and returns on investment of individual firms within the sector. Their view of the invention process suggests that the institutionalization of the infrastructure is a critical factor in the effective formulation and implementation of technological strategies. However as the technological infrastructure becomes increasingly institutionalized, it also changes the nature of radical technological change within the product market. The commitments of organizations in the invention process make radical change more risky and expensive since such change involves moving beyond the technical areas in which the firm is experienced. The technological commitments of the organization involved in the innovation process (and their customers) make radical changes more costly to adopt.

Such changes will not be consistent with their operations, and investments in new equipment, new product designs, and new styles of doing business may be required to integrate a radically different technology into their operations. At best, radical changes will disrupt the product markets and create levels of uncertainty. The institutionalization of the infrastructure is a barrier to the entry of radical technological changes, as it bars the entry of new competitors. On the other hand, radical changes may create opportunities such as new markets and lines of business. The effect of radical innovation is more likely to move the organization into a new business and to create new lines, as was the case when Eli Lilly and Co. developed artificial insulin. Radical process changes can revolutionize product markets, create new markets for hitherto costly products, and can result in making new products possible. Such radical changes are often critical in the history of a company or industry.

However, from a strategic point of view, such radical changes are very difficult to predict for they must remain strategic long shots. If such radical changes cannot be predicted or planned, they can be built into a systematic technological strategy (within a business strategy) only under certain, specific conditions. Firms seeking to break out of technological constraints, either to revitalize a stagnant industry, confront foreign competition, or to create new lines of business, may find radical changes useful. Indeed, as the level of institutionalization increases, radical change will become increasingly necessary in the effective pursuit of such strategies. Under such conditions, however, a firm would need to break out of the existing infrastructure, either to work on its own or to seek access to alternative invention processes. As institutionalization increases, radical changes will come from outside of the infrastructure that grows up around the product market.

Weiss and Birnbaum (1989) noted that if successful, the firm's technology strategy could then be built around both the emergence of a new infrastructure and the technological progress that occurs as the radical change is domesticated. Organizations should not, however, count on radical new technologies to help them out of current problems. There are good institutional reasons why technological quick fixes are unlikely to appear and less likely to be effective. Radical process and product changes provide a sound basis for technological strategy only under very special conditions. While also noting that any advantage accruing from a technological change will be hard to protect. Patents and trade secrets will be easily penetrated because of the standard and public character of technology. Firms can use the pattern of technological development to their advantage, however, only by carefully timing the adoption of a product or process change.

A first-mover advantage can be achieved and protected if subsequent developments are small enough or infrequent enough to provide a long lead time before a second mover can obtain a worthwhile technological advantage. In other words, a firm can wait until technological development has gone far enough to produce a set of changes that provide a competitive advantage and then use the incremental nature of institutionalized change to protect its first-mover advantages. A timing strategy is possible when the infrastructure and the process of technological change are institutionalized. Institutionalization provides a stable process in which good estimates can be made of the rate and extensiveness of future technological change. Currently, information technology is not just used as a tool to process data and record transactions, but it also serves as a powerful tool that can give companies a competitive edge and even transform entire structure of industries.

According to Galliers et al. (1994), they pointed out that because technology is advancing so quickly and information technology is changing the way businesses compete, organizations must carefully assess how they manage their information and technology resources to attain their strategic goals. This evaluation leads to Management Information Systems. It is a flexible concept that can be altered by modifying continuously till it attain satisfactory results which changes the work administration. It interacts with the internal and external work environment and improve corrective technique in the system to efficiently meet changing information needs (Amenta, 2017). While there is no one-size-fits-all definition of MIS (Adekeye, 1997), however, researchers have broadly concurred (Surwade et. al., 2016; Agu et al., 2017; Amenta, 2017) that, it is a database management system tailored for the needs of enterprise administrators or decision-makers (Adekeye, 1997).

Furthermore, Dantes and Hasibuan (2011), explain that MIS is used to describe the computing systems in a company which provides processed details for its business services. These systems are managed by individuals who oversee their operations while large organizations commonly use the term "MIS" or "MIS department" to describe a centralized system of computer management that includes both central computer systems and the entire network of computer resources within the company. Management information systems takes data, process it and turn it into useful information to improve the decision-making (Bird & Lehrman, 1993). This upgrade in decision making processes helps to advance technology fields and other areas, leading to economic benefits in information technology and broader use of its applications (Gikang, 2016).

However in its application in the Nigerian industry, there were setbacks(s) due to bureaucracy at the Federal Ministry level which characterized the slow pace to initiate nationwide infrastructural facilities for data consumption. Hence, the Nigerian institute of Management begun to fill the gap(s) in the management sector. Bearing in mind in this information age, data has become one of the most important resources to organizations. The effective and efficient management of large quantities of data is a common problem found in many industries. High-speed technological innovation combined with severe competition shortens the equipment life cycle and puts equipment under higher stress. In order to deal with this problem, the Nigerian Institute of Management strategic investments in production equipment should not only consider cost and capacity but also technology trends, flexibility and most importantly, proper maintenance drastically helps to keep the life cycle cost down.

The growing importance maintenance of technical systems in the last decades of the twentieth and beginning of the twenty-first century is related to the mass automation,

computerized and digitalization in all areas of industry and requirements for reliable operation of such systems as a prerequisite for the competitive ability of the organization. Furthermore, next to the energy costs, maintenance costs can be the largest part of any operational budget. Over time, the role of maintenance in the manufacturing sector has become increasingly important. Globalized markets are forcing organizations to compete not only in quality or price, but also in technology, reduced lead times, innovation, reliability and information technology. This is in line with the variable of advances in infrastructures for management information systems on organization effectiveness.

In recent years, the Nigerian Institute of Management has seen a tremendous increase in its business operations as it has extended its management education programmes to overseas countries like the United Kingdom (UK), South Africa, United States of America (USA), and Canada among others. Seminars, induction, courses, workshops are held in overseas countries to educate the populace on Nigeria management effectiveness and opportunities for foreigners to introduce their individual management policies, practices and strategies in harnessing the benefits available in portfolio management, labour management and organizational effectiveness which requires expert attention for the purpose of ensuring human management resources excellence.

This leads to balanced and effective management decisions, ease of doing business through remote working and virtual functions, computerization of reports and digital/electronic payments among others. Above all, the rise in technology leads to the acceptability of these technological advances for organization effectiveness by enabling the adoption of the technology acceptance model for innovations in the industry. TAM's adoption as the theory used on the existing variable is due to the realization that if the potential users do not accept and use the



emerging information technology, companies will not become more effective. The Technology Acceptance Model created by Davis (1989) is a successful means to measure how well people of all caliber can use computers. This model is similar to Rogers'(1983) theory on diffusion of innovation, which says that adopting technology depends on factors like how useful and ease it is to use.

Hence, this theory is relevant to the study because it explains why the Nigerian Institute of Management accepts and adopts technology (Thus, also in-line with research objectives and questions 4 and 5-RO4-RQ4 and RO5-RQ5) and this is because of perceived usefulness and perceived ease of use of technology by management information systems bearing in mind that the effective handling of the advanced technologies is now a critical success factor in business transactions. Further or advanced exploit of these technological infrastructures in a knowledgeable and skillful manner also ensures the attainment of the institution's effectiveness. This will be discussed in the next sector.

### **Organizational Effectiveness**

Organizational effectiveness represents the result of enterprise or firms activities while performance measurement consists of an assessment tool to measure effectiveness. Note that the terms 'performance' and 'effectiveness' are used interchangeably because problems related to their definition, measurement and explanation are virtually identical (March and Sutton, 2016 & 1997). An effective organization is one in which all constituents are satisfied. Such organization is in an better position to transform the inputs into output. Thus effectiveness displays potential resource utilization capacity of the company. According to Gutterman (2023), the organizational effectiveness indicates ability to obtain and use the resources efficiently to realize the stated objectives while organizational performance can incorporate sustainability in measurement using

a balanced scorecard. However he further noted that three levels of effectiveness can be identified. At the basic level is the individual effectiveness which emphasizes on task performance of the employees.

The job descriptions spell out the different tasks to be performed. Managers assess the effectiveness of the same through performance appraisals. Individuals seldom work alone, mostly they work in groups which necessitate the other level (also called group effectiveness). Group effectiveness is the sum of combination of all its members. The third level is the organizational effectiveness which is a sum of both. Through synergistic efforts the organizations are able to achieve higher levels of performance than the sum of their parts. There are many ways to measure the success, a number of factors consistently show up in effectiveness metrics. There are some factors which influences the organizational effectiveness such as clarity of mission, supportive policies, appropriate organizational design, performance, working conditions, pay and benefits, positive supervisory practices, workforce loyalty, technology and management information systems, operational efficiency and customer oriented behavior were found to be important indicators of effectiveness. (Gilbert & Ali, 2000).

However, the research deals with the impact of management information systems on organizational effectiveness using the five mentioned influential variables (which also acts as components of change). Management Information System -MIS uses Information technology to breed systems or a create new systems and methods. Although these advancements in technology offer organizations fresh ways to solve problems and improve performance, there are still ongoing research and debate among experts on how to effectively implement and manage innovations, as well as their impact on organizations. Notably many authors and researchers in the organizational field agree that information technology performs key roles enhancing the

success of the company's activities (Porter & Millar, 1985; Morris & Westbrook, 1996 and Bhattacharjee & Hirschheim, 1997). For instance, information technology applications help organizations improve the efficiency of administrative functions and enhance the effectiveness of managerial activities.

These applications can assist to improve better task organization and provide managers with better information. Zuboff (1988) noted that information technology applications are changing how production tasks are done in different industries, allowing several companies to create and also gain a competitive advantage in the area of advanced technology (like the smart machine). Just like how technology is defined by its characterization, the leadership structure within a company can also be defined by its core values and goals. For example, a participative leadership style aims to involve all members of the organization in decision making through open communication and teamwork. For it is crucial for the leadership style to align with the goals of the company's technological advancements to ensure a seamless integration and successful implementation. In a study conducted by Vandebosch and Ginzberg in 1997, they examined how the introduction of a groupware called Lotus Notes aimed to enhance collaboration among employees in an organization.

Despite this, teams or groups that did not work together before using collaborative technology still struggled after it was initiated to work together. As Vandebosch and Ginzberg (1997) had also discovered they usually support the current ways of doing things instead of bringing in new ones. For the idea that technology can lead to big changes in organizations does not always hold. Many times when groupware technology is used, it does not fully achieve its purpose because there are not enough leadership system that encourages working together. In addition, the scholars pointed out that groupware systems like Lotus Notes can improve unified

harmony in a company which already have a persisting culture of working together ( for it is not very common). They subsequently believe that the successful adoption of Advance Technological Infrastructure depends on the type of leadership and culture of the organization.

Leadership is expected to lead the way in making changes to adapt to new technology. This involves getting the organization ready to evolve alongside Advance Technology Infrastructure and properly embracing the new technology. The procedures for preparation of companies infrastructure is to diligently welcome new technology, in the process the leadership system may also need to undergo some changes. Early signs suggest that leaders in an organization or group may have a limited timeframe to help the successful adjustment to Advance Technological Infrastructures. Likewise, Weick (1990) had said that initially when organizations and individuals are most likely to adapt changes is when new technology are introduced. Similarly, other notable researchers discovered that in different project teams, adjustments to new technology were made quickly at the beginning. However, people did not continue to adapt due to pressure from management to meet performance expectations (Tyre &Orlikowski, 1994).

Part of this research emphasis on the crucial role of leadership on technology applications as studies have found that leadership has a significant impact on how modern technologies in companies are adopted. How do leadership assit to successfully integrate technology into an organization? The way a group interacts, the expertise of its members, their perceptions, shared mental models, diversity and sense of belonging all play a role in how technology is embraced. Leadership influences many of these factors, ultimately affecting how new technology is implemented. For example, in a study by Kahai et al. (2003) using a unified harmonized group ware system, members of the group were more united together as it was designed to enhance

interaction if and when the leader was more participative instead of being directive. In addition to influencing the nature of Advance Technological Infrastructure appropriations indirectly by affecting a group's internal system, leadership may also directly influence the nature of ATI appropriations.

Looking at another scenario also, participative leadership is likely to promote a more positive attitude among group members than directive leadership as group members can enhance an artificial Intelligent -AI (Kahai et al., 2004). Also, having a more positive attitude among group members when they are appropriating Advance Technological Infrastructure is likely to lead to a more effective set of interactions and ultimately better use of Advance information technology (Chin et al., 1997). Leadership plays a crucial role in adopting to change successfully. In addition, leadership has the power to influence how new information technology is used within an organization without impacting the existing social-cultural system. For instance, a leader with an autocratic style of leadership may hinder efforts to collaborate using a groupware system meant for collaboration. Similarly, a leader who created divisions (like an in-group and out-group set up) among her followers may prevent the best or any advance technological infrastructure system from facilitating effective collaboration due to trust issues within the group.

The impact of new information technology on e-leadership will be influenced by the technology structural features available, the internal group dynamics as well as the company's culture (Orlikowski, 2000). Advance Technology Infrastructure can either enhance, weaken or completely eliminate a leadership system. For example, when looking at a closed and autocratic system, the impact of Advance Technology Infrastructure can be significant. For companies here according to Avolio et al., (1999) who noted that some leaders are usually not questioned when

establishing goals or procedures as their followers may be seen as disinterested, independent, and confrontational. Fortunately, advancement of technology permits connection to new information, which can challenge existing ideas about followership and leadership behavior. Furthermore with new technology, relationships can form within networks, leading to possibilities of increased levels of collaboration emerging.

Accessing new information and gaining knowledge can change behaviours that were previously seen as acceptable or unacceptable by followers and leaders. This can lead to reevaluation of how they can collaborate to achieve their goals and goals of the organization. Infact, the leadership structure might change and adopt through the introduction of new technology, creating a modern, flexible and cultural structure of the company. On the other hand, introducing new innovation could disrupt a social complexity of the company thereby creating a need to fill the leadership gap. This is in line with Weick (1990), who cited that technology is influenced as result of how the organizations are structured. Orlikowski (1992) talked about how there is a back-and-forth (translative accessibility to explain the recursive tendency) relationship using ATI with the establishment they are part of.

Instead of seeing ATI as something static, it is seen as something that can be interpreted and created in different ways. As people within the organization, especially leaders have a big part to play in how ATI is created and used. For the way that Advance Technological Infrastructure is understood affects how it is utilized, the tasks it can perform and how it impacts organizational effectiveness. Orlikowski and her colleagues (1995) explained the back-and-forth connection between ATI and its surrounding environment in their study on “technology-use-mediation”. This involves making intentional changes within an organization to support the integration of new technology and adjusting the environment to fit the technology’s needs.

Subsequently, they believe that implementing new technology can influence institutions, such as the administrative functions within them, just as institutions can influence how technology is used and adjusted.

In a later article, Yates, Orlikowski, and Okamura (1999) discussed how technology influences the way organizations operate. They compared this influence to “genres” in a company, which are similar to scripts used by cognitive psychologists. These genres help organize interactions in a company for the researchers described the interconnecting association between technology and social systems. They explained how introducing new communication technology can create new genres in a company as well as how existing genres can also affect interactions within the new technology (Orlikowski, 2008). Past researchers now aligns with modern researchers and they understands Advance Technological Infrastructures with companies not only influence each other, but also have a dynamic and sometimes unexpected interaction that develops over time. Citing Hutchins (1991) as an example, who had proposed that organizations evolve not through deliberate planning but through a series of adjustments made in response to how systems are used in practice.

Leadership is a key factor in facilitating the association between Advance Technological Infrastructure with the prevailing ecosystem. Orlikowski (1996) builds on Weick’s (1993) metaphor analysis regarding an enterprise directed change to theatrical improvisation and suggests that changes in a company occurs by continuous, spontaneous and context-specific adjustments made by employees and employer of labour in their daily work routine. In addition, Orlikowski (1996), noted change can happen subtly or in gradual shifts and also occur by spontaneous actions of daily life. When these shifts are done repeatedly, shared, built upon and continued, they can eventually lead to noticeable and significant changes within an organization

(page 89). People understand the society by making small changes that add up and eventually bring about big changes like new technologies (Weick, 1990).

Researchers need to empirically study how the influence on service quality, product quality, and price impacts on a buyer's evaluation in a structured way (parasuraman, zeithaml, and berry 1994b). However, case studies and anecdotal evidence strongly suggest that achieving sustainable competitive advantage in the marketplace will be very difficult with just superior products and reasonable prices. Regardless of whether a company's core offerings are products or services, superior service quality is essential for excellent market performance on an enduring basis (Berry 1998). The primary rationale underlying this information technology impact on quality service delivery is that service quality is much more difficult for competitors to copy effectively than are product quality and price. A number of studies of the relationship between technology and employment find evidence that information technology -IT may actually increase employment. Osterman (1986), for example, found that information technology -IT investment ultimately resulted in an increase in the number of clerks and managers employed after a lag of several years.

Likewise, Morrison and Berndt (2001) discovered that IT broadly works alongside with labour, rather than replacing it, particularly in white-collar jobs. Specifically, they found that instead of reducing the need for workers overall needs, advancements in IT actually to be more jobs being created. While some studies show job losses due to technology, broader assessments like the one from the US Congress Office of Technology Assessment which suggest that technology likely creates more jobs than it eliminates. Indicating that predicting the effects of manufacturing technologies, on the other hand is more straightforward and simpler. Way back in the 1960s, Woodward created a measurement scale to classify firms based on the technical



complexity of their manufacturing process. When for instance, the process had high technical complexity, machines did most of the work, while low technical complexity meant that workers were more involved in the process. Woodward discovered that as technical complexity rose, the number of management levels and managers compared to personnel level also increased. In industries that do not involve manufacturing, where the output is less tangible, the connection between workforce or manpower levels and technology is harder to predict (Woodward, 1965).

Woodside (2010) views of a case study aligns with the usage of the Nigerian Institute of Management as after a proper gap analysis, it deployed new technologies in a bid to foster continuous improvement in its internal capability system which is responsive to ever changing opportunities and threats in various facets of the environment. This standardization of business operations due to new technologies promotes organizational effectiveness of the industry and enables the adoption of the Venkatesh et al. (2003), Unified Theory of Acceptance and Use of Technology (UTAUT) theory as the theoretical model acting on the existing independent variables. While also noting that the despite the standardization of operations through the organizational effectiveness variable (which is the standard dependent variable), all the independent variables interconnect to ensure the dependent variable is properly achieved.

TAM focuses on two main perceived beliefs which are addressed; usefulness and ease of use. Perceived usefulness relates to how useful a person thinks a system will be improving their while Perceived ease of use relates to how easy they think it will be to use the system. As TAM aims to not only predict but also to explain why a system may be rejected or accepted. Thereby, helping researchers and practitioners take the necessary proactive steps going forward. This is in-line with Brynjolfsson & Hitt (2006), who suggested that organizations are more likely to use new technology if they think it will be cost effective, make things run smoother, bring in

benefits, increase flexibility and enhance product quality. On the contrary also, a company may not want to use new if they believe it will not be cost effective, they do not have the right people to operate it, they lack the necessary information or understanding coupled with confronting issues on human capital restrictions (such as; lack of IT specialists and multi-skilled workers), or if the administrative status and leaders are not supporting it (Heinz, 2002).

As previously mentioned in Chapter one's significance of study, technology has brought several manual methods with outdated hardwares to automated methods using specialized hardwares and software in an attempt to ensure smooth or seamless business continuity. These new innovations or technology within the workplace ensures organizational effectiveness with the impact of management information systems such as;

**Robotics:** Osisanwo et al. (2017) had stated that this involves the conceptual design, manufacture and usage of intelligent machines (robots). Its main objective is to create mechanical systems that can perform tasks traditionally done by humans. Olawoye et al. (2024) supported that robots can work in an unpredictable or hazardous environment, it can fill out forms automatically and handover to humans, process and deliver reports for office as well as play a formidable role as an office assistant. Despite this benefits, robots also has some setbacks as it could be cost intensive to generate and maintain, it also has complexity issue on its size and may be catastrophic in event of a mal-function.

**Cloud Technology:** Thomas and Eric (2023) cited that Icloud technology refers to a standard file backup and syncing services that includes an online storage of 5GB for free. Backing up of personal documents such as office files, photographs, email, contacts, calenders, messages are easily carried out safely on an Apple device. A Cloud technology on the other

hand, will work on your office computer or personal android device but not work on an Apple device and it has a limited storage space for backing up of documents.

**Virtual Reality (VR):** Leighton Evans (2019) described VR on a published book titled the “Re-Emergence of Virtual Reality” as a computer-generated environment with scenes and objects that appear to be real, making the user feel immersed in the environment. This environment is perceived through a device known as a virtual reality helmet. VR is completely virtual and users are controlled by the technology or system as VR also requires a headset device or audible hearing device to create a sensory experience for the user such as touch, sight, hearing, smell among others. It is used for entertainment while playing video games, used in training and education just like the virtual learning system of Unicaf, used in design and prototyping, serves as a valuable inclusive asset for individuals with disabilities and in remote work application. Digital transformation solutions such as Industry 4.0, drives value through shared industrial information and insights as collaborations will no longer require physical visits or even email when reliable information are readily available on the organisation’s sites.

The visualizations that leverage AR/VR makes information speedily available and this boost confidence to make fast and accurate decision. However despite the benefits, Schillioff (2020) cited that it is also faced with some setbacks such as high cost of purchase and maintenance, leads to social isolation, challenges in ensuring content control and causes discomfort.

**Remote working services:** In a dynamic and ever charging world of technology at the workplace, remote work applications emerged as the predominant means of conducting official business during the Covid-19 pandemic outbreak. As strict safety measures were enforced on physical meetings and contacts, this left employers of labour a rethink on business survival and

continuity as most organization switched to a non-physical meeting using video conferencing tools such as Zoom, Google Meet and Microsoft Teams. This video conferencing tools were of high quality videos and audio, screen-sharing capabilities and they can be used for team meetings, focused discussions, collaborations on projects and virtual interviews. Project management tools such as Monday.com, Trello and Asana provided a central workspace for creating, managing and assigning tasks with deadlines and tracking progress. This is inline with Awoseyi et al., (2022) who cited that this remote working scenario during the COVID-19 pandemic lead to the formidable unification of modern technological tools such as cloud technology for storage, growth of business applications for work, unified communications and video conferencing for the new trend of conducting business operations remotely with management information systems tools. It reduces the fun of physical meetings and experience.

For the benefits, it promotes a safer environment, flexibility, speed, save time and cost are also key factors to the significance of this study. Also, these newly accepted technologies (management information systems) which are continuously deployed on business operations to foster organizational effectiveness interrelate with the research objectives and study's purpose. Thus, justifies UTAUT usage as its theoretical model to determine the impact of MIS on organization effectiveness using the existing variables.

### **Synthesis and Critique of Existing Literature**

This part of the literature review focuses on the extant literatures for management information systems on organizational assessment (effectiveness and sometimes 'performance') in human resource development. The reviews are critically analyzed with a synthesis of further literature findings which are reviewed through themes and trends while using relevant, current

and seminal peer-reviewed and scholarly articles. Thus, resulting to the identification of the literature gap(s) that motivated this research which the study intends to bridge.

### **Peer Review and Empirical Review**

*For the pre-chartered era (level of business operations) variable*, bearing in mind that the case study (the Nigerian institute of Management) was established in the 1960s and it operated with outdated means of business services, the institute had to strategized in-order to keep abreast of modern business practices. Mahoney and Frost (1972) cited that technology has been depicted, in recent years, as an important casual variable in some theoretical formulations of organizational structure and behavior. A related problem is that of establishing the appropriate unit of analysis within which to study technology variance. The researchers extended earlier research into models of organizational effectiveness, and examines the impact of differences in technology upon models of organizational effectiveness applied by managers. In contrast to studies such as those of Joan Woodward (1965) and of D.J. Hickson et al. (1971), who characterize technology in terms of a dominant or overriding technology of the corporation, focused upon organizational unit (section, department, division) as the unit of analysis rather than company. While variation of technologies within a unit still was possible, we felt that the dominant technology of a unit was more likely to characterize the unit than was the case at the level of company.

However during the 19th century and a large part of the first half of the 20th century, the economy relied primarily on physical assets and financial performance measures also gained popularity during this time (Argyropoulou, 2013). These financial measures were used to assess the company and its investments made. Thereafter, in the latter half of the 20th century, intangible assets were brought in and they became more important and were seen as the main

source of competitive advantage in the business world. This shift in focus from tangible assets to intangible assets caused a decrease in the market value of physical assets (Argyropoulou, 2010 & Nanwoonde, 2019). As a result of this change, businesses were forced to use non-financial performance measures to measure organizational performance in areas like: customers, employees, quality, innovation, and culture (Argyropoulou, Sharma, Lazarides, Koufopoulos & Ioannou, 2010). These measures can be divided into easily quantifiable hard measures like customer acquisition, number of complaints and more subjective soft measures that are difficult to quantify like customer satisfaction.

Nonetheless, these previous researchers have concluded that non-financial performance measures can present series of difficulties especially as the business environment is no longer stagnant. In Nigeria, research scholars noted that it is constantly changing because of innovation to discover solutions and introduce new platforms in response to customer demands (Romanus and Arowoshegbe, 2014). According to Al-Hameedi and Al-Abeed (2009) in the past, organizations used traditional methods using paper work and files to store data however due to development and scientific evolvement, change management procedures have to be administered in order to encourage developments. Hence, the next paragraph discusses the review of next existing literature/variable.

In the case of *human resource/ change management variable (re-engineering the structures in human resources management)*, the traditional methods were no longer relevant, because organizations store information of more than one million customers (Al-Hameedi & Al-Abeed, 2009). Likewise, Delorme and Arcand (2010), explored the directed changes of the functions and commitment of human resource (HR) developers have evolved from a customary perspective to a strategic perspective. They discovered that HR administrators method of

executing their task in a company and globally has changed due to the innovation of new technologies in the company. Farsi and West (2006) discussed organizational change influence on human resources management functions at The Sultanate of Oman central ministries. Their research showed that there are sizeable outcomes in driving organizational change. Further suggesting that the roles seen as a result of these changes, enhances HRM practices as well also increases their reliance.

Krishnan and Singh (2006) research investigated critical cases with problems encountered on nine Indian companies in integrating and controlling the human resources. Similarly, Sharma and Khanna (2012) noted that the aim of information systems is to promote the total output of a company by the use of information technology and its applications effectively. This was an improvement of the earlier study of Burbach and Dundon (2005) that assessed how researchers in the Republic of Ireland studied how management information system can help with people management activities in 520 organizations. They discovered that giant foreign-owned companies tend to use information technology more frequent compared to the little Irish-owned companies. They also observed that administratively task or commands were used by human resources technologies instead of for the purpose of making decisions.

Additionally, Mohammad and Haroon Tarawneh (2012) conducted a study to show how the Application of Human Resources Management System impacts on Corporate Performance from the perspective of workers in the Banking Sector in Jordanian Firm. From their research, they discovered a few key findings, namely: 1) The quality of the output of human resources information system has a significant impact on the institutional performance in the banking sector in the Jordanian firm. 2) Motives have a statistically significant effect on corporate performance in the banking sector in the Jordanian firm. 3) Training has a significant effect on

organizational performance in the banking sector. Also, the human resource system helps to identify potential employees, keeps track of current employees and create different programs to enhance employees' skills and talents (Bal *et al.*, 2012). This administrative change in policies further necessitated the growth of the institute to a chartered status which enabled the institute to have the legal framework to carry out its functions in the post-chartered era with modern leadership style and administration.

Hence, *the post-chartered era (modern leadership style and administration in human resource management) variable* is characterized with the rapid transformation or transition from traditional means of business operation to adopting modern means of business operations. Such that details concerning the accounting system includes data on company transactions, payroll records and customer receipts. Noted that all this can be thoroughly accessed when needed (Bal *et al.*, 2012). The financial information system on the other hand, handles information on the company's assets like bonds, stock, and cash (Munteanu *et al.*, 2012). Furthermore, the billing system is considered a crucial tool as one of the key competitive weapons in the informative industry for it consist of the software, hardware, the network itself as well as the staff using this system (Romanus, 2014).

Since the beginning of adoption era, researchers have been interested in various questions about how computer applications are developed, used as well as what impact do they have. The growth in IT advances have affected all studies, leading to a raising series of questions that affect scientists and practioners in different fields. Further generating renewed interest among practitioners and academics because of its connections to engineering and social science disciplines (Laudon, 1986; Avgerou, Siemer and Bjorn-Andersen, 1999). In addition, experts agree that various types of social problems related to technology and management because the IS



applications are crucial or key enabler for most companies' business strategy (Ives et al., 2002). For Davis and Olson (1985), had earlier identified IS as a system that combines users and machines to provide information using computer hardware, software, manual processes, analytical models, forecast tools, handle systems, decision making processes and a database.

In other words IS “are developed using IT to aid an individual in performing a task” (Van Der Heijden, 2004), while Management Information Systems is broadly connected with the use of technologies in the process of collecting, processing, storing and transmitting relevant information to support decision making in any company (Laudon & Laudon, 2007). Furthermore, Thouin, Hoffman, and Ford (2008) noted that MIS can help businesses to make better decision-making and improve the effectiveness and efficiency of various critical business processes. MIS also offers many benefits, such as saving money, improving good production, reducing delivery times, providing better customer service, promoting innovation, entering new markets, and increasing market share, all of which contributes lead to better performance. This continuous deployment of IT will be reviewed below on the next literature and paragraph.

***Emergence/Boost in Information Technology variable,*** Information technology refers to the technical components, which includes hardware, software and communications that are used to build an information system (Bytheway, 2014). Regardless, the technology itself is not helpful unless, unless it is integrated into detailed electronic structure which has the necessary tools of a working technology and the staff using the technology to deliver results for the company. As a result, the Nigerian institute of Management (the research case study) aligned with IT solutions by putting into action various tools in line with IT/IS strategy to meet the business strategy. This is achieved by utilizing technology as a valuable tool and this promotes improved performance

by aiding organizations in creating and executing strategies that enhance efficiency and effectiveness (Barney, 2011).

Therefore aligning the firm's goals and research objectives as businesses are using more and more information technology and information systems to help solve business problems, increase productivity and service quality, compete in new markets and make decision-making and business processes more efficient and effective (Kariuki, 2015). Earlier, a study conducted by Ahearne *et al.* in 2007 looked at why sales representatives should embrace information technology. They measured how customer relations-based IT affects sales effectiveness and aimed to answer the following question: Can sales representatives improve their performance by using information technology (IT) tools? The researchers used data from two companies which shows despite some uncertainty results and the frequent resistance from salespeople, accepting IT has a positive impact on sales performance. This is because salespeople who use IT gain more knowledge and in turn, improve their targeting abilities, enhanced their presentation skills, and increase call productivity. Therefore, sales representatives have a good reason to welcome IT since it can help them perform better in their job.

In 2010, Shaukat & Zafarullah conducted a study to see how information technology affects how well organizations perform. They looked at quantitative indicators over period of 1994-2005 from Pakistan's banking and manufacturing companies to see how IT impacts things like income and number employees. The authors wanted to see if spending on IT made a difference in how well organizations met their goals. They collected primary data talking to people via in-depth interviews and field surveys of 48 companies, 24 in manufacturing sector (12 local and 12 foreign) and 24 in banking sector (12 local and 12 foreign). They analyzed the data using various statistical and financial methods.

The above research conclusion shows that IT has a beneficial effect on helping organizations reach their goals. The banking sector performs better than the manufacturing sector as the local companies are leading the way in the banking sector, while the multinational companies are at the top in the manufacturing sector. Hence, this promoted advances in technological facilities and business services.

The *advances in technological infrastructures meant for boosting management information systems services variable*, deals with advanced decision making processes and understanding the technical tools needed to boost business services as they involve the process of information gathering, processing and assessment in transforming knowledge and information transformation (March, 2011). Researchers prefer organizational character and analytical decision making over intuitive decision making in managerial activities. Experts believe that carefully analyzing options leads to better choices than relying on intuition. However, Khatri & Ng (2010) has challenged this belief as new developments for cognitive and artificial intelligence have shown that intuition processes are not as mysterious or magical as once thought.

Furthermore, according to Khatri & Ng (2010), researchers have found out that intuition processes develop over time through experience and learning. These processes include a collection of facts, patterns, concepts, techniques, and beliefs that are ingrained in our minds" (Barnard, 1938 cited in Simon, 1987). For most researchers in the field of management information systems are focused on three key organizational characteristics: size, structure and business strategy (Budiarto et al., 2015; Thong, 2001). In terms of organizational size, large-size companies with their abundance of resources, tend to embrace and utilize management information systems more effectively than smaller companies (Winston & Dologite, 1999 and Ismail & King, 2007).

Cheney and Dickson (1982) discovered that the way a company is set up can help improve how management information systems work, making it easier for managers to make the right decisions at the right time. However, Premkumar and King (1994 & 2002) discovered that the business strategy a company uses, such as focusing on low costs being innovative as well as also greatly impact on how management information systems are designed. Thus, to design an efficient management information system, Tuanmat and Smith (2011) recommends that small- and medium-sized enterprises create an information technology solution which matches their business strategy in order to have an effective management information system. In addition, Mei-Liang & Kuang-Jung (2010) also noted that the way a company is structured can play a role in improving the quality of information.

Most recently LE *et al.* (2020), carried out a study to investigate how organizational characteristics, manager's knowledge, management commitment, user involvement, information quality, and management information system effectiveness in small- and medium-sized enterprises in Vietnam. The authors created questionnaires based on their previous research and distributed them to respondents in Vietnamese small- and medium-sized enterprises. The study showed that the manager's knowledge, user involvement, and information quality play vital roles in improving the effectiveness of management information system. Also, by using bootstrapping, the researchers found out that information quality acts as a mediator between user involvement, company's characteristics, and management information systems. They also found a direct relationship between the company's characteristics and the effectiveness of management information system, which is essential for organizational effectiveness.

Therefore, in an attempt to study and review *organizational effectiveness variable*, researchers from different academic backgrounds have used various indicators to show their

expertise. For example, experts in business policies and strategic management mainly use financial measures to determine effectiveness (Keats&Hitt,1988)”, while some researchers have used different methods like reducing regret, boosting morale, decreasing absenteeism and managing anxiety (e.g; Allen *et al.*, 1979). Furthermore, marketing researchers have used various economic and non-economic measures, as well as generic indicators to evaluate effectiveness (For instance; Katsikeas et al.,2000).

According to Argyropoulou (2013), organizational effectiveness is determined based on various factors such as indicators, predictors, specificity of measurement, consistency and the fluctuating nature of effectiveness. Cameron (2009) recommended that researchers clearly define what they are measuring in terms of effectiveness and put forth seven guidelines to narrow down the assessment scope and establish boundaries for the definition. These guidelines cover aspects like whose perspective is considered for judging effectiveness, the specific areas where judgment is concentrated, the level of analysis, the purpose of assessment, the time-frame, the type of data and the benchmark used for judging effectiveness.

Recently, Nanwoonde (2019) research had sought to access the relationship between information systems and organizational performance while acknowledging the crucial, supportive and transformational role for organizations in achieving their objectives. Past studies have proposed various performance measurement frameworks and are widely used (Argyropoulou, 2013). For example in 1990, McNair, Kynch, and Cross delivered the performance pyramid, also known as the strategic measurement and reporting technique (SMART), and the performance measurement matrix of Keegan, Eiler, & Joemes (1989). Similarly, Mark Brown (1996) proposed the macro process model, while, the European Foundation of Quality Management (1994&2023) presented the business excellence model.

Furthermore, Lebas (1994) presented the 'Tableau de bord', whereas, Neely and Adams (2001) proposed the performance prism. With the right deployment and usage of information technology tools, organizations can achieve improved productivity and reduced cost of business operations. This information technology tool does not only include information systems tools but also includes communication tools. This development has contributed to the business effectiveness and increase productivity. Information and Communication Technologies (ICT) offers valuable practical tools for company's which, when used effectively, can greatly benefit them by enhancing their competitiveness. The widespread use of the internet as a primary form of communication and for conducting business transactions has created various strategic opportunities for businesses overall, especially within the travel and airline sectors (Li-Hua & Khalil, 2006 and Munirat *et al.*, 2014).

Just as the Internet together with online commerce have greatly changed the airline industry over the past ten years as noted by Kuffour (2017). Nigerian research scholars; Adeosun, Adeosun & Adetunde (2009) stated that using ICT helps organizations with planning strategically, interactions, association, accessing data details, ruling of choices made, managing processed data. ICT brings about significant changes in how technology is utilized for businesses. When used effectively, ICT can offer valuable tools for organizations, helping to enhance their competitiveness (Buhalis & Law, 2008). Hengst & Sol (2001), mentioned ICT assist companies to save money thus, improving their capability, which in turn helps them better organize their activities. ICT can help reduce the cost of coordination and increase the amount of work that organizations outsource.

ICT is also used to dispatch processed details as well as serves as a tool for acquiring knowledge. In year 2011, Ramsey et al. had discovered that companies usually benefit from ICT in areas like cost efficiency on transactions, collecting and distributing of information, managing inventory and ensuring quality control.

In 2012, Okumu carried out a study on how Information and Communication Technology can assist organizations achieve their strategic development goals. This topic has been widely debated and seen from various management perspectives. Notably therefore most organizations do not only employ IT (information technology) and IS (information systems) but also employ information communication technology (ICT) for usage in order to have an ecosystem business edge in support of the application of management information systems and its accomplishment of the company's objectives. In addition, more researchers have created precise measurement models and established methods, steps and recommendations for creating and designing a successful performance measurement system (Kehinde & Yusuf, 2012 and Argyropoulou, 2013).

However, the Technological Acceptance Model (Davis, 1989) framework is widely accepted and frequently cited for this study. This is because it is a well recognized and commonly used model. This TAM also helps in understanding why people accept or reject information systems and information technology, predicting how likely individuals are to use and accept them. Chen, Li, & Li (2011) also supported this while that noting that in the Technology Acceptance Model, the two important factors are how easy something is to use and how helpful it is.

## **Research Gaps and Reason for Chosen Methodology**

Despite the underlying exploits in the research, the researcher was able to organize and classifies some research gaps based on the usefulness. Using the fundamental framework introduced by Miles (2017) who suggested a model which consists of seven research gaps; First, Evidence Gap: which implies that the study results are incongruent and do not support conclusions in their own right if seen from a more abstract perspective. Second, Knowledge Gap: this implies that the desired research results are not available. Third, Practical Knowledge Conflict Gap: this indicates that the professional behavior or procedures differ from research conclusions or are not investigated by research. Fourth, Empirical Gap: this emphasizes on the need for empirical testing of research hypothesis or conclusions. Fifth, Theoretical Gap: which indicates that a gap exist because there is a lack of theory. Thus implying that in order to develop new insight, theory should be applied to specific research problems. Sixth, Methodological Gap: this implies that it is vital to use a variety of research methods to produce new insights or to prevent inconsistent results. Lastly, the seventh gap is known as Population Gap: which indicates that a research pertaining to the population that is not sufficiently represented or under researched in the evidence base or earlier research.

Thereby ruling out evidence gap was inevitable due to the fact the researcher intends to provide research results after proper analysis and these findings are expected to align with research conclusions. Also, practical knowledge conflict gap and empirical gap was also ruled out (but not completely rule out especially that of empirical gaps due to its broad acceptability in approach) due to the fact that conflict gap is usually done qualitatively as conceptual framework while empirical gaps are usually done quantitatively and the researcher intends to use mixed –



method study as well as the use of hypothesis was carefully structured concurrently with the research questions in order to also properly relate to the research objectives.

Bearing in mind the study population used (Nigerian institute of Management stakeholders) was over one million in numbers, the population gap was addressed comprehensively by using a proper sampling method in order to adequately get a proper representation of the study phenomenon while theoretical gaps was also addressed through the introduction of more than five (5) research theories for the foundation of research literature. Therefore, the *researcher main identified gaps are tagged as “methodological knowledge gaps”* and this is as a result of the likely synergy experienced when using mixed-method of research (as against using a single method) and the versatility involve in getting a big Q (either qualitative or quantitative which depends on the data size) and the small Q initially results to an unknown finding till the research is properly conducted (by mixing the quantitative and qualitative methods sequentially or exponentially) to arrive at a known finding and subsequently analyzed with practical conclusions.

This is achieved in a bid to successfully answer the research questions and in line with Oppenheim’s (1996) law, this study intends to adopt a mixed-method design known as Sequential explanatory mixed method where the design of the questionnaires, interview sheets and group discussions will be done sequentially by following an orderly sequence of proceedings where the quantitative data (Big Q) gotten from their responses is used to analysis the responses from the qualitative source – Interview (Small Q). Also, using Nigerian institute of Management as a case study was due to its multidisciplinary nature, which makes it possible to get different perspective views as against a single view as the use of pre and post chartered eras for the study have not been researched by any scholar. Bearing in mind that measuring organizational

effectiveness based on human resources development is a rare or an unusual topic which most related studies have not fully researched on. Subsequently, further justifies the chosen methodology with regards to filling research gaps.

Critically and more recently, a Coursera Staff (2023) noted that management information system is known as a sophisticated electronic platform that supports the management in making informed decisions with respect to the economic entity affairs. Alternatively and according to the US Bureau of Labour Statistics (2023), it can be described as an information technology system that automates business services for effective management of the entity which requires involvement of information technology professionals. Further noting that management information system is a great benefit to organizations because it automates business operations, saves time, makes information readily accessible to the administrative sector, stores up information for audit and reference purposes. Also noting a major challenge despite its benefits, shows a lack of an established management information system that normally meets the standards of the modern business operations. This is true because the manual process operates on system used by organizations and does not provide accurate, reliable nor complete data 24 hours a day, nor does it also help with trend forecasting and support as seen by the case study's pre-chartered era on level of business operation.

The extent to which companies that implemented management information systems varies widely. In addition, most studies in the past centered more on using management information system in managing crime in the society. Citing an example where the effects of crime are difficult to determine in Bangladesh. However, there is certainly a continued increase in the directed changes of information technology with exploiting of weaknesses by criminals (Saiful, 2020). Saiful further suggests that MIS in Bangladesh suffers from three important

problems. Firstly, this was as a result of the fact that information management is often seen as an afterthought. Second, this was mainly due to the fact that security is seen as a latent approach, the question of the duality of development still arises. Thirdly, the concepts of information security are mainly theoretical. There are barriers to using Geographic information system (GIS) tools in crime mapping and spatial analysis, but they can be addressed by putting in place the necessary countermeasures.

Jones et al (2020) found that the Belize Police Department benefits from using MIS in a number of ways, including better coordination across departments, quick and consistent reference, access to related data and documents and use less labour. They further emphasized that the MIS needs to be updated with current programs to ensure that all measures are taken into account and proven to be effective and efficient in carrying out the day-to-day operations of the departments (Different from Belize). A study by Gabriel (2022) on the effect of Management Information System on crime management in Lagos highlighted the positive impact of management information system on mitigation of crime in Lagos. The results shows that applying management information system is critical and vital to the effective and efficient management of crime in Lagos and by extension the entire Nigeria. In contrast, there is a lack of resources on the use of MIS in addressing ineffective operations of organizations.

There are no recent studies (year 2022) researching on the effect of management information system in improving the effectiveness of organizations in terms of human resources development and operations with reference to information technology, leadership, business engineering and levels. In addition, there are no studies investigating management information system's impact on the effectiveness of a business and not for profit organizations' operations. Hence, the research justifies its aim to fill the gap and add to knowledge bank in relation to the

impact of management information system on organizational effectiveness which will serve as reference for further studies in the management information systems area. Therefore, the researcher sought to use the research components (also known as variables) to further analysis and critically review the identified gaps as shown below;

*In the post-chartered era where modern leadership styles on human resources management affected*, data processing technology has transformed and progressed in various areas of the world, especially business management. One noticeable change is in how management data is provided and handled, which has significantly improved compared to manual ancient methods used previously like *the pre-chartered era where the level of business operations was traditional and obsolete*. Hence, there is need for more processed data (information) to make decisions (Chenhall & Morris, 1986) which supports the integrating or applying management information systems for business processes.

However, MIS of some enterprises especially non-profit organizations, regulatory bodies and in small and medium-sized enterprises (SMEs) have limited resources, which can make it challenging for them to implement successful MIS projects. Thong (1999) also noted on the limited resources and formalized activity mechanisms in small businesses can contribute to the lower success rate of MIS projects. As regards to company's structure, decentralizing means the managers have more responsibilities for planning, operating, and controlling. As a result, it is important for SMEs to establish an efficient MIS that can deliver accurate, comprehensive and timely details to managers. Notably, Professor Robert of Carew school of business, Arizona state university (2000), explained the objectives of management information systems as providing processed details to all administrative level at the appropriate time, at an acceptable accuracy degree and at an economical cost, such information is used in the decision making process for

modifying the state of system by taking appropriate action. An essential requirement of MIS is feedback which is the process of communicating a system measured output to control system which generates effective control system, normally a manager in respect of business system. Ever since then, managers have been able to make decisions that help improve the company's performance and give it a competitive edge in the market.

Regardless of these mentioned advantages, the application of MIS is still limited to several factors that recent studies have also looked into the factors that impact management information systems (Chiu et al., 2016; Ismail, 2009; Hoang & Ngoc, 2019; Nguyen et al., 2020) or information on innovation performance (Aujirpongpan & Hareebin, 2020). Hence one of the major critique of Management Information Systems requires careful attention and training from its managers due to its intricate and sensitive nature (Jarboe, 2005). This is why it is important for organizations to choose skilled individuals to manage their systems. The more careful and experienced a person is, the more confident they can be in the success of MIS in decision making and other business areas (Lingham, 2006). Davenport & Short(1990), noticed that when all the components of MIS operate together to guarantee the overall efficiency of the entire system, a breakdown in one part leads to failure in the other parts since they are all meant to work together.

Krishnan and Singh (2006) study investigated the problems and challenges that nine Indian organizations encountered while trying to oversee human resources/ change management.

***The main human resource/ change management where the reengineering processes and structures were enacted had*** issues such as lack of technical know-how and expertise skills or knowledge. Also, the lack of importance and the fear of change exhibited by the employees on change management or human resource department in these organization. In order to

successfully implement human resources technologies, it is important for different units and teams in the company to work together and receive the necessary training.

Also despite MIS benefits in some areas of decision making application, another research scholar reportedly, been slowly but surely asserted that MIS poses surmountable detrimental effects to companies for this should be used sparingly or avoided if possible (Demetrius, 1996). Rhodes (2010) contributes to the discussion on how MIS helps improve decision making by stating that managers can easily access information through MIS. This may involve using other choice support systems, asking for processed details, comparing outside information and using data mining techniques. These systems can compare strategic goals with practical decisions, helping managers understand how their decisions align with the company's strategy. Rhodes strongly believes that MIS plays a crucial function in obtaining valuable information from organizations.

Unfortunately, only a small number of organizations have actively embraced this responsibility as well as also setting a standard for other organizations in society to emulate. As a result, there has been minimal progress in decision-making that is based on customizing variable information (Laudon and Laudon, 2013). This limited progress in decision making is correlated to adopting information technology in businesses and it shall also be discussed below.

As a cautionary point on the *emergence of information technology boost*, organizations are advised not to depend solely on automated systems especially when the decision being made could have negative effects. Some users also believe that automated systems can be unreliable at times and may need regular monitoring (Demetrius, 1996; Ralabandi, 2014 & Nanwoonde, 2019). To avoid depending so much on automated systems, Jahangir (2005) recommends that managers and entrepreneurs should make sure they combine the use of human input and

automated systems when delegating or executing tasks. In addition, Jahangir suggests that by combining both extremes responsibilities, the company or firm can effectively work together and also maximize each side's potential by monitoring and balancing operations.

LE *et al.* (2020) study, it was discovered the quality of processed details did not play a significant role in connecting the meditative functions between management commitment, manager's knowledge and management information systems. Bearing in mind that Mahoney and Frost (1972) earlier noted that studies conducted to explore how technology is connected to other workforce variables have not provided, thus far, a conclusive schematic image on role of technology in a parsimonious model of workforce behavior. The most prominent challenge in studying technology can be traced to the problem of obtaining a satisfactory operational definition of technology especially as MIS is more of a science-oriented field while business is art-oriented (Bytheway, 2014). Consequently, finding a middle ground where the two can be linked is quite challenging to some people and the continuous adoption and acceptance of technology in our business operations paved way for the advancement in technological infrastructures which is handled by skilled or specialized manpower.

*The advancement of technological Infrastructures for boosting management information systems services*, Indira (2008) said that the business performance improved because the accounting systems were computerized and digitized. This integrated application transformed the business process with features that enhance performance including accounting, inventory control, reporting and statutory processes. He then explains that this makes it easier for the company to access information quickly and make decisions faster, while also improving communication. However, Marriot & Marriot (2000) had critically observed earlier that running

of MIS programs tends to be relatively costly for some organization especially small ones who are not well-endowed financially.

Conclusively *on organizational effectiveness*, just like Marriot *et al.* (2008) pointed out, it is of great concern to know that companies continue to invest a lot of money in getting new information systems even though there is a chance that they may not see a positive outcome eventually. Thus, it is also easier to see the cost of information system failures rather than their successes, therefore effectiveness is sort. *In-order to achieve this (effectiveness), a critical review was appraised showing the previous studies where various conceptualized and contextual gaps in research persist through integrating management information systems in NIM's operation in order to attain institutional effectiveness.*

For example many studies have been conducted in developed countries like the United States of America, Japan and emerging economies like India. However, there is a lack of robust research on Africa in general and Nigeria specifically, thus leading to a local gap in knowledge. While also, the ranging pandemic (Ebola, Covid-19 and Polio) and political instability issues keep on purging the African continent severely. Apart from the conceptual framework discussed in this chapter, the conceptual gaps have also been discussed in chapter one of this study while also noting that the use of five different variables of management information systems on organizational effectiveness has not been carried out previously by scholars as most scholars targeted organization performance as their area of focus.

Hence, the challenges of using human resources development is also new/rare in the research world and seeks to fill the gaps.



### **Appraisal of Literature Review and Organizational Effectiveness Attributes Expected From MIS Impact**

From the literature review and its criticisms, it was noted that the awareness of the importance and utilization of management information system (MIS) technology is an essential requirement that every modern manager must satisfy to ensure organizational effectiveness. The future of the nation's industries and its global competitiveness is intricately linked to the capabilities of human resources development via its human capital. At the beginning of the literature, having previously mentioned the boost of information technology through the modern business solutions such as like Artificial intelligence, Augmented reality, Digital blue prints, Blockchain and how management information systems has impacted on organizational effectiveness through the Internet of things (as seen in smart office of Industry 4.0), Robotics (as seen in Industry 5.0 and machine learning), Virtual reality (as seen virtual learning) and Remote working (as seen during and post covid-19 global pandemic), the capital and technology involved gives room for proper advanced technological infrastructural investments.

Schilloff (2020) noted that as the world transitions from industry 4.0, despite its huge technological gains in industry data automation efficiency and productivity (which are positively due to advancements in the internet of things(IoT) and artificial intelligence), looking at the future, machine processes will be responsible for specific learned tasks. Adel (2022) had duly noted that futuristic role in the further advancement in technological processes will lead to Industry 5.0 where the systems will correct and control themselves and also yield increased data volumes to be harnessed and analyzed. All these needs adequate time and funds. These may be challenging but necessary for machine learning (ML) where Artificial intelligence systems are designed to absorb and learn from every last bit of available information (Olawoye et al., 2024).

To meet this challenge, security process modifications that capture production data and root cause analyses at every processing step such as inventory management for Big Data must be adhered to (Raj et al., 2023). Bearing in mind that Industry 4.0 is characterized by automation and Internet of Things while the more advanced industry 5.0 deals more on human-robot collaboration and physical as well as digital realms. Also despite some of MIS huge benefits mentioned in the review, on its criticisms, Joshua and Akinsola (2019) also showed similar concern on how to effectively apply and sustain these modern information technology and management information systems tools has become a major challenge to enterprises and firms. The researcher, therefore aims at bridging the aforementioned gaps by addressing these identified contextual and conceptual gaps of the study by also looking into previous research works and how different research scholars came up with various strategies which relates such as:

1. **Pre-chartered era:** Management Information Systems facilities should be demand driven rather than technology driven. For the best technology is the one which can best meet the user needs rather than the most advanced ones. For it is required that this team must be knowledgeable on the process of organizing the activities of production and business of enterprises, capable of innovative, flexible, able of teamwork and collaboration with employees in other functional parts of businesses (Ainin *et al.*, 2013).
2. **Pre-chartered era:** Proper leadership is important to drive MIS integration. DeLone (1988) stated that the company owner plays a crucial role in making sure information technology is effectively put into action. This is essentially important for the cross-department IT projects and appropriating the needed funds. Hence, businesses with knowledgeable and experienced owners will find it easier to successfully implement modern technological solutions (DeLone et al., 1992).

3. **Human resources/change management:** Human resources development, in terms of both technical professionals of information technology and end-users is the key for any information systems project to succeed and must be strengthened. The significance of human resources/change management's involvement and support in enhancing the effectiveness of MIS have been acknowledged in studies (Thong, 2001; Ismail & King, 2007; Lee, 2014).
4. **Human resources/change management:** Human resource constraints are a major consideration in designing IT projects especially as the demands for both technical and managerial resources are limited and substantial (Ball, 2001). The top management commitment involves the participation and backing of management in carrying out the management information systems project in the organization (Rapina, 2014). Hence, Organizations are advised to effectively use the available human resources and seek expertise or consultancy where necessary.
5. **Human resources/change management:** There is need for proper safeguarding in the designs and application of MIS in-order to ensure that there is sufficient level of transfer of technical and managerial know-how to sustain and further develop a project (Jarvenpaa & Ives, 1991). Moreover, when managers actively take part in deploying and implementing MIS, it motivates users to have a positive outlook on using MIS. This, in turn makes the implementation process smoother (Thong et al., 1996).
6. **Post-chartered era:** Organizations should establish adequate deployment mode on procurement roles and methods to set the tone for emerging legal and regulatory issues (Poston & Grabski, 2001). They looked into the financial effect of Enterprise Resource Planning (ERP) implementations. Hence, systems would be interfaced with user module

to transmit signals which enhances remote access, digital data exchange, automated reporting and real time work floor control. This enables business operations management efficiently and maintains easier employee engagement.

7. **Post-chartered era:** There is need to popularize the study of computer and its application in the industry in order to enhance information technology skills (De lone, 1988). This could also be a multiplier effect to the extent that rather than fresh graduates leaving the country for technological jobs abroad, they can stay back and develop their own country. Digital literacy should be enhanced as Industry smart office relies heavily on the integration of digital technologies must be a fundamental part of the education system. Hence, this support that realization that it can help stem the effect of brain drain and lead the way for development in the local industries (Halabi *et al.*, 2010).
8. **Emergence/boost in Information technology:** Management awareness and appreciation of IT and the attention to IT efforts must be substantially raised (Nath & Badgujar, 2013). For top management support means that the managers approve and provide ongoing support not just during the IS project's implementation but also throughout the system's operational phase (Al-Hameedi & Al-Abeed, 2009). Without the understanding and support of top management, any form of computerization and information systems development projects can be very difficult to succeed.
9. **Emergence/boost in Information technology:** The main issues in the technology use for regulatory bodies and SMEs are the lack of financial resources and fast developing IT (Malaranggeng, 2009), management knowledge (Francalanci and Morabito, 2008 & Levy, et al., 2011,). IT projects are feasible only when clear objectives and proper incentives for their application are given. Dibrell et al. (2008) showed that the technology

investment plays an important role in the innovative character of companies and their performance. Moreover, several studies identified that using IT technologies has its positive effects on performance (Cragg et al., 2002; Ismail & King 2007). Innovation, collaboration and networking should be encouraged as Industry 5.0 is not just about machines but about people working alongside machines. Therefore, there is need to ensure widespread understanding and acceptance of such projects before they are implemented as IT is a key driver and should be sustained for a major administrative tool.

10. **Advancement of technological infrastructure meant for MIS services:** There should be efficient plan to integrate and develop the manpower resources needed for its information infrastructure and systems. Bailey and Pearson (1983) noted that users need to think more on how the quality of processed data affects how well management information systems work. As management information systems are considered a critical contribution to firms' performance (Vannirajan & Manimaran, 2009). Advanced innovations of technologies such as Block chain, Internet of Things, Digital Blue print, cloud technology, remote working, augmented reality, virtual reality and machine learning are all keys tools for Industry 5.0 which needs to be considered ethically as the industry is people orientated thus, ensuring that technology is used for the betterment of the society is a shared/collective responsibility. Hence, there should establish methodologies for information systems development standardize and coordinate relevant reserves as emphasized by Chong and Reinders (2021). For researchers have shown a high level of interest in the quality of processed data regarding management information systems' effectiveness (Shagari et al., 2017).

11. **Advancement of technological infrastructure meant for MIS services:** An MIS also provides different types of information based on users' need to improve effectiveness and efficiency (Shim, 2000). A careful choice should be made whether the project is within the budget or not and where required administration should provide funds for technology infrastructural directed changes as the workforce needs to be comfortable with digital tools and concepts. In this rapidly evolving era of Industry 5.0, the urgency and significance of repositioning the workforce to meet the challenges and opportunities presented needs new industrial revolution. Caniëls & Bakens, (2012) also added that this advancement encourages digitalization, virtual/remote working, and electronic channels of transaction and speed transfer of documentation processes.
12. **Organizational effectiveness:** creating awareness of the fundamental benefits of effective administrative practices is vital to the information technology utilization harnessing of the Nigerian economy in all its ramifications. The Nigerian educational system through labour demands should fully utilize the evolving revolution emphasized on Science, Technology, Engineering and Mathematics (STEM) education. Balaban, Mu and Divjak (2013) supported that electronic and digital portfolio user satisfaction has a positive effect on net benefits. As it is most likely to be achieved by a firm or enterprise which offers value to its staff or members by enabling professional mandatory development programs to its entire staff/member and in return, enhances proper manpower training (Urbach et al., 2010).
13. **Organizational effectiveness:** the reality of Big data applications paved way for Industry 5.0 and it should be embraced and also adapted to ensure organizational effectiveness as the desire to integrate the MIS level in the company with other levels of its management

systems is driven by a vision of globally competitive enterprise with all its critical information available everywhere in an electronic form (Kim *et al.*, 2014). Another researcher, Iskandar (2015) describes how users actively participate in the planning, development and implementation of management information systems. The ultimate objective is the ability to make operating decisions and implement them in real time on the basis of accuracy and speed of information processed.

*On the Organizational effectiveness attritubes expected from management information system's impact*, it is important for the institute (the case study) to further gain competitive advantage by continuous exploitation and adoption of management information system on organizational effectiveness. However, maintaining a competitive advantage implies the regular assessment of organizational effectiveness and this is not something to achieve one off then forget about it. Hence, the Nigerian Institute of Management (Chartered) must continually question the efficiency of their operations, employee performance on technological changes and leadership styles. For the parameters and principles expected stand out due to their brevity and clarity of expressing the continuous impact of management information systems to enhance organizational effectiveness.

In recent times there have been several attempts to identify and explain the organizational effectiveness principles which refer to how effectively an organization achieves its desire goals. Using Management Information systems as an impactful measurable guide, the collaboration of employees, leaders and processes are involved and requires cohesion of human resources for operational efficiency. Bearing in mind that, the researcher had earlier cited Avgeoru (2000) who stated that improving the organization's ability to reach its goal is critical to delivering credible value as creating a successful organization means achieving organizational

effectiveness. At this juncture, Obamiro et al (2019) had duly cited the way companies are managed is commonly referred to as corporate governance. Thus, the essence of implementing the corporate governance is to enable and enhance organizational effectiveness (Ajogwu, 2007).

Therefore the expected organizational effectiveness attributes from the continuous application and impact of management information systems for the Nigerian Institute of Management (Chartered) are in line with Anderson and Adams (2022) Leadership Circle as well as also with the International best practice on organizational effectiveness and corporate governance such as the South African King Report (IoDSA, 2016) and Australian Stock Exchange (ASX, 2019), which elaborately discussed that the following attributes or principles while the research aligns them with the case study;

**Leadership:** As previously mentioned, the Nigerian Institute of Management was established in 1961 as the Nigerian Management Group. Established to play a leading role in training and developing administrative personnels as well as leaders in all aspect of the society with a view of ensuring good management in Nigeria. Expectedly the pioneer leaders of NIM would always play a foremost role in the progress and prosperity of Nigeria through better management and development of dedicated effective managers.

Therefore, today's leaders must be able to translate vision into strategy, processes and objectives. Strategic vision-leaders in the company should have a broad and long term perspective on organizational effectiveness and good governance and human resource development along with a sense of what is needed for such development. There should also be an understanding of the historical (Pre-chartered), cultural (leadership style and re-engineering) and social complexities (Post-chartered) and in what perspective is grounded and aligned in the Nigerian Institute of Management environment. Through the positive impact of management



information system technology, the institute effectiveness is gradually gaining back its lost glory witnessed during the pre-chartered era as efforts are being made to revitalize the institute as the leader in the training industry by improving on its corporate image and to increase its membership collaborations and services.

**Information and Communication:** Offerring computer services to the company and the use of specific ICT activities is key to achieve developmental goals for the company. For low computer literacy and low ICT resources utilization is a challenge to achieving successful communicable processes for the company. Therefore, communication should be strategic and consistent plus it should also attain result and above all, be effective. While also noting that effective communication is crucial to the success of the enterprise just as disclosing information is vital bearing in mind that openness provides a basis for confidence and conflicts arises from communication gaps (which also creates unfriendly and hostile working environment). Disseminating of processed data on modern administrative issues along with techniques are communicated on to members, the general public through the Management in Nigeria journal, which serves as the official mouthpiece of the Nigerian Institute of Management.

However adequate plans has to be made to create more value adding mouth pieces with right management information systems in order to stay afloat with modern/updated business practices. This implies that procedures for proper management should be equipped with the necessary knowledge and information needed to discharge their responsibilities or duties effectively and that individuals or collective displays are regularly reviewed to stay afloat with modern technologies in the management information systems for effective communication.

**Accountability:** The need for accountability by both public and private corporate leaders is being stressed now more than ever before in Nigeria as there is also need to rethink the way

our resources are managed effectively. In the Nigerian Institute of Management, the impact of management information systems will ensure flexibility, speed and accurate delivery of the right information to the right users at the right time as a computerized accounting system would also assist financial data in decision making. Noting that, monitoring accountability requires systems with real consequences and tangible rewards. As individuals or groups who make decisions and take actions on specific issues need to be accountable for their decisions and actions. Mechanism must exist and be effective to allow for accountability.

This allows or provides stakeholders credible means to query and assess the actions of the council or management or committees. Noting also that, the private sector, non-profit organizations, professional membership institutions and civil society organization are accountable to the public as well as to institutional stakeholders.

**Delivery:** The advent of the new generation (technology advancement) management training institutions as well as their proliferation in the marketplace has culminated in the Nigerian Institute of Management's creative approach towards responding to the yearnings of the marketplace. In doing this, the institute has to cut down on its bureaucratic approach in order to move on with fast deliveries. Operations must stay aligned with strategy, continuously improve and build future capabilities for this will also encourage transparency.

Transparency in delivery process is built on the free flow of information bearing in mind that processes, institution and information are directly accessible to those concerned (stakeholders) with them and therefore adequate information is provided to understand and monitor them. While, a holistic approach is crucial in government institutions and settings to allocate resources effectively and create an effective delivery system for services.

**Productivity:** Proper training is the most cost-effective way to increase productivity and improve the company's goals. Hence, there is need ensuring that personnel training staff are also well trained themselves for the Institute has developed and produced up-to-date courses which commensurate with modern day demands while offering improved membership services backed by adequate/advanced information technology facilities.

The curricula for training would undergo radical changes to reflect up-to-date realities especially regarding the imports of globalization and related developments such as multi-networking, acculturation, mega-mergers and nitching. Meaning that there would be greater emphasis on globalization on one hand and also demand for personalized development locally on the other hand. This is facilitated by the freedom of internet and information technology as the major training area will be conducted through the continuous use of advanced technological infrastructures.

Doing this will further resuscitate the research and consultancy activities of the Nigerian Institute of Management as the flow of company's output is economically vital to organizational effectiveness as employee productivity should also be a methodical, systematic approach designed to attract, develop and retain top talent, among other things. When facing disrupting issues, organizational effectiveness can make all the difference as the institute can boldly face challenges head-on and prioritize continuous growth. Hence, it is further noted that by committing to organizational effectiveness, the institute would build resilience and this process involves all the stakeholders from top (leaders) to bottom (staff).

**Measurement:** The Nigerian Institute of Management is the oldest management training institute in Nigeria. It is also a membership base body that draws its membership strength from different strata of the Nigerian workforce. A multidisciplinary team of statisticians, engineers,

medical, media, legal practitioners and other science plus commercial based professionals are put together as the players that measure management profession. Some of the members are society heavyweights as it has the capacity to generate funds through membership subscription, training, seminars, workshops fees and sponsorships from the corporate world as well as individual members.

These parameters (players or stakeholders of the organization) for measurements also requires training in order to achieve any chance of an increase in productivity. Just as the trained sales manager can handle more clients/members group than the untrained one. For example, all the results of training cannot be measured directly unlike results which can be seen indirectly by increased patronage on a long term basis. Also, the accreditation for the major institute programmes can be cumbersome if the right approach of measurement and technologies are not used. To stay on track, the organization should systematically apply metrics and adjustments. Noting also the effectiveness and efficiency processes and institutions produce results that meet the needs or expectation while making the best use of the available resources.

**Discipline:** One of the challenging task managers encounter is disciplining employees for it must be done right in order to avoid conflicts and possible legal battles. Therefore, the commitment by the top management to adhere to behavior that is universally recognized and accepted to be correct and proper, requires adequate discipline and training. Also, using the new technological systems, the MIS acts as a fast and modern human resource tool for replacing the most outdated employees' handbooks and their guidelines. For this proper execution of disciplinary actions and techniques this encompasses an organization's awareness of, and commitment to, the underlying principles of good governance and organizational effectiveness.

Employees and leaders are ineffective without efficient processes for operations which should be fast, lean and cost effective while staff also relies on operational efficiency to do their work. Together, this ensures discipline as the employees; management and processes must align to be effective.

**Motivation:** The impact of management information systems and its appliances will also serve a basic tool for continuous improvement the organization as it focuses on the use of this ‘toolkit’ in problem solving ventures and structures for better motivation toward achieving organizational goals and effectiveness. Employee motivation is a key contributor to effective organizational effectiveness and corporate governance as their performance is critical to the workplace context.

For example, the Nigerian Institute of Management would ensure that the level and composition of remuneration is sufficient and reasonable with the present economic labour wages and that its relationship to corporate and individual performance is defined. This means the institute needs to encourage the continuous adoption of remuneration policies that attract and maintain talented and motivated managers or staff in order to encourage enhanced performance of the organization. Bearing in mind that it is also important that there be a clear relationship between performance and remuneration and that the policy underlying executive remuneration be understood by stakeholders.

Interestingly enough, this advancement in technological infrastructures lead to flexible working hours and remote or virtual working arrangement as knowledgeable and technological skilled staff benefit from this scheme. Such a flexible arrangement has a success story of reducing turnover, safer working environment and decreasing the use of overtime as well as also increasing productivity.

**Transparency:** Through the advanced deployment of e-payment, e-documents and virtual workshops like any new technology has its challenges however the benefits of transparency and accountability outweighs the challenges. Maintaining transparency is the best way to engage employees in effort to achieve organization effectiveness. This can be done by setting out the roles and responsibilities of everyone involved and share progress of the strategy adopted at regular intervals, which will encourage or motivate staff to keep on pushing.

Pranchi (2015) cited Douglas McGregor's theory and also recognized that people tend to work harder when the feeling of their commitment and contentment in process of the company is accountable. This is desirable especially as people develop a sense of commitment when they participate in the planning and deciding aspect of the company then transparency is obtained. Also when transparency is involved, the ease with which an outsider is able to make meaningful analysis of an organization's actions, its economic fundamentals as well as its non-financial aspects pertinent to the business operations will be achieved rapidly. This shows how informed management is at making necessary information available in candid, accurate and timely manner.

**Responsibility:** It is the responsibility of the human resources development in a company to ensure proper manpower usage where the right people are placed at the right place to do the right job. Furthermore they are motivated by management or administration to work smarter with lower aggregate output. This means that the personnel's input is efficiently and skillfully managed to ensure that he/she provides the right services for the organization.

However as a centre for managerial capacity development, the Nigerian Institute of Management would also expressly proceed to set up the apparatus for the pursuit of excellence in all aspects of managerial undertakings. This involves physical as well as the workforce

structures, education, training, development and research programmes as well as information and outreach programmes. Therefore the institute responsibilities are in line with its mission which is to promote management excellence as it is poised to extend its training and development services to all sectors of the country (Management in Nigeria, 2019).

The NIM is focused on empowerment of management information systems as management techniques for its responsibility pertains to the behavior that allows for corrective action and for penalizing mismanagement. A responsible management world, when necessary, put in place will require what it will take to set an company on the right track or path. Why the Council is accountable to the institute is due to the fact that it must act responsively to and with responsibility towards all stakeholders of the organization.

**Fairness:** The Nigerian Institute of Management's role as a training institution comes in with other crucial concept formation and semantic purification. The training aspects has an introductory path which deals with ethics and values. Furthermore other terms such as justice and fairness are also introduced to align with the best practice in the work environment. These introduced acceptable values are national in structure for they are to be integrated to the system.

The system that exist in a company must be balanced in taking into account all those that have interest in the company and its future. The rights of various groups have to be respected. For example a stakeholder based outside the head office should also be able to receive membership benefit that is the similar to stakeholders based at the head office chapter. Also, participation of all men and women should have a voice in decision making either directly or through legitimate intermediate institutions that represents their interest.

For such broad participation is built on freedom of association and speech as well as capacities to participate constructively while bearing in mind that equity for all men and women

also have opportunities to improve or maintain their well-being. This further implies that the legal framework should be fair and enforced impartially.

**Social responsibility:** A well managed company will be aware of, and respond to social issues, placing a high priority on ethical standards. The Nigerian Institute of Management offers wide ranges of services for both the public and private sectors of the economy such as training, research and consultancy activities which promotes the directed changes of management practices and ideals.

Gender equality is also explored and integrated in the training and use of management information system tools as qualified women (just like their male counterparts) are largely encouraged to take up managerial roles for a good corporate citizen and an effective organization are increasingly seen as one that is non-discriminatory, non-exploitative and responsible with regards to environmental and human rights issues. Hence, organization which such pedigree is likely to experience indirect economic benefits such as improved productivity and corporate reputation by taking these factors into considerations.

**Workforce engagement:** The Institute zones have been strengthened as well as her chapters which spread around or cut across the nation in order to give a more visible national character to its administrative activities. Hence effective monitoring is needed through the usage of the management information systems especially to zone which may not be easily accessible for monitoring progress is vital to ensure long lasting results. Besides comparing net profit to the desired profit records, another principle expected when organizational effectiveness is met is the workforce engagement. It is used to track progress. Are employee engaged in the new workflows? Are they happy using the latest technology or software? Bearing in mind the internal processes run more smoothly when employees perform well.



Therefore by assessing employee satisfaction and performance the organizational structure's effectiveness is also determined through change management motivational agents. Change management involves strategic communication and working with employees to build motivation. Noting also that change manager's increase employee engagement by promoting the ease of business operations, maintaining momentum and reducing resistance to change as the strategy involves around the organization's structure.

**Integrity:** The grant of a chartered status in the 2000's paved way for the institute to have advanced technologies for management information systems and also lead to the official/legal empowerment for the regulation, control and development of the management profession. This, no doubt boosted the institute integrity as it became as a prime catalyst or simulator for management excellence, thereby having a structure to independently verify and safeguard the integrity of the organization's financial reporting.

This requires the institute to put in place a structure of review and authorization designed to ensure the truthful and factual presentation of the organization's financial position. The structure would include a review and consideration of the accounts by the audit committee or internal auditor. The institute would need periodic overall examination to ensure proper evaluation of the organization's account and practices as the managers sometimes cannot objectively evaluate themselves in their operations. Thereby leading to the demand for an external audit process. Thus this would also include a process to ensure the independent and the competence of the company's external auditors.

**Management excellence:** An effective organization would recognize and publish the respective roles and responsibilities of the council and management. The organization's frame work should be designed to enable the Council to provide strategic guidance for the organization

and effective oversight of management. Also it should be designed for explaining the respective functions and obligations of the Council members and top management in order to facilitate council and top management accountability to both the institute and its stakeholders. Structure the management and Council to add value by having effective composition, size and commitment to adequately discharge its responsibilities and duties.

Bearing in mind the effective management and council would facilitate the efficient discharge of the duties imposed by law on the directors and add value in the context of the institute present deployment of management information systems facilities to ease business services. Coincidentally, the Nigerian Institute of Management (Chartered) official mission statement is “To be the source and symbol of management excellence” (Management in Nigeria, 2019) and this further justifies the credibility of the chosen case study.

To ensure management excellence, the institute must constantly renew, update and improve its corporate identity strategies, must also create an enabling environment to attract and retain top flight performances in the institute, upgrade the idea or information sharing activities of the institute into an identifiable organizational development unit, must continually strive to improve its services and improve its information/database to achieve excellence. Fortunately, through the continuous adoption and usage of advance technologies and its infrastructures, all these factors for management excellence are highly feasible and are indicators of organizational effectiveness principles.

**Timely transactions:** An expected essential organizational effectiveness principle when achieved is the promotion of timely and balanced disclosure of all material matters concerning the institute/organization. This means that the institute must put in place mechanisms designed to ensure compliance by having a proper understanding of and competence to deal with the current

and emerging issues of the business and can effectively review (and sometimes challenge) the performance of management by exercising balanced judgment.

Also, creates the timely access to material information concerning the institute as well as using software or hardware or management information systems to drive adaptive tedious processes into modern technological infrastructures processes. Hence, the training involved would be top notch as it is expected have a curricula that will undergo radical technological changes to reflect the updated events and in particular, the imports of globalization and related developments. Keeping in mind that there would be greater emphasis on international on one hand and more demand for personalized development on the other hand which was brought on by information technology through management information systems.

**Recognize and manage risk:** It is recognized that in order to survive, the Nigerian institute of Management (Chartered) needs to be aware significantly of the risk or challenges it faces and should have a system in place for controlling them thereby establishing a sound system of risk oversight, risk management and internal control. As risk management itself is therefore a principle function of assuring organizational effectiveness and should be approached enterprise-wide and integrated in design.

For the system would be designed to identify, assess, monitor, handle risk and also to inform stakeholders of material changes to the institute's risk profile. For example; a scenario of investing of advanced technological infrastructures during the pandemic era. This process involves huge capital including the design of a virtual smart office should be monitored and assessed from the developing stage. This could be collectively cumbersome but if the risks are not properly managed, for the results can yield to marginal profits as compared to the cost incurred when operating a physical office.

**Ethical responsibility and decision making:** organizational effectiveness when achieved also actively promotes ethical and responsible decision making. The Nigerian Institute of Management would clarify the standards of ethical behavior required of institute top management, staff and also encourage the observance of those standards as this is also vital to promote its corporate social responsibility of the institute. Also the Institute should be able to publish its official position concerning the issues of the Council and employee trading in the Institute or organization securities and in associated products which operate to limit the economic risk of those securities.

How people make decisions, processes of that decision making and improving decision making by leveraging additional choices. Bearing in mind the impact of management information systems significantly effects the quality and speed of the decision making process. However, the extent to which mechanisms have been put in place to minimize or avoid likely conflicts of interest which may exist, such as dominance by a strong stakeholder also paves way for ethical responsibility by complying towards NIM Code of Conduct. For the use of management information systems will further enhance and promote the publicity and use of the Code of Conduct to all practicing managers in the country.

**Human resources development:** Amidst some uncertainties and unpredictability's of Nigerians and outside world business environment, new approaches to the ways people are lead and how resources are managed must be employed in order for organizational effectiveness to take place. Hence, human resources have extended their roles from recruitment, selection and appraisal functions to effective change management processes, training, career and skills development.

Thus, this added responsibility or shift in responsibility has also transformed the human resource progress into a value added function to achieve organizational effectiveness and these functions are different from their conventional administrative or managerial roles. Notably, the Nigerian Institute of Management (NIM) is a regulatory multidisciplinary professional body which came into existence in 1961 as the trainer of the management practice in the nation. The institute's overriding goal through its career development is to ensure that staff and key administrative members have the competence, inspiring and management skills to make successful transitions from one administrative role to another. Hence it also became highly influential to its human resources development.

**Stakeholders Engagement and Satisfaction:** This is another indicator of organizational effectiveness for an effective company provides quality services to its stakeholders. Bearing in mind that internal processes directly impact on the esteemed process of services the institute offers, the institute have some legal obligations and other obligations to stakeholders such government agencies or officials, employees and members. Also recognizing the legitimate interest of stakeholders would further create value and enhance organizational effectiveness for there is growing awareness belief stating that companies can create value by better managing natural, human and social capital.

- Government: Policy formulation, directional guidance and implementation. Allocation of Resources, Implementation of operational and maintenance programmes and upgrading/expansion of facilities to meet technological advancements of the time.
- Researchers and Academics: Provision of new methods capable of enhancing planning, design, implementation, management, maintenance, upgrading, among others.

- Private Sector: Funding, Critical Manpower, Technological Hardware, Political, Legal and Environmental/ Social impacts amongst others.
- Public Private Partnerships: Trio collaboration to meet overall financial and technological needs.

Moreso, the Institute would further seek to satisfy its stakeholders such as the general public, individual and corporate members as well as its staff using the right management information systems for its business operations to accurately achieve desired organizational goals. It is also interested in attracting prospective members from the generality of the public who are in management practice and generating the interest of researchers and consultants. It operates in such a way that it generates actions that foster good relationship with other research institutions as well as other professional bodies, then ensures linkages with organizations that are relevant to the developing the society. In other words it seeks to impact the society for advanced learning's with its programmes of management information systems.

Currently, the Nigerian Institute of Management runs a responsiveness-institution where the management information systems processes try to serve all stakeholders just like the consensus oriented governance which mediates on different interests to reach a broad consensus on what is in the best interest of the group and where possible on policies and procedures to comply.

**Technical user ability:** People are considered the most valuable asset in organizations. It is therefore, important that they have sufficient and appropriate skills to do the work required, now and also in the future. With the advancement in the usage of technology, the institute is now anxious to ascertain the best level of management practices and the effective utilization of trained management information systems users for better productivity, delivery and high target

achievement. Having the requisite skills and competencies to effectively re-define, re-strategize and restructure enormous resources available is an important way of ensuring organizational effectiveness as once the institute value chain is understood; the users (stakeholders and staff) can align with the institute's goals provided the change factor is ready to also be complied with.

Advanced infrastructural developments such as adequate awareness of the capabilities, robust capacity building, technical support, collaborative planning and access to resources as well as monitoring, evaluation and policies which aligns with the regulatory framework can be achieved.

For example, trying to provide a better stakeholder's experience through automation would favor or suit a technical inclined or technical savvy stakeholder who would prefer online automated platforms with the institute as the method of interaction. However, this would involve implementation strategy, change management procedures and execution commands. Therefore aligning strategies with goals assist enterprises to make necessary changes to the structure of the institute in order to attain organizational effectiveness. Bearing in mind also, that limited technical expertise and access to technology creates shortages of expertise which causes delays, poor quality, cost overruns and less resilient hence there is need to build on technological manpower along with financial progression.

### **Summary of Literature Review**

In summary, the overall activities, challenges, prospects and literature of the NIM considered to make it relevant in the management and administration of all sectors of the Nigerian economy (see figure 3) have been highlighted. Hence in considering the impact of management information systems in its establishment, an appraisal of literature review was done where it

could be summarized that this chapter reviewed by discussing the different theories that explain the independent variables along with the dependent variable. Then these reviewed theories were evaluated critically for relevance to specific variables describing them. This chapter also looked at how the independent variables and the dependent variable are generated and how they are connected as well as concludes with the intention to support the conceptual framework. Moreso, the researcher conducted the empirical review of past studies from both global and local sources.

It could be said that the Nigerian Institute of Management (Chartered) of the 21<sup>st</sup> century and the future should continually review its programmes of activities to the best practice in order to create more value and cope effectively with the modern changing needs of time/future and also ensure its continued relevance in the management profession. It is from these observations and critiques which resulted in the thorough identification of the research gap. Thus, the processes of bridging the identified gaps was focused or centered in line with the conceptual framework as well as the purpose or objectives of the study.

Therefore, the gaps in methodology, model specification or approach, population of the study and estimation techniques in sampling, procedures and the data collection requirements and materials sources are discussed in the research methodology of chapter three (next chapter).



## **CHAPTER 3: RESEARCH METHODS AND DATA COLLECTION**

### **Introduction**

Bearing in mind, the purpose of this research was to determine the impact of Management Information systems on organizational effectiveness in Human Resources Development using the Nigerian Institute of Management as a case study (Neuman, 2014). Therefore this sector majorly describes the methods used to set out the research processes. In this case, to employ multi-factor models used to investigate (qualitative method) and explain organizational effectiveness by further testing numerical datas (quantitative method) obtained on the adherence to the Technology Acceptance Model –TAM (grounded theory) in the advancement of technological infrastructures responsible for the growth of management information systems.

To properly layout the research methodological proceses, the researcher further saw the need to develop a research onion. According to Saunders et. al. (2016), a research onion is a tool which helps to organize the research and develop research designs following the layers of the research onion step by step. This layers are Research Design or Strategy (Onion layer 1), Research Approach (Onion layer 2), Research Choices (Onion layer 3), Research Philosophy (Onion layer 4), Research Time horizon (Onion layer 5) and lastly; Research Techniques and Procedures (Onion layer 6). To achieve that, this next section emphasizes on the study design and approach.

### **Research Design and Approach (Onion layer 1 and 2)**

Research design involves organizing information by collecting and analyzing data in a way that is both relevant to the research goal and efficient in the process. In other words, its deals with comparing and analyzing individuals or other units in a logical way to form the basis for

making interpretations from the data (Upagade & Shende, 2012). This study also adopted research choices as per Saunders research onion (Saunders et. al, 2019) where both qualitative and quantitative data were employed with the aim of equal usage. This Quantitative and Qualitative Design is a Research Choice known as *Mixed method (Onion layer 3)* and its objective was to measure (quantitative) the impact of Information Technology on the Nigerian Institute of Management (Chartered) organizational effectiveness and also to understand (qualitative) the pattern of how the different variables interconnect to achieve this goal. This different variable (independent variables) propelled the need for hypothesis testing on the organizational goal (dependent variable) to ensure the most relevant variable is discovered. This is in-line with Sankaran et. al. (2012) who cited that in a mixed–method design, a blend of quantitative and a blend of qualitative are mixed in-order to observe certain other reactions within a population. The main aim of this mixed-method framework lies in trying to complement qualitative data with quantitative data in order to rule out the possible limitations of both choices.

The mixed-method research approaches are of two types, the sequential mixed method and the concurrent mixed method (Mwanzia, 2021). While the sequential mixed method collects either the quantitative or the qualitative at the initial stage followed by a second stage of collection of the other data type, and the concurrent mixed method involves the collection of qualitative and quantitative data at the same time (Teddlie and Tashakkori, 2003). Hence for this research, the sequential mixed method was chosen by the researcher. These mixed methods also aimed at validating results using any angle or using the two (qualitative and quantitative methods) mixed research methods/approaches. Furthermore, scholars like Polit and Beck (2008) asserts that, research involving numerical data from questions resulting to a yes or no fixed response (closed-end), are positivist and naturalist philosophy from quantitative approach.

Hence, this research used the quantitative approach through the collation of data from closed-end questionnaires. While the qualitative research approach on other hand, aims to explore or investigate the interactions observed on human or social problems. Data here was collected, analyzed and interpreted for further understanding based on what people do or say. Hence, this research also used the qualitative approach for better understanding of the variables and their interconnecting patterns. Measurements and collection of data was done here through interviews and group discussions. Research scholar like McNabb (2008) philosophically asserts that interpretative and critical paradigms are central to qualitative approach. Qualitative research is not interested in closed-end responses and how things are done (like the quantitative) but is interested in open-end responses and why are things done and considered case study as one of its key design strategy (Saunders et al, 2009).

Also another set of scholars, Onwuegbuzie and Leece (2005) while expressing their views on research design and approach had emphasized on the usefulness of studying a limited number of in-depth case and alignment with those samples into stratas lead to the consideration of Stratified Random Sampling (Tsuokatos, 2019) for this research where the membership base and staff strength are huge in numbers. Hence, the stratified sampling of members and staff of the case study - the Nigerian Institute of Management (NIM) within the administrative headquarters (as internal stakeholders) with some non-members of NIM (as external stakeholders) was carried out. This study further used multiple regression analysis to check how and why the correlations between the variables exist. Therefore, since this research approach aimed to examine any relationship that existed among two or more variables (also known as correlational design of research) as Alexander Di Pofi (2002) had earlier stated, it therefore was deemed fit to be

adopted at some analysis stage of the research in-order to show proper linkage among the existing variables.

Noting also, the research had previously adopted a case study method in order to capture different events used to classify the complexity of a set of situated events that combines to produce a phenomenon. In line with Eisenhardt and Graebner (2007) assessment of a case study as a design which analyzes a single case intensively while following the required details. The organization (NIM) being a professional regulator and ethical body was chosen due to multidisciplinary nature and its strategic role in the regulatory sector as well as market forces of the management sector in the country. The organization has professional members in all the sectors of the industry who are the licensed managers that are responsible for driving the growth and stability in their respective industries. Hence, deciding to use a single organization like the Nigerian Institute of Management (Chartered) is in compliance with having a holistic nature and detailed picture of the institute.

Concurrently, Yin (2011) also argued that when performing a case study, it is often an industry, organization or workplace that is examined. A case study is highly descriptive and its design differentiates itself from other designs through its limitation regarding scenario with a purpose and functioning parts. It was in this perspective that the researcher decided to narrow the sample down to the administrative office where the source of materials will be descriptively identified and available with instant feedback. To achieve these objectives, the use of case study method was justifiable for both quantitative and qualitative approach because the researcher further adopted the Descriptive and Sequential Explanatory Research Strategy.

According to Saunders et al (2009), a Descriptive research approach describes an event or situation while the Explanatory Research approach carries out studies on the causal relationships

in a bid to explain the mixed method better and to know what to with the two data eventually. Thus the philosophical underpinning to this is that the Descriptive research is classified as Naturalistic paradigm and is used to describe the characteristics of a population or phenomenon being studied and inclined to know what is true based on consequence of different approaches.

### **Gaps in Research Design, Methodology and Approach**

Regardless of the proposed research methodology or approach mentioned here, there was need to do more and fill the mentioned gaps as seen from past studies (see chapter 2- Research gaps and reason for chosen methodology). Over the years, previous studies on management information system have made use of quantitative research methods only in order to analyze their data to either accept or reject the research hypothesis. Saiful (2020) and Gabriel (2022) among others are research studies channeled in the area of management information system. Saiful (2020) worked on the impact of management information system on crime management in Bangladesh.

The research scholar further suggested that management information system in Bangladesh suffers from three important problems. First, due to information management is often seen as an afterthought. Second, mainly due to security is seen as a latent approach, the question of the duality of development still arises. Thirdly, the concepts of information security are mainly theoretical. The study made use of only the quantitative research method (use of questionnaire as a primary tool for data collection). In the same vein, Gabriel (2022) researched on the effect of management information system on crime management in Lagos State. The research results shows that using management information system is critical and vital to the effective and efficient management of crime in Lagos and by extension the entire Nigeria.

The study made use of only quantitative research method in analysis and interpretation of data to ultimately accept or reject the research hypothesis. Another study by Jones et al (2020) discovered the Belize Police Department benefits from using MIS in a number of ways, including better coordination across departments and organizations, quick and consistent reference, access to related data and documents and use less labor. They further notified that MIS needs to be updated with current programs to ensure that all measures are taken into account and proven to be effective in carrying out the department's day-to-day operations (different from Belize). Past studies on management information system made use of the quantitative research method in analysis and interpretation of their data. These studies have a low to moderate research area, which implies they are covering an aspect of the country including the organizations. In addition, the studies were narrowed to mitigation of crime in states.

Therefore, this thesis majorly aims to employ multi-factor models to investigate and explain organizational effectiveness. Thus, this study intends to fill in methodological gap in past studies while relating use of a mixed method approach and wider research audience. Mixed method involves the use of quantitative research method (questionnaire) and qualitative research method (interview and focus group discussion) in order to validate the research results. By making use of the mixed method approach, the study intends to come up with research results that are widely acceptable and can be used for future studies. In addition, the research audience comprising of internal stakeholders of the Nigerian Institute of Management (Staff and members) and external stakeholders (non-members covering the entire country -Nigeria) further helps to validate the research results which can be used by future studies in the area of extraction of literature materials and secondary data source.

To fill the gaps and understand the study better, the researcher dug deep into the philosophy of the research.

#### **Research Philosophical Approach (Onion layer 4)**

This comprises of the different approaches or several factors, like how a person thinks, how a researcher views things, different perspectives, and various beliefs about what is real can all influence a situation. This idea impacts the beliefs and values of researchers, allowing them to offer strong arguments and use appropriate terminology to produce trustworthy results. This aligns with Gliner et.al (2016) who had stated that research philosophy involves a way of thinking about and carrying out research for it is not just a methodology but rather a guiding philosophy for how research should be done. The choice or selection of a research approach or method absolutely relies on philosophical assumptions and the nature of the research problem being addressed (Creswell & Plato-Clark, 2016 and Creswell, 2014). Therefore this study made use of Saunders et al (2009) model using three research assumptions. Saunders et al cited that;

- **Ontology assumption** is described as how the Researcher views the world in reality, as it deals with observable and measurable qualitative data (Interpretivism) while;
- **Epistemology assumption** is described as what is acceptable knowledge and what methods are there to gain this knowledge as it deals with objectives and quantifiable data (Positivism) and finally,
- **Axiology assumption** describes the values of the Researcher as the ultimate goal given for this mixed nature of study is to test and expand theories.

This was achieved through the application of the already provided knowledge in the literature review, and combining with the distribution and collection of data gathered from stakeholders based on their honest response being researched in relation to reality on ground, the

difference in leadership style, the correlational trends in the variables and effect of human interference. As previous philosophical scholars (Jick, 1979 and Guba, 1990), had also separated and grouped the research philosophies based on the view of the Ontological, Epistemological and Axiological Researcher perspective, while the most recent philosophical Scholars tend to classify the research philosophies, and explains that these research philosophies can be viewed in all three of the Ontological, Epistemological and Axiological Researcher perspective of reality and acceptable knowledge (Mkansi and Asiamah, 2012). They thus calls for a standardization of these research Philosophical approach and paradigms.

To avoid further confusion, research philosophical approaches applied by Saunders et al (2009) was adopted for this research. Saunders et al cited that Ontology is described as how the Researcher views the world in reality, and thus explores the angle that there exists knowledge yet to be discovered or known or simply put “what can be known”; whilst Epistemology is described as what is acceptable knowledge and what methods are there to gain this knowledge; and finally, Axiology describes the values of the Researcher. For this study, the Researcher takes the view of the Pragmatic Philosophical approach when viewing reality or existence of knowledge, as well as the methods to gain knowledge. The Researcher believes that although the application of a scientific research approach (Positivist Philosophy) to this research cannot be discarded, there is the need to involve human and social understanding in gathering more information (Interpretivism Philosophy), which could lead to new and more conclusive results based on cultural, social phenomenon and human interference.

According to Saunders et al (2009), a Pragmatic Philosophical approach combines both the Positivist approach (independent of human interface) with the Interpretivist approach (dependent on human interface). This is achieved through the application of the already provided

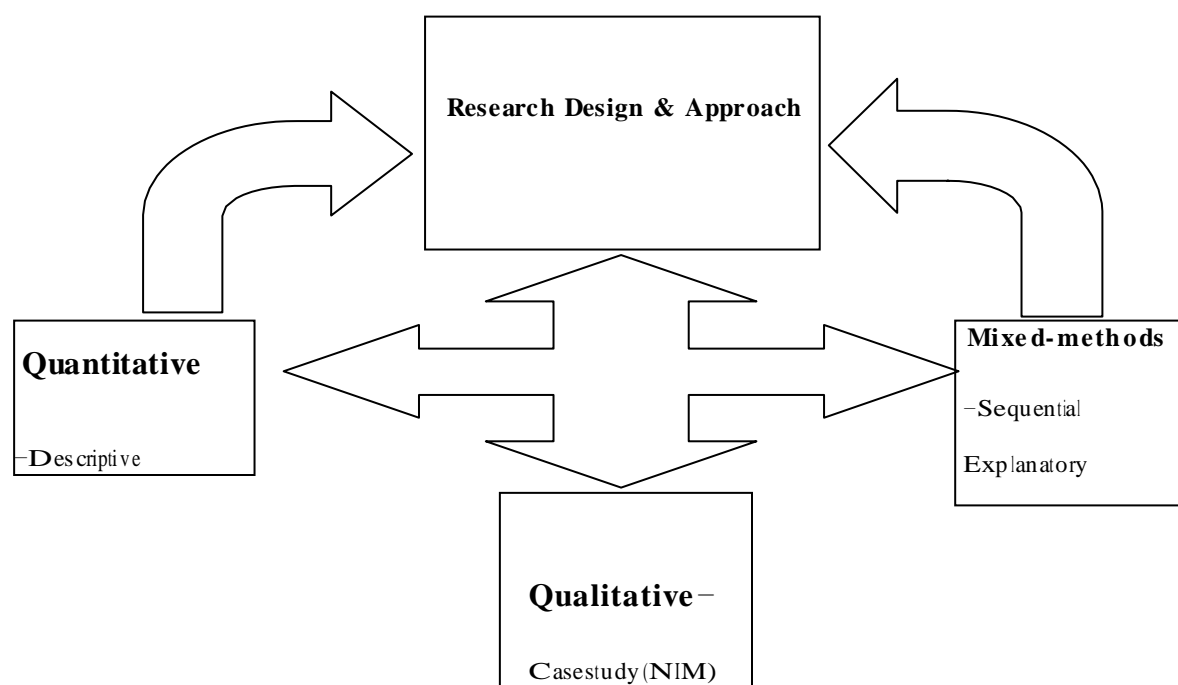


knowledge in the literature review, and combining with the data gathered from stakeholders based on their view of the events being researched in relation to reality, the difference in leadership style, and effect of human interference. Therefore the Research Philosophy being adopted for this study is the Pragmatism philosophical approach due to the compatible with mixed-methods (qualitative and quantitative research).

Several authors (Morgan, 2014; Pierce, 2014; Lorino, 2018 and Kelly, 2020) have propose *pragmatism as the best paradigm for justifying mixed methods* as it supports the using both quantitative and qualitative in one study and rejects incompatibility stance.

**Figure 5**

*Field Research Design and Approach*



Where the arrows indicate direction and interconnectivity to one another. Source: Field work

**Research Design Justification for the use of Descriptive Methods (Onion layer 5)**

This study also adopted a cross sectional descriptive survey design where the time-frame represented a snapshot view of a specific circumstance at a particular point due to the shorter time for collecting data for the research. Thereby justifying the descriptive survey method used along with it when compared with exploratory and explanatory research. As an Exploratory research is the first type of research which is mostly involved when the researcher has just begun an investigation and seeks clearer understanding of the topic at hand whereas, the Explanatory research is the last type of research and it is mostly concerned with why a particular phenomena under study works the way it does (Sheppard, 2020). However in this case, the researcher made attempts to identify the causes and effects of whatever phenomenon is being studied.

Thereafter, the Descriptive survey method is the second or central type of research which is mostly concerned with describing or defining a particular phenomenon or topic at hand. In other words, it is a process of conducting interviews or giving out surveys to a group of people in order to gather information (Orodho, 2003). As it can utilize these surveys to gather varieties of information such as on how people feel, what they think, what they do or any other social matters. Further aligning with Orodho & Kombo (2002) who had cited that descriptive research is a description of the state of affairs as it exists. Sekaran & Bougie (2011) concurs with Orodho & Kombo (2002) by asserting that descriptive study was undertaken in order to understand and describe the qualities of the important factors in a situation. The decision to use the Descriptive Research approach was based on the following reasons:

1. The development of theory is already available from the Literature review.
2. To minimize errors and save time hence descriptive research enhances validity.

3. High Cost of travel and miscellaneous expenses needed to conduct a research in a pandemic era.
4. Accessibility/proximity of data in one region (using NIM administrative office).

Sekaran and Bougie (2011) also noted that descriptive study has several advantages such as;

- a) It aids in grasping the traits of a group in a specific scenario and helps with organized thinking about different aspects in that scenario.
- b) It also provides suggestions for more investigation and research and assists in making straightforward decisions.

Validating Zikmund, Babin, Carr and Griffin (2010) who had previously cited that descriptive research involves describing the features of objects, individuals, groups, companies or surroundings. In other words, descriptive research aims to create a clear picture of a specific situation by answering questions like who, what, when, where and how. Thus, justifies its acceptability and adoption for the research.

### **Resign Design Justification for the use of Case Study Method**

According to Cohen and Manion (1995), a case study is concerned with close observation of how a particular population group behaves in a particular context. It usually associated with an in-depth probing of the chosen population or phenomenon. The aim of a case study research is to provide information by capturing different variables in order to classify the complexity of a set of conditions that come together to produce a particular phenomenon. Hence, given the nature of this research - in-depth analysis of a contemporary phenomenon (organizational effectiveness), in a chosen professional body environment (the Nigerian Institute of Management) where different stakeholders (and sometimes none members) perspective were sought-after (with the members and staff as a body of learning and implementation to where other factors will form the

main components/tools for the research context) as well as where the underlying research philosophy is in-line with the research reality.

This case study approach provided the focus that was required and facets of case study strategy fitted perfectly with the research purpose.

Lyons (2010) stated the following advantages of case study method;

1. It turns observations into useable data: this observation can converted into verifiable data from observing directly by showing patterns which led to specific results being generated. Hence, others in similar circumstances can replicate the results discovered by case study method.
2. It is relevant to all parties involved: A well chosen case study will be important to everyone participating in the process.
3. It is used in both quantitative and qualitative: it involves both interview and questionnaires. Even diary and journals as well as memory test can be methodologies employed in case study.
4. It can be done remotely: Researchers do not need to be present at specific location as online surveys, telephone calls, email correspondent can easily handled remotely.
5. It is inexpensive: the area of focus for the research using a case study is usually a secluded area where the researcher has easy access to this materials and respondents. Thus, cutting reasonable cost that makes it cost effective or less expensive.
6. It is accessible to readers: by using case study, the research details are easily made known to the population and it saves time.
7. It increases knowledge: using a case study streamlines wide area of coverage and gives room for focus and specialization of the subject matter.

8. It is more sustainable when compared with the other empirical research methods: Using interview, experiment and written survey, the case method can address more issues than the others.

### **Research Design Justification for the use of Sequential Explanatory Mixed Method**

*The research survey* involving the use of closed-end questions known as *Questionnaire* was *used* to elicit responses from participants. This was because there was need to assess the opinions of the participants to properly measure the impact of management information systems on NIM's effectiveness. Survey research design employs the assessment of the opinions of the subjects of study.

Also, *Interviews* was constructed to be in-depth and structured in such a way to elicit specific response of how, what, if and other opened-end questions. The main study of the research was conducted through a Questionnaire survey and later based on the quantitative data gotten from their responses, a structured Interview (qualitative data will be conducted as another data collection tool using a selected or targeted population among the lot). This method of following up the quantitative results with qualitative results is known as sequential explanatory (Edmound and Kennedy, 2017) mixed method approach and this two phase approach eliminates possible errors.

Therefore, it is most useful in explaining the findings from the questionnaires received and knowing how best to combine it with the transcripts from the interviews to be conducted or conducted later. Thus, in-line with the research objectives, it is imperative that the data are properly linked together eventually and this justifies the selected research approach. In view of this, Creswell (2005) identified the advantages of using this Mixed Method as follows;

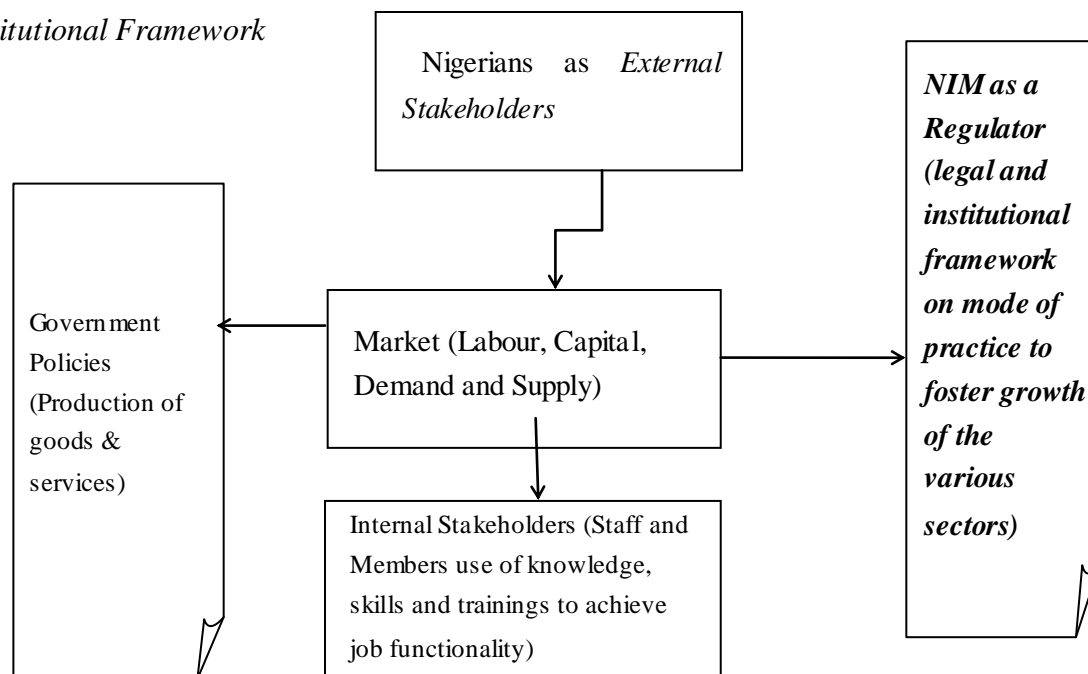
First, it can answer research questions that other methodologies cannot as the questions easily determine the methodology. Second, it provides the stronger inference by presenting a greater diversity of divergent views. Third, limitations of single methods here is reduced. Fourth, it minimizes error by bias. Fifth, it increases validity. Sixth, it increases confidence in research by better understanding and lastly, through the two path way, it can also be used for confirmation processes.

However in mixed-methods, carrying out a study with an entire population is almost impossible especially as they are over one million stakeholders in the Nigerian Institute of Management and this can be time consuming with maximized errors. Thus, a proper population sample representing the institute is used as well as discussed in next section.

### **Population and Sampling of Research Study (Onion layer 6)**

The last layer of research onion deals with the techniques and procedures where the researcher focused on the sample population used from the case study for collecting of data and analysis. This aligns with the previous researchers who noted that a study's population is the whole community of people who are of interest to the researcher and meets the requirements that the researcher is interested in researching or a group of people who share certain similar characteristics (Babbie & Mouton 2012 and Polit & Beck 2012). Also Saunders et al. (2012), cited that a population is the entire group of people or objects from which a sample is drawn.

The study's population is categorized into two which include: the internal stakeholders and external stakeholders. Under the internal stakeholders, the population was further grouped into: Nigeria Institute of Management staff and members. The external stakeholders are further grouped into: Government employees, Professionals from multidisciplinary fields who are not members of Nigerian Institute of Management and are in medical, engineering, media, and law.

**Figure 6***NIM Institutional Framework*

*Source: Management in Nigeria*

The population of the study is categorized into internal and external stakeholders due to the fact that these stakeholders form the market on which Nigerian Institute of Management regulates with reference to management practices. Stakeholders are individuals and organizations who exert indirect and direct influence in an entity (United Nations, 2012) and Nigerians from all walks of life who have indirect and direct interest in the institute but are not members of the institute also serve as stakeholders. The rationale for this according to Head, Trigger & Mulcock (2005) is that all human beings possess culture in the sense that humans are socialized to perceive the physical environment as well as its natural resources in peculiar ways (also see Figure 3 on the participants of NIM effects on the market).

All disciplines are managed by managers who are responsible for driving their respective institutional goals. These managers are also known as management practitioners who foster growth and stability of the economy and which makes the Nigerian Institute of Management a

multidisciplinary professional body that regulates management practices in all fields (Management in Nigeria, 2019). The Nigerian Institute of Management is a management professional body that regulates management practices among multidisciplinary fields.

Thus, the institute is regarded as the regulator of management among practitioners in the private and public sectors. These practitioners who are known as the stakeholders also form the market (Nigeria) on which Nigerian Institute of Management regulates management practices. The practitioners wield influence directly or indirectly on the institute. Practitioners whose actions directly influence the institute affairs are known as the internal stakeholders (Staff and members of the institute), while professionals who exert indirect influence on the institute are known as the external stakeholders (government and the general public). However, the activities of the institute are regulated by the government in the form of fiscal and monetary policies adopted to ensure efficient and effective utilization of economic resources (NIM, 2020). Labor unions that are part of the general public also play a crucial role in regulating the activities of the institute through their policies aimed at improving employee rights and welfare. More so, practitioners from other fields who are not members of the institute also form part of the general public and play their roles towards fulfilling the agenda of the institute of ensuring best management practices to improve private and public sector.

Therefore, the main reason of using internal and external stakeholders is because they form the market on which Nigerian Institute of Management regulates management practices and are critical to ensuring the validity and reliability of research results. Thus, responses from these stakeholders through the use of questionnaire and interview questions will assist the researcher in analyzing data for the purpose of answering the research questions. Based on consultations, it was ascertained that 800 staff work in the institute's head office as shown below:



### **Internal Stakeholders**

**Staff Level :** Top Management Staff with a population of 44 employees

Mid-level Management Staff with a population of 256 employees

Operational (lower level) Staff with a population of 500 employees

**Total Staff : 800**

*Source: Consultation*

Consequently, on reviewing the 2020 annual report of the institute, the populations of its members are shown below:

### **Membership Grade or Level**

Fellow with a population of 1,449

Members with a population of 26,523

Associates with a population of 47,131

Graduates with a population of 110, 970

**Total members : 186,082**

*Source: Nigerian Institute of Management (Chartered), 2020 Annual Reports and Accounts, page 22. Retrieved November 29th, 2021 from: <https://drive.google.com/file/d/14sUezsze0ZfyDApiwjYMMjfi0KdX4YD1/view>*

Furthermore, the external stakeholders of this study are Nigerian labour professionals from all works/class of life who have indirect and direct interest in the institute but are not members of the institute and are also policy makers with the management profession in Nigeria. The populations of the external stakeholders are shown below:

### **External Stakeholders**

Nigerian work force (labour) professionals with a population of 73,272,344

**Total estimated external stakeholders : 73,272,344**

*Source: World Bank Data from International Labour Organizations , 2022*

Therefore, the population of the study is stated as follows;

### **Internal Stakeholders**

Staff with a population of 800 employees

Members with a population of 186,082 employees

**Total number of Internal Stakeholders : 186,882**

**External Stakeholders**

Nigerian Labour professionals with an estimated population of **73,272,344**

Total number of population for the study (internal stakeholders plus external stakeholders) is **73,429,226**.  
*Source:Field Work 2022.*

Since the study cannot access all the elements in the population, it makes economic sense to select a representative sample size for the study. To pick from the target population, sampling methods are used. Sampling is a statistical method of obtaining a sample population in order to obtain data or knowledge about the whole population by analyzing only a portion of it (Kothari & Garg, 2014). Kumar (2011) also pointed out that sampling is a step-by-step method of selecting a small number of respondents from a larger population to be used as a basis for estimating the prevalence of a topic of interest. There are three types of sampling techniques: non-probability sampling, probability sampling, and mixed approach sampling. Using the Headquarters of NIM as a location of the survey, the researcher intend to use Probability sampling technique by attempting to divide the population into subgroups known as Strata (Ben-Shlomo et al, 2013). The subgroups are the Staff (A), the Members (B) and External Stakeholders (C).

This aligns with Cohen et al. (2018) research methods, where the rationale was to cut down on field cost operation and to give each sample in the survey the chance to participate in the study. Hence, the researcher ensured that there were representatives from each subgroup. The subsets from the strata were used to make a random sample. This means that the study employed a stratified random sampling technique in order to ensure that there was more realistic and accurate estimation of the outcome from a reasonable sample size. The sample size was drawn at

random based on the researcher's judgment in order to ensure that the sample is adequately representative of the population to ultimately test the research questions.

The sample size representing all subgroups is stated as follows;

### **Internal Stakeholders (A)**

#### **1. Staff**

Top Management Staff with a population sample size of 18 employees

Mid-level Management Staff with a population sample size of 75 employees

Operational (low level) Staff with a population sample size of 150 employees

**Total sample number of staff category for the study is 241**

#### **2. Member**

Fellows with a sample population size of 135

Members with a sample population size of 108

Associates with a sample population size of 108

Graduates with a sample population size of 108

**Total sample number of Members category for the study is 459**

### **External Stakeholders (B)**

1. Government officials with a sample population size of 60 professionals
2. Media practitioners with a sample population size of 60 professionals
3. Medical practitioners with a sample population size of 60 professionals
4. Legal practitioners with a sample population size of 60 professionals
5. Engineering managers with a sample population size of 60 professionals

**Total sample number of Professionals labour force category for the study is 300**

***Therefore the overall sample size representing all the subgroups is 1000 in number***

*Source: Field Work 2022.*

The sample sizes based on the subgroup are Staff (comprising the top management, mid management and operational team), Members (comprising Graduate, Associate, Member and Fellow) and External Stakeholders (labour professionals at the head office comprising the government officials and practitioners from other fields who are not members of the institute).

The sample size is sub grouped in the above order to ensure ease of data collection and improve the validity and reliability of research results based on responses from the stakeholders (Zohrabi, 2013). This is discussed further in the next section.

### **Materials/Instrumentation of Research Tools**

Due to sensitive nature of some data and the mixed sources of data using NIM administrative office in Lagos as a case study approach, the study involved the use of both primary and secondary sources of data. The researcher used government's public source data such as online articles, non-electronic academic journals, publications, technological articles, commercial sources, educational institutions sources such as unicaf library and lecturer's note as secondary sources of data collection. While the primary data collection, was considered as the most authoritative and authentic data collection method. Case study method facilitated the introduction of closed-end quantitative research questionnaires due to the concentration of data from a particular population (Boudah, 2011) in a particular context. Hence, the researcher sort the use of *questionnaires or online surveys, oral interviews (OI) and focus group discussions (FGD)* as the direct or primary source of data collection.

Data for the study were collected using both the questionnaire instrument and an interview schedule both of which were intended to be administered both physically and electronically (online). For the questionnaire instrument, it consisted of both closed-ended and open-ended questions. The questionnaire was constructed with five (5) sections that cut across all group categories earlier in the sampling. Five point likert scales will be used to design questionnaire, while open ended questions will be used for the interview. The scale include: Strongly Agree 5, Agree 4, Neutral 3, Disagree 2 & Strongly Disagree 1. This scale is also to ensure its reliability & validity. According to Saunders et al (2009), the importance of testing the

validity and reliability of respondents to determine their ability to answer the questions raised cannot be overemphasized.

This was substantiated when developing the Questionnaire, as the Researcher's intention was to determine first, what category each respondent belongs to that is; age, gender, level of education; and the variables. The intention was to determine the kind of responses expected and to also enable the Researcher to also determine if the respondent's responses were valid with regards to the research. In doing so, a question to understand the level of knowledge of NIM's services will be sorted for some respondents. One can agree that for a person to talk about fishing, he should have fished before. A similar instance can be likened with this saying when referring to this research paper, where only people who are staff, members and their stakeholders, to an extent, provide valid feedback on management information systems issues. In identifying people to contact for interviews, the researcher intended to interview one person from each strata group or sector in the industry, such as the internal stakeholders which are the members and staff. Then proceed with the external stakeholders who are Government Agencies and other practitioners.

In addition, the Researcher's plan for the Qualitative study was to interview people with over 10 years' experience of working at the head office in Lagos, and who are respective professional managers in their various area of specialization. This strategy, like reasons mentioned in the study above, was to ensure that whoever was interviewed can provide substantial information and knowledge on the happenings of NIM during the pre-chartered era and post-chartered era. The reason behind carrying out a stratified randomization sampling method for the interviews was based on the peculiar nature of the study where adequate

comparison of results was needed when the population of the study is divided into meaningful strata's.

Accordingly, the sections were structured to obtain data in the order of demographics, level of knowledge, staff, members and none-members. The oral interview consists of 300 participants and the focus group discussions made up of 36 participants of 12 per session utilized the same interview schedule. The schedule below illustrates how the validity aspect of the research (which involves appropriately answered questions that are aligned to the research aims, objectives and questions) was ensured and how the error threats to reliability and validity was minimized to elicit confidence through in-depth responses from participants.

**Table 1***Steps in Ensuring Validity of the Research*

Research Instruments/Materials	Ensured the validity of the research by Randomization of Participants in groups (Using Strata's).	Ensured the validity of the research by reducing Bias (using qualitative & quantitative methods).	Ensured the validity of the research by sample size (using a portion of the population).	Ensured validity of the research by having a baseline for comparison (Research Tools Used: questionnaires & interviews).
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<b>Questionnaires</b>	The potential participants was identified from a stratified random sampling sub grouped population based on their age, gender, the participants view on the variables, members of the organization and participants with more depth feedbacks as stakeholders.	Questionnaires was used in order to statistically analyze data collected to answer the research questions boosted by the level of knowledge of the questions asked due to the experience of the representatives used at the head-office. Hence, test and retest administration approach is adopted to ensure that the same group of respondent who react to the questions do so without bias.	The researcher made use of questionnaires in order to reach the targeted or represented sample size rather than using the entire population due to the readiness or access to data collection procedures.	The impact of management information Systems in on organizational effectiveness is comparatively measured through questionnaires using following variables: 1.Levels of business operations. 2.Leadership style&change management. 3.Structure and reengineering. 4.Boost in Information technology. 5.Advanced technological infrastructure.
<b>Focus Group Discussion</b>	Virtual interview via “Zoom” was adopted here because it involves a close group of	To obtain in-depth information from internal stakeholders that will answer the research questions and	The researcher selected 3.6% of the sample size from NIM top management and	Online group discussion interviews using Zoom’s Virtual interview will be used due to the poor



	<p>people and this is also in-line with the strata random sampling method chosen.</p> <p>The strata groups were divided into;</p> <p>NIM-Staff (Management –Top &amp; middle): 12</p> <p>NIM- Members:</p> <p style="padding-left: 40px;">Fellow: 12</p> <p style="padding-left: 40px;">Member: 12</p> <p style="padding-left: 40px;">Total: 36</p>	validate research results.	<p>senior members (Fellow and Member) in order to obtain relevant information from the participants who make critical decisions that shape NIM operations. In addition, it was easier for the researcher to interview 3.6% of the sample size due to over head expenses and busy schedules of internal stakeholders to interview the entire sample.</p>	<p>feedback gotten using online email blast.</p> <p>Although the virtual interviews are prone to network issues but to limit this issues, the interviews was done in areas with stable network coverage with 3 sessions (12 participants arranged after scheduling an appointment with participants).</p>

<b>Oral Interview</b>	<p>Virtual interview was also considered here because it involves a close group of people and this is also in-line with the strata random sampling method chosen.</p> <p>The strata groups were further divided into;</p> <p>External Stakeholders:</p> <p>Legal Practitioners: 60</p> <p>Engineers: 60</p> <p>Government Staff: 60</p> <p>Medical Practitioners: 60</p> <p>Media Practitioners: 60</p> <p>Total: 300</p>	To also obtain in-depth information from external stakeholders that will answer the research questions and validate research results.	The researcher selected 3% of the sample in order to obtain relevant information from the external stakeholders that will answer the research questions. These stakeholders exert considerable interest on NIM operations indirectly. 3% of the sample was used due to limited overhead expenses and busy schedules of external stakeholders to interview the entire sample.	<p>Physical face to face (One on one)</p> <p>Interview guides was drafted to be conducted by visiting offices of participants after scheduling an appointment with them.</p> <p>This was to ensure that the scheduled time for the interviews was met and as brief as possible while obtaining appropriate responses.</p>
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\*Source: Field Work

However after the measures taken to ensure validity was done from the quantitative data, there was need to also ensure a retest of the data collected (especially when mixing them with the qualitative data) as this would avoid reaching a saturation point, thus thereby enabling the reliability of the research. There was also need to ensure reliability of understanding by avoiding misinterpretation and misconception of the terms or words used in the research. This is further explained in the definition of operational variables below.

## Operational Definition of Variables

For this study, the organizational effectiveness of the Nigerian Institute of Management serves as the dependent variable while the components of research objectives or research design all serve as the independence variable and they interconnect together to function. This is in-line with Petchko (2018), who cited that a statistical procedure which assesses the relationship between a dependent variable and several predictors or independent variables is known multiple linear regression analysis. Thus, the researcher favors the use of multiple linear regression model to run data analysis because multiple regression model is a reliable method of identifying which variables have impact on a topic of interest. In order to understand regression model fully, it is essential to comprehend the following terms:

Dependent Variable is a variable that is influenced by changes in the independent variable while the Independent Variables are standalone variables that directly influence the dependent variable.

Mathematically this is shown as follows:  $y = a + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_nx_n + e$   
where:

$y$  = the estimated value for the dependent variable

$b_1, b_2, b_3,$  = partial regression coefficients,

$x, x_1, x_2, x_3,$  = independent variables

$a$  = the regression constant or intercept derived from the analysis

$e$  = error term

For this study, multiple linear regression model deployment was highly favored to analyze how organizational effectiveness in human resource development (which is the dependent variable) is improved by Management information system (which is the

independent variable) with reference to levels of business operations, leadership style, structure and reengineering effect of human resources/change management, boost in information technology and advanced technological infrastructures. In addition, other reason for the use of multiple regression model was that the model was a typical supervised learning task as it can have two or more independent variables (predictors). It is used in cases where the value to be predicted is continuous as in the case of this study due to changing technology that necessitate human resource development. The mathematical equations of regression are also fairly easy to understand and interpret. Hence, the use of regression model for data analysis was practical for the study.

Bearing in mind, that similar research on the analysis of data using regression model was used previously by Aduda (2011), in a study which investigated the relationship between executive compensation and firm performance in the Kenyan banking sector. Also Ngugi (2001) used a regression analysis in a study on the empirical analysis of interest rates spread in Kenya while Khawaja and Mulesh (2007) used regression analysis to identify the determinants of interest rates spread in Pakistan. However, before using the regression analysis in a research, it is important to properly identify the research questions and types of variable to study. Without transparency and specific operational definitions, there are high chances of measuring irrelevant concepts or application and this is where hypothesis testing and operationalization comes in.

According to Bhandari (2022), operationalization means turning abstract concepts into measurable observations to reduce bias and increase the reliability of the study. He further noted that through operationalization, data that is not directly observable on processes and phenomena can be collected systematically. This is further explained by the researcher in table 2 below.

## Operationalization of Variables

**Table 2**

*Showing the operationalization of variables as constructed by the researcher (For clarity, the indicators listed were utilised to show how the variables vary on 1-5).*

Independent Variable	Dependent Variables	Parameters for measurement of variables, targets and possible types of analysis	Strongly Agree-5/Agree-4 (Indicators on how variables vary)	Strongly Disagree-1/Disagree-2 (Indicators on how variables vary)	Neutral-3 (Indicators on how variables vary)
<b>Management Information System</b> The impact of management information system on organizational effectiveness was addressed through the research objectives (RO) on the research questions (RQ) and measured using the following independent variables (IV) through mixed-method approach (Questionnaires, interviews&discussion):  <b>➤ Levels of business operations(IV1)</b>	<b>Organizational Effectiveness</b> with reference to Nigerian Institute of Management (NIM). All the independent Variables (IV) interconnects with the dependent variable (DV) as this was a reference (case study) for the	<b>Levels of Business Operation</b> using interval&nominal scale. Target: RO1, RQ1 and IV1. Analysis: Descriptive statistics on frequency and percentages, among others. <b>Reengineering process and Structure</b> using interval&nominal	<b>RO1,RQ1,IV1</b> Improvement in NIM Operations.  <b>RO2,RQ2,IV2</b> Improvement in management structures of staff and	<b>RO1,RQ1,IV1</b> Redundancy in NIM Operations.  <b>RO2,RQ2,IV2</b> Poor and inefficiency in the management of staff and	<b>RO1,RQ1,IV1</b> No improvement or decline in NIM Operations.  <b>RO2,RQ2,IV2</b> No improvement in management

<p>➤ <b>Reengineering process and Structure (IV2).</b></p> <p>➤ <b>Leadership style and Interactive Effect on Human Resources Management (IV3)</b></p> <p>➤ <b>Emergence/Boost in Information technology (IV4).</b></p> <p>➤ <b>Advanced technological infrastructure (IV5).</b></p>	<p>mixed method study</p>	<p>scale. Target: RO2, RQ2 and IV2.</p> <p>Analysis: Descriptive statistics on frequency and percentages distribution, among others.</p> <p><b>Leader Style and Interactive Effect on Human Resources Management</b> using interval&amp;nominal scale.</p> <p>Target: RO3, RQ3 and IV3.</p> <p>Analysis: Descriptive statistics on frequency and percentages distribution, among others.</p>	<p>members of NIM.</p> <p><b>RO3,RQ3,IV3</b></p> <p>Improvement in leadership styles and policies of NIM for better management of NIM staff and services. <b>Also,</b> Adoption of Human Resource Management solutions to improve management services.</p>	<p>members of NIM.</p> <p><b>RO3,RQ3,IV3</b></p> <p>Formulation and implementation of poor human resource management policies and weak management structures of NIM.</p>	<p>styles of NIM.</p> <p><b>RO3,RQ3,IV3</b></p> <p>No improvement in NIM management structures.</p>
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		<p><b>Emergence/Boost in Information Technology</b> using interval&amp;nominal scale.</p> <p>Target: RO4, RQ4 and IV4.</p> <p>Analysis: Descriptive statistics on frequency and percentages, among others.</p>	<p><b>RO4,RQ4,IV4</b></p> <p>Improvement of NIM operations effectively and efficiently through the adoption and implementation of ERP (Enterprise Resource Planning) solutions.</p>	<p><b>RO4,RQ4,IV4</b></p> <p>Decline in human resource development as a result of unwillingness to adopt Information technology solutions.</p>	<p><b>RO4,RQ4,IV4</b></p> <p>No improvement in NIM processes and mode of operations.</p>
		<p><b>Advanced Technological Infrastructure.</b></p> <p>Target: RO5, RQ5 and IV5.</p> <p>Analysis: Descriptive statistics on frequency and percentages, among others.</p>	<p><b>RO5,RQ5,IV5</b></p> <p>Provision of various Information technology infrastructural facilities such as AI, Blockchain, Internet of Things, Machine learning, Virtual Reality, and Digital equipment for remote working and virtual learning</p>	<p><b>RO5,RQ5,IV5</b></p> <p>Decline in human resource development and operations of NIM as a result of failure to adopt the use of ERP solutions and advanced technological solutions to improve human resource development.</p>	<p><b>RO5,RQ5,IV5</b></p> <p>NIM maintains current level of management of human resource.</p>

Source: Field work

## **Operational Definitions of Terms**

In every research, there is need to define operational terms used by the study to ensure better clarity of how the variables of the study influences one another and to understand the meaning of some technical terms as well as the concepts used in the research study. The following operational terms used in this study are discussed below:

**Advanced Technological Infrastructure:** The researcher used this technical term to describe the continuous deployment of innovations through technological investments and maintenance. Advanced technological infrastructure are foundational technology services, software, equipment, facilities and structures upon which the capabilities of nations, cities and organizations are built (John, 2018). In the study's context, advanced technological infrastructure relates to a sophisticated structure or system used by NIM to optimize their management information system operations. This advancement in technology boost the NIM's effectiveness as result of the impact of MIS.

**Chartered Company:** The researcher used this in alignment of the legal provision of the Nigerian law empowering the Institute to regulate and promote management practices in Nigeria. The word chartered indicates a company which is established by grant of a Royal Charter by the crown. Royal Charters are currently applied for to establish a formal company structure for governing bodies of non-trading organizations such as professional association. A document issued by a government that gives rights to a person or group (Webster 2021).

**Government:** The researcher used this to refer to the Federal Government of Nigeria and its regulatory authorities. Bearing in mind that Government agencies located at the NIM headoffice chapter also played a key role as some of the study's population via external stakeholders According to Hugh (2021), government is the political system by which a country



or community is administered and regulated. Thus, government is machinery established to manage the affairs of the state.

**Information Technology:** Here the researcher emphasized on the technological changes observed from the institute's different era and its role towards achieving organizational effectiveness. Dale (2019) opined that Information technology is building communications networks for a company, safeguarding data and information, creating and administering databases, helping employees troubleshoot problems with their computers or mobile devices, or doing a range of other work to ensure the efficiency and security of business information systems.

**Leadership:** The researcher here sought the importance and competence of team players who can successfully handle the affairs of the institute especially through different methods. These methods or styles in leadership also served as one of the independent variable of the study. Leadership involves convincing others to actively pursue specific goals. It is the human element that unites a team and drives them towards accomplishing their objectives (Davis 2021).

**Levels of business operations:** The researcher used this business term to refer to the pre-chartered era means of doing business (which was before the internet age) as compared with the post-chartered era (which was after the internet age). Business operations refer to activities that businesses engage in on a daily basis to increase the value of the enterprise and earn a profit (CFI, 2021). The activities can be optimized to generate sufficient revenues to cover expenses and earn a profit for the owners of the business. Employees help accomplish the business' goals by performing certain functions such as marketing, accounting, manufacturing among others.

Business operations evolve as the business grows, and the management should plan to accommodate the changes to prevent glitches occurring in the system. If the business does not

evolve with the changes in business operations, glitches such as errors and omissions will emerge. The value chain relates to the levels of business operations as It deals with the stages involved in the production and distribution of goods and services.

**Manager:** Here the researcher refers to the individual driver of management processes. This may be an internal stakeholder or external but are mostly internal. Yusuf (2021), defined manager as an individual who is in charge of a specific function, department or operation in an organization. He or she is responsible for the performance of the section he or she is in charge of.

**Management:** The researcher used this technical term to describe the act of getting people together to accomplish desired goals using available resources effectively. This corresponds with not only the purpose of the study but also aligns with Yusuf (2020) definition of Management as a process of planning, decision making, arranging, guiding, inspiring as well as handling the human resources, physical, and information resources of a company or institute to reach its goals efficiently and effectively.

**Management Information System (MIS):** The researcher mostly used MIS to an information system that makes timely and effective decisions for planning, directing and controlling the activities for which they are responsible for and also helps the organization achieve its goals and objectives. This in line the definition that MIS is a computing system that aids internal stakeholders of an organization to make informed economic decisions that will improve the performance of the entity (Yusuf 2020). The main purpose of the MIS is to give managers feedback about their own performance; top management can monitor the company as a whole. Information displayed by the MIS typically shows actual data over against planned results and results from a year before; thus it measures progress against goals.

**Structure and re-engineering:** The re-engineering processes in this study refers to the institutional strategic processes driven by managers for the growth and stability of NIM. These processes are the before and after the charter era of the institute, the leadership styles and change management administration, the gap analysis, the manpower planning, the boost in technology and technological investments for new digital workplace (Which are in-line with the Research objectives and design).

**Interactive Effect of Human resources/change management:** The researcher used this technical term to describe the changes which resulted from the different era of the institute and the role of digital transformation. Change management refers to the methods and manners (pre-chartered era to post chartered era) in the NIM describes and implements new processes (ASQ, 2022). This supports Peter Drucker (2003) who stated that management is the process of putting human resources together in the right proportion to achieve a profitable goal. Hence, management is to make human resources productive (Armstrong and Taylor, 2014). Human resources imply that every factor of production belongs to man and putting them into productive use is the work of management (Banjoko, 2010).

**Technological Acceptance Model (TAM):** The researcher used this continuous deployment of technology to justify the acceptance or rejection of new innovation. This served as a key theoretical literature of the study for the TAM was initially proposed by Davis (1989) but is widely still validated in technological advancement. It comprises two beliefs, the perceived utilities and the perceived ease of application, which determine attitudes to adopt new technologies. The attitude toward adoption will decide about the adopter's positive or negative behavior in the future concerning new technology.

**Nigerian Institute of Management (NIM):** It is a Nigerian based multidisciplinary management professional body created and empowered by Nigerian law to regulate management practices (NIM 2020). The researcher used this institute as a case study for the research.

**Organizational Effectiveness (OE):** This served as the dependent variable for the study and the researcher used this term to describe the optimum impact of MIS to actualized organizational goals. This aligns with Kingsley (2019) who cited that organizational effectiveness is the optimization of an entity's operations as a result of technological approach adopted by the entity's management.

**Practitioner:** In this study, the researcher made use of professional interest groups which represented the external stakeholders as key participant to the research. This further aligns with Kingsley (2019) who defined a practitioner as a specialist or professional who is specialized in a field and also drives the economy through his or her professional dealings and activities.

**Stakeholders:** Here the researcher refers to the internal (members and staff) and the external (government agencies, professional interest groups or practitioners) stakeholders. According to Yusuf (2020), stakeholders are individuals and entities who exert control on and influence the activities of an entity or group of persons.

**Respondents and Participant:** These are those individuals who complete a survey , questionnaire or interview for the researcher or who provide data to be analyzed for the research study while participants is one who joins willingly to be part of the study as a subject (Allen, 2017).

However the respondents must not be pressured in any ways to select specific choices or so for this will be regarded as an inappropriate procedure and highly unethical in research. This ethical issues will be discussed in the next sector.

### **Study Procedures and Ethical Assurances**

Prior to data collection, this study received due approval from the Unicaf University Research Ethics Committee Decision Board (UREC Board) on the *17<sup>th</sup> of February, 2022* (see Appendix C behind). The researcher applied an open policy of honesty with the participants where the rights of the participants was to be respected while also bearing in mind that the research study participants were human beings. Hence in compliance, the ethical issue of prevent from harm was fully operational as a safety measure for any unforeseen risk. This aligns with Saunders et al (2009) who described Research Ethics as the moral and responsible behavior of the researcher towards the rights of the research participants and the organization, when trying to gain access as well as during data collection, storage, analysis of the data and development of the research conclusions.

While noting also that the research instruments involve the use of secondary and primary data. Therefore for the secondary data, the researcher made use of unicaf library and also used scholars articles during the literature review. These papers or articles are accessible online from the website of the body/ organization responsible for collating the data has been identified. From the literature review study, the write ups and website of these organizations that provided credible information with well known sources can be used for research purposes. However, ethical issues occur when making use of this data without proper recognition (or approval) given to the institute (see Appendix B behind) responsible for gathering the data. The primary data was to be collated using the Self-administered Questionnaire and a Semi-structured Interview data collection technique. The researcher had identified the tendency of the research participant's data and information rights to be infringed upon if used without their consent or coerced without

informing them appropriately of the risks behind the use of the information especially if the participant is a staff of the institute affected by the issues related to the research questions.

It is worthy to note however that prior to collating the data, the researcher ensured that the Research Participants are duly informed of their rights to confidentiality and data protection, by issuing to them a Participant information sheet and research participant consent form to be signed once they approve of the study after going through the Participant information sheet while electronic data was stored on a password protected computer accessed only by the Researcher. Hard paper data was also stored in a locked cabinet, within locked office, accessed only by Researcher. Data was scheduled to be analyzed afterwards in order to produce results or conclusions. To avoid possible conflicts of interest that may exist in the institute, which the research participant may be working in, the opinions expressed by the research participant was presented in high confidence without exposing any particular case, department or name where they work through coding.

Response or feedback from the Research Participant was viewed as the opinion of the Participant only and did not constitute the ideas or belief of the institute or firm which they work. In summary, *the following key Ethical Assurances are further highlighted;*

1. **Informed Consent:** It gives the backing/authorization to use the research, use some materials, parental consent, photograph release, and collects data among others as it was the first procedure done to create awareness of the procedures for the research by ensuring confidentiality and data protection. The researcher has identified the tendency of the research participant's data and information rights to be infringed upon if used without their consent or coerced without informing them appropriately of the risks behind the use of the information (see Appendix D).

2. **Embrace Anonymity:** most respondents are security conscious which is why they will hesitate to fill any form. People are freer when they are anonymous. Thematic and likert scale analysis was used to code their responses while their names were covered to ensure anonymity and confidentiality.

3. **Be Transparent:** respondents are freer to talk when the process is straightforward with no hidden agenda. Use of google form and zoom video conferencing is intended to boost confidence in the transparency part or process.

4. **Don't impose or be authoritative:** a respondent must have a right to withdraw and it shouldn't impose or ask uncomfortable questions (Tsuokatos, 2020).

5. **Make it brief and flexible:** Electronic data was stored on a pass-worded computer and the questions were clear, without ambiguity for clarity. Also survey used was user-friendly to pave way for its credibility and uniqueness.

6. **Make the distribution and collecting channel easily accessible:** the pathway for receiving and sending these questions must be free and reachable as survey used and their responses were later converted to an accessible link online.

7. **Minimize bias:** The researcher used two methods (quantitative and qualitative) in order to get the opinion of a second opinion and also by carrying out this mixed method, triangulation was achieved to ensure the trustworthiness of data. The researcher also used a test-retest method for reliability of the instrument, thus ensuring errors and bias were effectively minimized. Bearing in mind that the research instruments were also face validated by my supervisor and UREC board before approval. Therefore its approval subsequently ensured the reliability and validity of the data and all this drastically reduces bias.

## **Data Collection and Analysis**

### **Data Collection Method**

The rationale for use of qualitative and quantitative data collection method was to increase the chance that the data collected for the analysis is accurate, impartial, and applicable to the questions posed. Data collection according to Kabir (2016), is the process of gathering and evaluating the information on variables of interest in a given organized manner. The gathering and evaluation is to address precise research questions and analyze results. Therefore, in order to achieve the objective and purpose of the research using the Philosophical and Research approach of the Research, the Researcher sorts the use of a Case Study and Descriptive Methodology. The Researcher also employed the use the Sequential Explanatory Mixed Method research approach in data collection, whereby also applying the data gotten from questionnaires with that of semi-structured interviews as data collection tools.

This mixed method is in-line with the researcher purpose of first getting the quantitative data from the numerical means and combining it with the qualitative data gotten from the interviews. Notably, the mixed method research is used for gaining greater understanding of a research problem, after exploring the research questions by the combination of quantitative and qualitative research data (Spicer, 2004). While Cameron (2009), cited that it involves collecting, analyzing and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon.



**Table 3**

*Merits and demerits of using the Mixed Method in data collection*

S/N	Merits	Demerits
1	The use of the Mixed Method approach allows the Researcher to apply the Pragmatic philosophical view.	The use of this approach does not allow the Researcher to combine both the Quantitative and Qualitative approach during the data analysis which can be achieved using the Mixed Model approach.
2	Unlike the Multi-Method, the Mixed method allows the mixture of the Quantitative and Qualitative approach of data collection, at the same time or one after the other.	If not conducted properly, the use of the Mixed Method approach may result in insufficient time to collate and analyze the data.
3	Mixed Method approach allows for the combination of the descriptive and explanatory approach when analyzing the data.	Mixed Method approach requires knowledge and skill in applying research ethical techniques in gaining access to research participants, as well as gathering and analyzing the multiple data.

*Source: Saunders et. al., (2009)*

### **Data Collection Instruments/Tools**

Primary information was gathered by use of a questionnaire coupled with informal interviews and discussion that was guided by the questionnaire. A questionnaire is a research method that consists of a written set of questions to collect data from respondents (Wyse, 2011). They can be used to ask questions that have closed-end answers. Sometimes the questionnaires are structured in a way they combine together to form a survey which has other dimensions (like sometimes open-end) apart from closed end.

A survey is a research technique that involves using questionnaires to collect data from a predefined group of respondents and analyzing those responses to gain insights into the research topic (kultar, 2007). Survey served as a key to this study for the purpose of analyzing the data. Numerical values can be assigned to the data in order to speed up the analysis especially if it is from a large population. A likert scale survey questionnaire was used. Notably, a questionnaire is a pre-formulated written set of questions to which the respondents record the answers usually within rather closely delineated alternatives while, likert scale is an interval scale that specifically uses five anchors of strongly disagrees, disagree, neutral, agree and strongly agree.

Also, Oral Interviews was in-depth and structured in order to elicit specific response of how, what, if and other opened-end questions (Davis, 2021) using a thematic scale to analyse the qualitative data (both interview and focus group discussions) while the focus group target discussions or interactive sessions among a sector in order to acquire in-depth knowledge on the topic presented by the researcher (Krueger, 2002).

The main study of the research was conducted through a Questionnaire survey, Structured Interview and Focus Groups discussion as a data collection tool using a selected or targeted population among the lot. However, this has its pros and cons as explained below;

**Table 4**

*Pros and Cons of using collection methods like questionnaires, interviews and focus groups*

<b>Data Collection Method</b>	<b>Benefits</b>	<b>Obstacles</b>
Questionnaires	<ul style="list-style-type: none"> <li>• Questionnaires are mostly used for a large number of people to collect data.</li> <li>• Questionnaires allows the researcher to collect data from a wider range of people through the use of the internet&amp;emails without having to travel or meet these people to collect the data.</li> <li>• Most suitable for collecting data based on the Positivist and objective research philosophy.</li> </ul>	<ul style="list-style-type: none"> <li>• The researcher could result in collecting and Analysing data from a very large number of people e.g. 100 and above which could be time consuming and tedious.</li> <li>• The certainty that the respondents completed the questionnaire by themselves is sometimes unlikely or which may result in the respondents' view not being their own views.</li> <li>• Not normally used for researchers to collate and analyse data using the interpretivist &amp; subjective view.</li> </ul>
Interviews	<ul style="list-style-type: none"> <li>• Used mostly in collecting data based on the interpretivist and subjective philosophical views of</li> </ul>	<ul style="list-style-type: none"> <li>• Not used in collating data from a large number of people usually a maximum of 5 people</li> </ul>

	<p>the social actors.</p> <ul style="list-style-type: none"> <li>• The researcher is certain that responses received views from the participant and not views of others.</li> </ul>	<p>and can be very tedious when analysing data from people more than this number.</p> <ul style="list-style-type: none"> <li>• Not used in collecting data from a positivist and objective views of the participants</li> </ul>
Focus Group	<ul style="list-style-type: none"> <li>• Allows for interviews to be conducted with more than one person at a time.</li> <li>• Used mostly in collecting data based on the interpretivist and subjective philosophical views of the social actors.</li> </ul> <p><i>Source: Saunders et. al., (2009)</i></p>	<ul style="list-style-type: none"> <li>• It is difficult to arrange for an interview with one participant because of their busy schedule let alone trying to organise a focus group with more than one participant at the same time in the same location.</li> <li>• Arranging focus group interview sessions takes longer time than if the researcher conducts a single interview.</li> <li>• Conducting focus group interviews requires special skill and knowledge in managing group of people otherwise the sessions may end up becoming rowdy and agitated.</li> </ul>

Surveys and questionnaires need to be carefully designed, for a poorly designed questionnaire will hinder any form of progress unlike an interview where a researcher can react to the direction of response gotten. The world is becoming more digital and a paper-based questionnaire may not be the way to go at this point as it most likely to be bulky due to the volume of questions anticipated. Hence the researcher apart from face to face distribution, the researcher also employ the use of web access to distribute most of the questionnaires and conduct online zoom interviews as well as engage in some focus group discussions.

Questionnaires are better used when the data is going to be aggregated to benefit the respondent. As they are usually fast to formulate, saves time and cost and have a standard and a uniform structure which makes it useful to collect demographic information however the survey is slow formulate and more costly but do not have uniform structure because they contain a group of questionnaires. While, interview are designed with more flexibility as responses does not necessary follow a closed case and they are stored as transcripts.

Surveys are often less expensive than interviews and telephone calls however they will not be valuable if they are not handled correctly. Also some surveys can be conducted as online interviews while some are conducted using a form which the questions can change according to how someone responds. Surveys are a better option for research purposes (Field, 2013). Citing the likert scale survey for example, it is useful for assessing translation, mood, quality and conducts. Interestingly, transforming qualitative response into quantitative values is a prominent feature of the scales that likert scale possess which is most useful in a mixed-method research like this, according to (Mugenda & Mugenda, 2003; Zikmund et. al., 2010 and Upagade & Shende, 2012). Hence this justifies the use of these tools/instruments for data collections because they study and apply multiple trends as well as also make future predictions.

## **Data Collection Procedures**

Data for the study was collected using both the questionnaire instrument and an interview schedule which also consist of group discussions and they were administered physically and virtually (online). For the questionnaire instrument, it consists of both closed-ended and open-ended questions. The questionnaire was constructed with two (2) sections that consist of the demographics; level of knowledge, leadership or working experience, grade of membership as Section A and most importantly the data was designed in likert scale of five (5) options as Section B where their response aligns with the research questions being asked. Notably the questionnaire was administered by stratified random selected respondents at the Institute's Head Office in Lagos. Repeated calls and face to face interview guides was initially used in order to ensure full compliance with the questionnaires and interview question guidelines, however the researcher opted for online interview guides in order to gather a reasonable percentage of participants at once (see Reliability and validity Justifications in Chapter four).

Each groups of respondent consisting of internal stakeholders and external stakeholders was further divided in specific strata groups in order to ensure a proper representation of the population sample. These subgroups created encouraged precision and reduced projected overhead expenses. The oral interview made up of 300 participants and the focus group discussions made up of 36 participants of 12 per session utilized the different guides. Where the oral interviews guides contained seven (7) open-ended questions of section B and the focus group guides contained three (3) open-end discussions of section C of the survey instrument (see Appendix E – Research Tools) which aligned with the research questions and objectives in order to elicit in-depth responses and rich data. Also, the data collected through the questionnaire was

organized in a way that ensures that all errors detected were corrected before the raw data will be coded by values (Wyse, 2011).

A code is a label attached to a section of a text in the transcript identified by the Researcher as important (King, 2012). According to King, codes/ labels could be descriptive, analytical or interpretative. The code values was presented in tabular forms for further analysis and also from the interview transcript while developing the initial template, the Researcher produces a list of codes or labels identified from the text of the transcript data and relates them to the 'research questions and objectives (where applicable). Hence, this justifies the Researcher's use of the Sequential Explanatory Mixed Method research approach in data collection as a triangulation method which uses the questionnaire and semi-structured interviews as data collection tools by collecting either the quantitative or the qualitative at the initial stage followed by a second stage of collection of the other data type then analyzed the data collated.

The analysis presentation will be discussed briefly in the next section as a prerequisite for clarity and better understanding before going into the full details of the analysis procedures to be encountered in chapter four. For the researcher feels it is proper to give an insight of the presentation procedures for the data analysis as the following section presents the processes for the analysis of the data gotten from the data collated while the discussion of the analysis and presentation will be fully captured and elaborated in the next chapter (4).

### **Processing of Data Analysis Procedures**

Data processing includes taking the responses from a survey and converting them into a format that can be analyzed to create statistics. This includes coding, editing, entering data and overseeing the entire data processing procedure, according to Hyndman (2008). For the primary goal of examining the different steps in data processing was to create a data file with as few

errors (or none) as possible. This is in line with Saunders et. al., (2009) who had earlier stated that data analysis involves taking collected data and turning it into useful information.

It was important to simplify the raw data because most people may not understand it. The conceptual framework was created by analyzing the variables to see how the independent variables are related to the dependent variable. Bearing in mind that variables are characteristics or traits of the situations that are observed or documented, Cooper and Schindler (2006) further looks at variable as symbols that represent events, actions, characteristics, traits, or attributes that can be measured and given a specific categorical value. Therefore, this is in line with the procedures adopted for the research survey. As earlier stated, after administering the surveys and data has been obtained, it was done in readiness for analysis by editing, managing blank responses, coding, categorizing and entering into SPSS (Statistical Package for Social Sciences) computer software for analysis. These procedures are further explained below;

The first step was to develop a coding guide. Code guide is the procedure of transferring all questions from a questionnaire to a code book/tutorial form. Thereafter the data obtained through questionnaires and secondary sources (which are the questions and answers are then transferred into the SPSS program to suitable analysis), then prepared in readiness for analysis. With respect to the quantitative data, the descriptive analysis like the correlation table, percentages, and charts will be included as the Researcher plans to use the Microsoft Excel or Google spreadsheet software to prepare the data received and subsequently use the software tools contained in the google sheet program (for example the “pivot table function” allows the depict of a lot of information).

This is in line with Soiferman (2010) who stated that for the quantitative data analysis, the confirmation of specific conclusion is drawn logically from premises. Therefore, the data



obtained through the questionnaire will be evaluated using the baseline frequency and percentage tables, which are considered to be more useful and accessible to any reader for quick understanding. Frequency and percentages are also expected to be used to determine how responsive respondents are.

Also hypothesis tests were carried out to decide the significance of the independent variables on the dependent variable. Hence due to the different variables, the regression analysis procedures was sorted and carried out in order to evaluate the relationship between two or more variables. This in line with Ambika (2019) who supported that, regression analysis helps an organization to understand what their data points represent and use them accordingly with the help of business analytical techniques in order to do better decision making. As previously mentioned in the operational definition of variables, regression model is sorted out in order to carefully carry out the descriptive analytical nature of the research.

Regression model is a simple algorithm that can be implemented very easily to give satisfactory results however simple regression is usually not enough in a real life scenario, as targets (dependent variables) are rarely impacted only by a single predictor (Harbula, 2009).

Therefore for a more detailed analysis, the simple and single linear model will transform into a multiple one that has two or more independent variables (predictors) and this is a reliable method of identifying which variables have impact (Dobromir, 2020).

### **Justification For Using Multiple Regression Models**

The data from returned questionnaires to examine the impact of Management Information System on Organizational Effectiveness of the Nigerian Institute of Management was analyzed using multiple regression analysis. Before delving into the reason or justification for using multiple regression analysis, it is important to re-emphasize the definition of regression again for

clarity of the reader(s). Regression Analysis is a statistical technique used to evaluate the relationship between two or more variables (Ambika, 2019). Regression analysis helps an organization to understand what their data points represent and use them accordingly with the help of business analytical techniques in order to do better decision-making. Catherine (2021) opined that regression analysis is the statistical method used to determine the structure of a relationship between two variables (single linear regression) or three or more variables (multiple regression). According to the Harvard Business School Online course Business Analytics, regression is used for two primary purposes:

- ✓ To study the magnitude and structure of the relationship between variables.
- ✓ To forecast a variable based on its relationship with another variable.

Both of these insights can inform strategic business decisions. “Regression allows us to gain insights into the structure of that relationship and provides measures of how well the data fit that relationship,” says HBS Professor Jan Hammond, who teaches Business Analytics, one of three courses that comprise the Credential of Readiness (CRe) program. “Such insights can prove extremely valuable for analyzing historical trends and developing forecasts.” One way to think of regression is by visualizing a scatter plot of your data with the independent variable on the X-axis and the dependent variable on the Y-axis. The regression line is the line that best fits the scatter plot data. The regression equation represents the line’s slope and the relationship between the two variables, along with an estimation of error. Physically creating this scatter plot can be a natural starting point for parsing out the relationships between variables (Catherine 2021). According to Dobromir (2020), regression is grouped into five types as discussed below:

- **Linear regression:** One of the most basic types of regression in machine learning, linear regression comprises a predictor variable and a dependent variable related to each other

in a linear fashion. Linear regression involves the use of a best fit line, as described above. You should use linear regression when your variables are related linearly. For example, if you are forecasting the effect of increased advertising spend on sales. However, this analysis is susceptible to outliers, so it should not be used to analyze big data sets.

- **Logistic regression:** Does your dependent variable have a discrete value? In other words, can it only have one of two values (either 0 or 1, true or false, black or white, spam or not spam, and so on)? In that case, you might want to use logistic regression to analyze your data. Logistic regression uses a sigmoid curve to show the relationship between the target and independent variables. However, caution should be exercised: logistic regression works best with large data sets that have an almost equal occurrence of values in target variables. The dataset should not contain a high correlation between independent variables (a phenomenon known as multi-collinearity), as this will create a problem when ranking the variables.
- **Ridge regression:** If, however, you do have a high correlation between independent variables, ridge regression is a more suitable tool. It is known as a regularization technique, and is used to reduce the complexity of the model. It introduces a small amount of bias (known as the ‘ridge regression penalty’) which, using a bias matrix, makes the model less susceptible to over fitting.
- **Lasso regression:** Like ridge regression, lasso regression is another regularization technique that reduces the model’s complexity. It does so by prohibiting the absolute size of the regression coefficient. This causes the coefficient value to become closer to zero, which does not happen with ridge regression. The advantage? It can use feature

selection, letting you select a set of features from the dataset to build the model. By only using the required features – and setting the rest as zero – lasso avoids over fitting.

- **Polynomial regression:** Polynomial regression models a non-linear dataset using a linear model. It is the equivalent of making a square peg fit into a round hole. It works in a similar way to multiple linear regression (which is just linear regression but with multiple independent variables), but uses a non-linear curve. It is used when data points are present in a non-linear fashion. The model transforms these data points into polynomial features of a given degree, and models them using a linear model. This involves best fitting them using a polynomial line, which is curved, rather than the straight line seen in linear regression (Hunt, 2011). However, this model can be prone to over fitting, so you are advised to analyze the curve towards the end to avoid odd-looking results.

The reason for the adoption of multiple linear regressions in this study was due to the existence of more than one independent variable. The study consist of five independent variables (based on the research questions) which represents management information system and one dependent variable (organizational effectiveness). It is also worthy to re-emphasize that simple regression is usually not enough in a real-life scenario, as targets (dependent variables) are rarely impacted only by a single predictor (Harbula, 2009).

Employing a simple linear regression model, one can analyze how the ad spends influence our sales. However, for a more detailed or comprehensive analysis, it is worthy to also want to enquire on how different add spend affects our revenue. The most probably course of action to do there is to split ad spent into different types and treat them as separate predictors. Our single linear model will be transformed into a multiple one.

The multiple linear regression model is almost the same as the simple one; the only difference being it can have two or more independent variables (predictors).

The function to represent the regression equation is:

$$Y = a + b_1x_1 + c_2x_2 + d_3x_3 + E$$

It is crucial to keep in mind that the multiple regression models require non-co linearity. This means the independent variables should have a minimal correlation between them. Otherwise, it is difficult to assess the real relationship between the dependent (target) and the independent (predictors) variables (Dobromir 2020). The main tools for evaluating multiple linear regressions are the R Square, P-value (Significant F Change) and Durbin Watson score which are further discussed below for clarification(s).

**Durbin Watson:** The Durbin Watson score is included in regression report based on SPSS (statistical package for social science) version 22 report. The Durbin Watson statistic is used to test for serial correlation and the range should be between 1.5 and 2.5 for the independent variable to significantly influence the dependent variable.

**P-value (Sig F Change):** When running a regression model, we can also look at the p-values. These help us assess whether the relationships in our observations (the sample data) also exist in the broader population (Hawkins, 2007). The p-value for each predictor (independent variable) evaluates the null hypothesis that the variable shows no correlation with the dependent variable. When the p-value is below the error margin (usually 0.05 for a 95% confidence interval, most common in finance or 10% that is 0.1 margin of error), we deem the independent variable statistically significant.

**R-squared:** The R-squared value shows how good our model is. It varies between 0 and 1, 0 being a terrible model and 1 being a great model. If our regression shows a value of 0.65, we can explain 65% of the dependent variable's variability with the regression model. Such a measure suggests we have a decent model, not great but usable.

### **Reliability and Validity of the Data Collected Using the Test and Retest Approach**

The key instrumentation adopted to collect data was the questionnaire. Questions contained in the questionnaire were tested with regression technique to determine the validity of acceptance  $H_a$  and rejection of  $H_o$ . In addition, qualitative data were generated using focus group discussion and interviews. To improve the reliability of the questionnaire in this study, the test and retest administration approach was adopted. This meant that the researcher administered the same group of respondent who react to the question without encountering bias before the actual distribution of questionnaire. A pilot oral focus group discussion and interviews were conducted for few respondents before the main focus group discussion and interviews to minimize the chances of bias.

Also, further utilizing the mixed sources of data collection (that is the questionnaires, interviews and focused group discussion) according to Merriam “boosts internal validity of a research data” (as cited in Zohrabi, 2013, p. 258), as it allows the assessment of data precision with reality. In other words, the consistency of data content acquired from several sources ascertained the validation of data appropriateness with reality. This was in addition to the content validity done by the research supervisors on both the questionnaire and the interview guide data collection instruments. However, using the rich blend of sequential explanatory mixed method, where the large quantitative data is collated then analyzed before mixing the smaller qualitative data, equal consideration in data for analytic coding procedures is ensured to avoid saturation. Thereby strengthening the validity and reliability of the research (see Chapter 4).

To determine the impact of management information systems on organizational effectiveness using the Nigerian Institute of Management as a study, this chapter presented the methodology using research onions concept for this study. Whereby the research design, the population of the study, sampling strategy, research instruments, data collection procedures and research ethics were fully discussed. Also, the plan to use a multiple linear regression model to test the significance of the influence of the independent variables on the dependent variable (see table 2 in operationalization of variables) was substantiated in order to arrive at a valid research result. As the reliability of the instrument used was also discussed with a brief on its validation. For clarity, the following indicators listed in table 2, was also utilized to describe the nature of how each variable responds on a likert scale of 1-5. In addition, hypothesis testing was to be determined in order to properly identify the independent variable which had more influence on the dependent variable. Hence, the multiple regression data was subsequently analyzed scientifically using a statistical package known as the Statistical Package for Social Sciences (SPSS). Using SPSS, the regression model was tested on how well it fitted the data.

The significance of each independent variable was also tested. The p-value for each variable was used to make conclusions on whether there is significant impact on management information system or not. However for the Qualitative data, qualitative methods of analyzing data assist to identify, investigate and understand important patterns or themes by examining, comparing and contrasting them. This usage of themes enabled the researcher to further employ the use of a Template methods in analyzing the Qualitative Data since it involves discussion and themes from thematic analysis.

Therefore, the next chapter will give the descriptive findings thorough evaluation as the analysis presented was sort to be further validated by supporting the relevant literatures with the research objectives according to the research question designed in alignment with the research framework.

## **CHAPTER 4: DISCUSSION OF RESEARCH FINDINGS**

### **Introduction**

The procedures adopted for analyzing the data were explained, presented and submitted. Where the volume may be bulky, a trustworthy link was attached to the findings for referencing and for further clarifications. The study made use of quantitative (questionnaires) data and qualitative (interview and focus group) data in order to effectively analyze the research questions (and the underlying hypothesis) and objectives. The objectives would also be linked to the existing literatures in the Descriptive analysis and Evaluation of Findings where the qualitative data was analyzed through thematic analysis while the quantitative data was analyzed through regression technique (SPSS package). The analyzed data are in accordance with the research goals, in which patterns were examined, translated and conclusions drawn on them. Also the results of the data collected and its analysis as well as the interpretations were evaluated and summarized accordingly.

### **Trustworthiness of Data**

In every study, trustworthiness of data is vital to its to ensure the data of the study can be used in another research as secondary, and also to ensure that the results of the research study are true and accurate and can be used to make informed decisions by its beneficiaries (Kingsley



2020). In order to ensure the trustworthiness of the data and dependability, the researcher in conjunction with his supervisor and school management made use of consent forms in order to ensure that the data collected are from vetted human participants, who indicated their interest to participate in the study. In addition, sophisticated tools such as likert's 5point and thematic 3point scales were used for the quantitative and qualitative data respectively to ensure the integrity of the bio-data of the participants are properly marked and coded to maintain confidentiality.

Questionnaires were generated from the objectives and in alignment with the research framework and existing literatures. They were also distributed through the use of Google form in order to effectively retrieve responses from participants for the quantitative aspect of the study, while Zoom was used to retrieve responses from participants for the qualitative aspect of the study. These tools were used in order to effectively and efficiently retrieve data in a transparent and accurate manner free from errors in order to ensure the process is transferable. Also, the use of quantitative and qualitative methods further promoted the creditability and confirm-ability of the research by triangulation process where two methods and assumptions are mixed together to double check for errors and ensure the research is reliable and validable.

### **Reliability and Validation of the Data Used**

Reliability refers to the consistency, stability, or dependability of data (Ade, 2022). In order to ensure the reliability of the data, the questionnaire was distributed to the participants through the use of Google form in order to fast track their responses and for easy data collating and presentation. Zoom was used to organize interviews in order to retrieve the right set of data within the shortest possible time for data collating and presentation of data for analysis purposes.

These tools are free from human error and material error and thus, ensure the reliability of the data. While validity refers to data that are not only reliable, but also true and accurate (Kingsley 2018). The instrument was face-validated by the supervisor and UREC (Unicaf Research Ethics Committee) Board. The Supervisor and the Research Ethics Committee Board was given a copy each of the close-ended questionnaire and interview/focus group questions to indicate any irrelevant statement(s) or wrongly worded items.

The Supervisor and the University's Research Ethics Committee Board Coordinator proffered suggestions for improving the instrument in meeting the purpose of the study. The suggestions and recommendations were subsequently integrated into the modified copy of the questionnaire, interview and focus group questions for data collection and final approval was given.

### **Reliability and Validity on the Justification for using Google Form for Questionnaires Distribution**

Initially, the researcher made use of physical distribution of questionnaires (see Appendix E behind) to obtain quantitative data for the study. The responses were not up to the required response rate due to the strict covid-19 less physical contact and social distancing protocols in place at the time of distribution and tight schedules of the participants. As a result of the inadequate physical distribution, the researcher quickly made use of another proposed approved alternative by using the electronic means through google form for questionnaire distribution.

The questionnaire was designed using Google form and the links <https://forms.gle/ysijBQFqwaewqjEU8> was sent to the participant's email addresses for fast retrieval of the required response rate. The reason for the use of questionnaire was because of the following reasons as noted by Yusuf (2021):

- Google form is a sophisticated mechanism used to design forms for data collection and quick retrieval of data.
- Google form harmonizes collected data for ease of data analysis.
- It is easier to design questionnaire using Google form and as such it does not require advanced computer skills.
- Results from Google forms are free from human error as responses are arranged and harmonized for ease of comprehension and validation of data collected.

### **Reliability and Validity on the Justification for using Zoom for Interview and Focus Group Discussion**

Online face to face zoom was resorted to for interviews and focus group discussions as a result of the following as pointed out by Solomon (2019):

- ✓ Zoom is a video conference application that enhances virtual meeting with two or more persons through the aid of internet.
- ✓ It is easy to operate by non computer experts.
- ✓ Zoom meetings have recording feature which are helpful in the validation of data for the purpose of research study.
- ✓ Zoom meetings are convenient to attend than physical meetings due to participant's busy schedules and time factor on the part of the researcher.
- ✓ It is cost effective for meetings and interviews without having to spend funds on hall.

Zoom was preferred to other online networks such as google meet, skype and Microsoft teams because it has the capacity to interview more than 100 (Hundred) people at once in a session and our participants for interview was above 100. Furthermore using it effectively

organized the interviews and focus group discussion in a cost effective and timely manner. However most of all these online applications like zoom have their strengths (already mentioned above) but it is worthy to note that this zoom online application also has a weakness of crashing over time especially if the storage process is full and the network is unstable. Hence, the researcher resulted to using the interview's and group discussions backup file from google drive stored on google sheets when it was discovered that the video section and the audio section crashed during the preparation of the discussion of findings due to storage issues.

## **Results, Data Presentation and Analysis**

### **Piloting, Data Cleaning and Checks**

This was the last step before sending out the survey, where the researcher carefully checked how the engaging the survey was truly online and further tested it with a small sample of people in real life like Fan and Yan (2010) had stated. This is different from Umbach (2004) paper questionnaire analogy, which had earlier stated that when conducting pilot testing of paper-based questionnaires, the focus is usually on determining if the questions make sense, if the directions are clear and if it takes a reasonable amount of time to complete the questionnaires. Furthermore Austin, Richter and Reinking (2008) noted that web based survey needs to be tested before they are fully implemented. This testing involves checking how well the hardware and software work together, how users interact with the survey questions and how the data is processed. However, the researcher made use of google form as a web based questionnaire then settled for a five-point Likert type questionnaire as the preferred choice for the study after comparing the responses.

According to Exsyn (2021), data cleaning is a process of detecting and correcting corrupt or inaccurate records from a record set or database while normal distribution is based on the total number of questionnaires distributed online. A total of 1000 questionnaires was distributed online

via Google forms. However in the process of sorting the data, collating and analyzing the data for the study, the researcher identified incomplete parts of the data and then deleted the gray areas. Subsequently, the said respondents were approached to fill in the complete data that would facilitate the collation and analysis of the completed data. In addition, the dataset where crosschecked for any errors before it was used for analysis.

At the end of the data cleaning process, a total of 600 (both questionnaires and interviews and focus groups discussions) data response was found to be filled properly and retrieved to be used for regression analysis. As previously mentioned, the researcher made use of web based questionnaires as a normal and electronic distribution after distributing physically was affected with a low responses based on strict covid-19 safety protocols being administered during the retrieval era of data responses. Therefore, in order to protect the data file from malware or being corrupt, the researcher further maintained cautionary safety standards by the continuous use of electronic means through google forms to collect quantitative data for regression analysis. The data were stored on Google drive for analytical and reference purposes.

### **Results of Response Rate**

The study examined the impact of Management Information System on Organizational Effectiveness using Nigerian Institute of Management (Chartered) as a case study. The study made use of mixed method research which combines quantitative and qualitative data to generate valid research results. Questionnaire was used to retrieve quantitative data while interview and focus group discussion was used to extract qualitative data for the study. Questionnaires were distributed to internal stakeholders (NIM Members and Staff) and external stakeholders (Government officials, Legal practitioners, media practitioners, medical practitioners, and

engineers) and the results of the distribution and retrieved (response rate) questionnaires are shown on the next page for proper referencing (using APA 7<sup>th</sup> Referencing guide).

According to Mugenda and Mugenda (2004), a response rate of 50% or more is adequate. Babbie (2004) also asserted that return rates of 50% were acceptable to analyze and publish, 60% was good and 70% was very good. Hence from the Table 5, 500 copies of the questionnaire representing 50% of the sample were retrieved which was satisfactory. The retrieved questionnaires served as the quantitative data of the study.

**Table 5**

***Questionnaire Distribution and Retrieval***

<b>Details</b>	<b>Participants</b>	<b>Distribution</b>	<b>Retrieval</b>
<b>NIM Staff</b>	Top Management	16	8
	Mid Management	74	37
	Operational Management	150	75
<b>NIM Members</b>	Fellow	136	68
	Member	108	54
	Associate	108	54
	Graduate	108	54
<b>External Stakeholders</b>	Government Staff	60	30
	Legal Practitioners	60	30
	Media Practitioners	60	30

	Medical Practitioners	60	30
	Engineers	60	30
<b>Total</b>		<b>1,000</b>	<b>500</b>

Source: Field Work.

**Table 6**

*Interview Response Rate*

<b>Details</b>	<b>Participants</b>	<b>Expected Interviewee</b>	<b>Interviewed</b>	<b>Interview not properly done due to missing informations</b>
<b>External Stakeholders</b>	Medical Practitioner	60	50	10
	Media Practitioner	60	50	10
	Engineer	60	50	10
	Government Staff	60	50	10
	Legal Practitioner	60	50	10
<b>Total</b>		<b>300</b>	<b>250</b>	<b>50</b>

*Source: Field Work*

Table 6 revealed data of participants interviewed. A total of 250 out of 300 participants were interviewed. Thus, representing 83.33% of the sample size, the responses were satisfactory and was subsequently used in the thesis.

**Table 7**

***Focus Group Discussion Response Rate***

<b>Details</b>	<b>Participants</b>	<b>Expected Interviewee</b>	<b>Interviewed</b>	<b>Interview not done properly</b>
<b>NIM Staff</b>	Management (8 Top Management and 4 middle management)	12	12	Nil
<b>NIM Members</b>	Fellow	12	12	Nil
	Member	12	12	Nil
<b>Total</b>		<b>36</b>	<b>36</b>	<b>Nil</b>

*Source: Field Work,*



Table 7 revealed data of participants interviewed. A total of 36 participants undertook the focus group discussions (grouped in three discussion sections) . This amount was deemed to be satisfactory for the study and was subsequently used in the thesis.

## Results of Findings

The results of the findings are reported in phased fashion beginning with the quantitative data (questionnaire) analyzed using regression technique, and then followed by the thematic scales in the qualitative data (interview and focus group discussion) analyzed using template analysis.

### Quantitative Analysis of Data

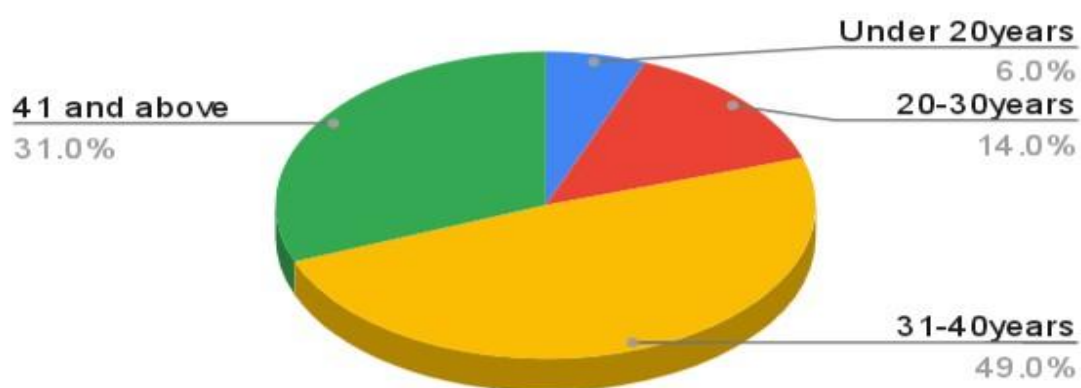
**Table 8**

#### *Bio Data Analysis (Questionnaire)*

<b>Details</b>	<b>Responses</b>	<b>Responses</b>	<b>Responses</b>	<b>Responses</b>	<b>Responses</b>	<b>Total</b>
<b>Age</b>	Under 20years: <b>30</b>	20-30years: <b>70</b>	31-40years: <b>245</b>	41 years and above: <b>155</b>		<b>500</b>
<b>Gender</b>	Male: <b>289</b>	Female: <b>211</b>				<b>500</b>
<b>Working Experience</b>	Below 5 years: <b>142</b>	6-10years: <b>158</b>	11-15years: <b>104</b>	16-20years: <b>76</b>	Above 20years: <b>20</b>	<b>500</b>
<b>Educational Qualification</b>	NCE/OND: <b>78</b>	HND/B.sc: <b>122</b>	M.sc/MBA: <b>146</b>	NIM/ACA/ICAN: <b>54</b>	Others: <b>100</b>	<b>500</b>
<b>Level in Organization</b>	Top Management:	Mid Management:	Operational Management:			<b>120</b>

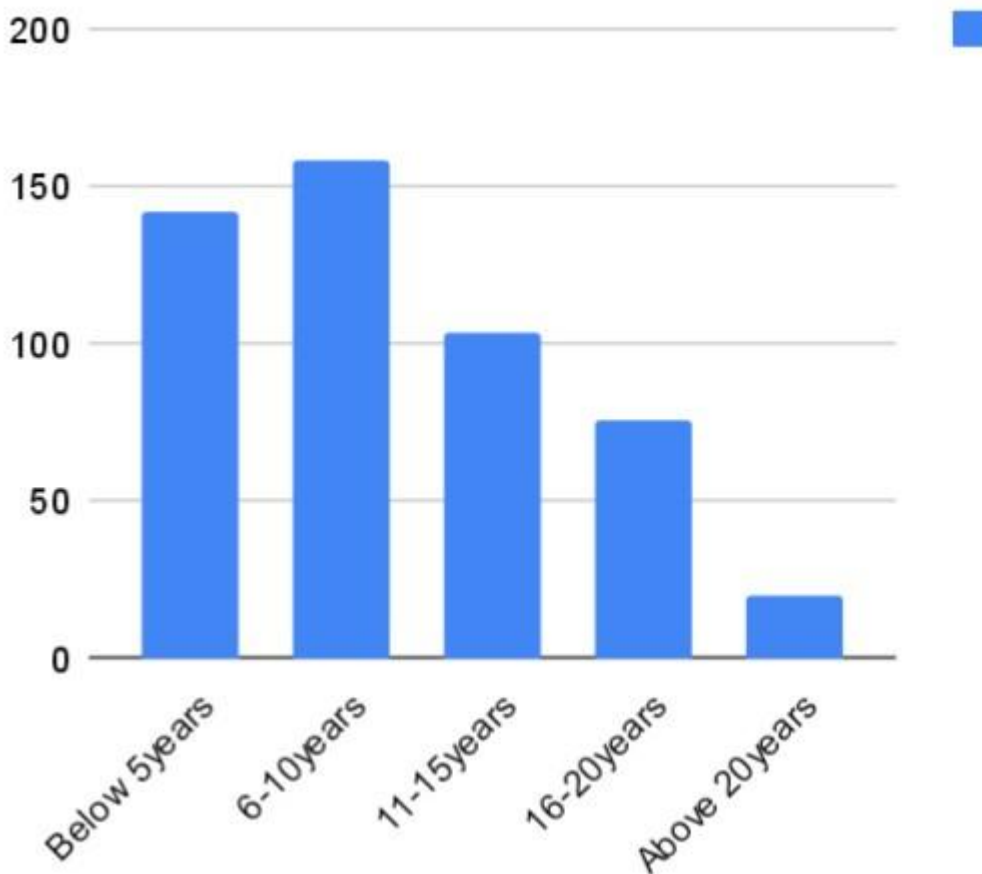
<b>(For Staff Only)</b>	<b>8</b>	<b>37</b>	<b>75</b>			
<b>Professional Qualification</b> (For NIM Members and Staff)	Graduate: <b>54</b>	Associate: <b>54</b>	Member: <b>54</b>	Fellow: <b>68</b>		<b>230</b>
<b>Role Carried</b> (For External Stakeholders)	Government Staff: <b>30</b>	Medical Practitioner: <b>30</b>	Media Practitioner: <b>30</b>	Legal Practitioner: <b>30</b>	Engineer: <b>30</b>	<b>150</b>

Results from table 8 showed that:



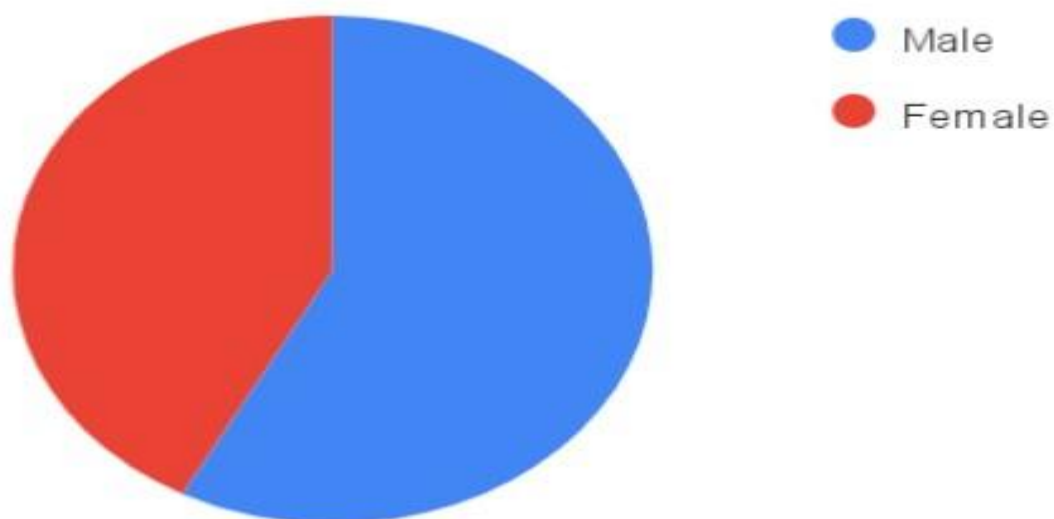
**Age Distribution**

Out of 500 retrieved questionnaires, 30 participants (6%) fall under 20years below, 70 respondents (representing 14%) fall within 20 to 30years old, 245 participants (representing 49%) fall within 31 to 40years old, while 155 respondents (representing 31%) fall within 41 years and above



#### **Working Experience Chart**

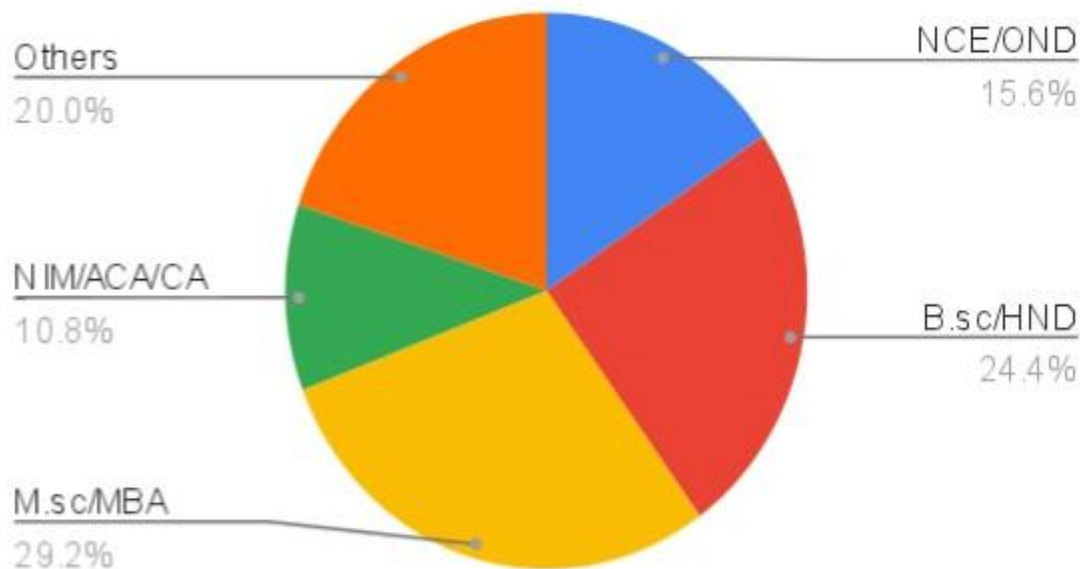
Out of 500 retrieved questionnaires, 142 participants have lesser years of experience (Below 5years), while 358 respondents have moderate to high years of experience (Above 5years).



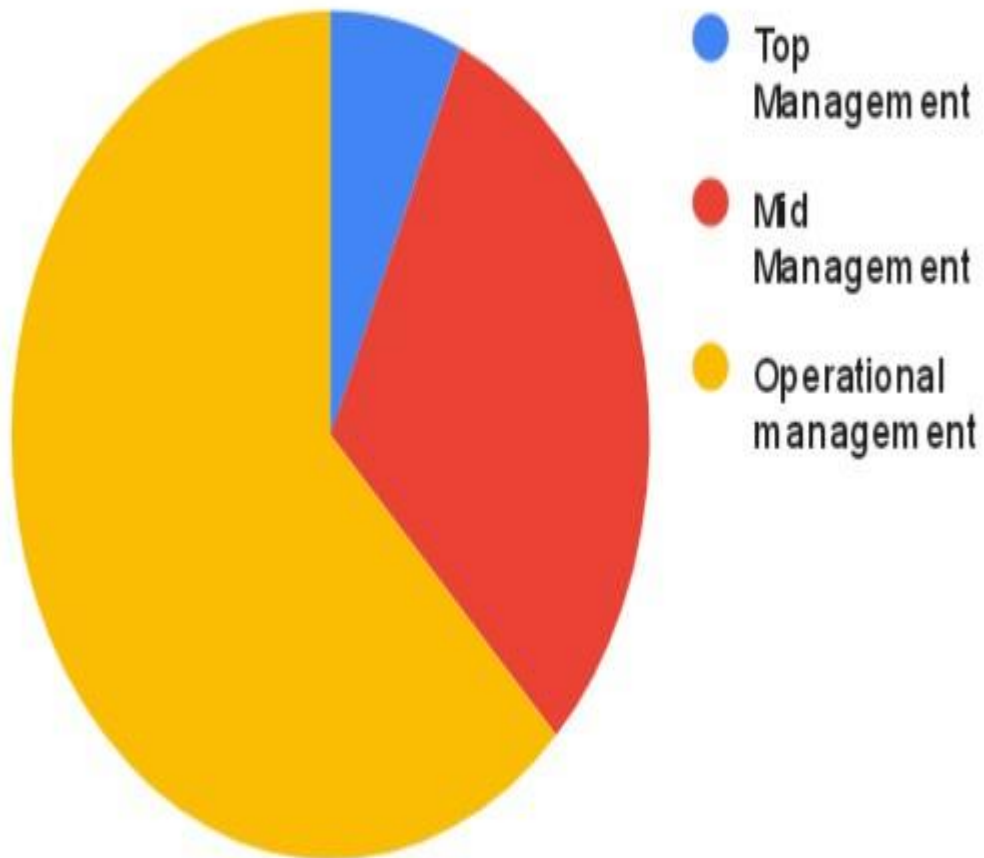
### Gender Distribution

The retrieved 500 questionnaire had 289 male participants and 211 female participants

### Educational Qualification Chart

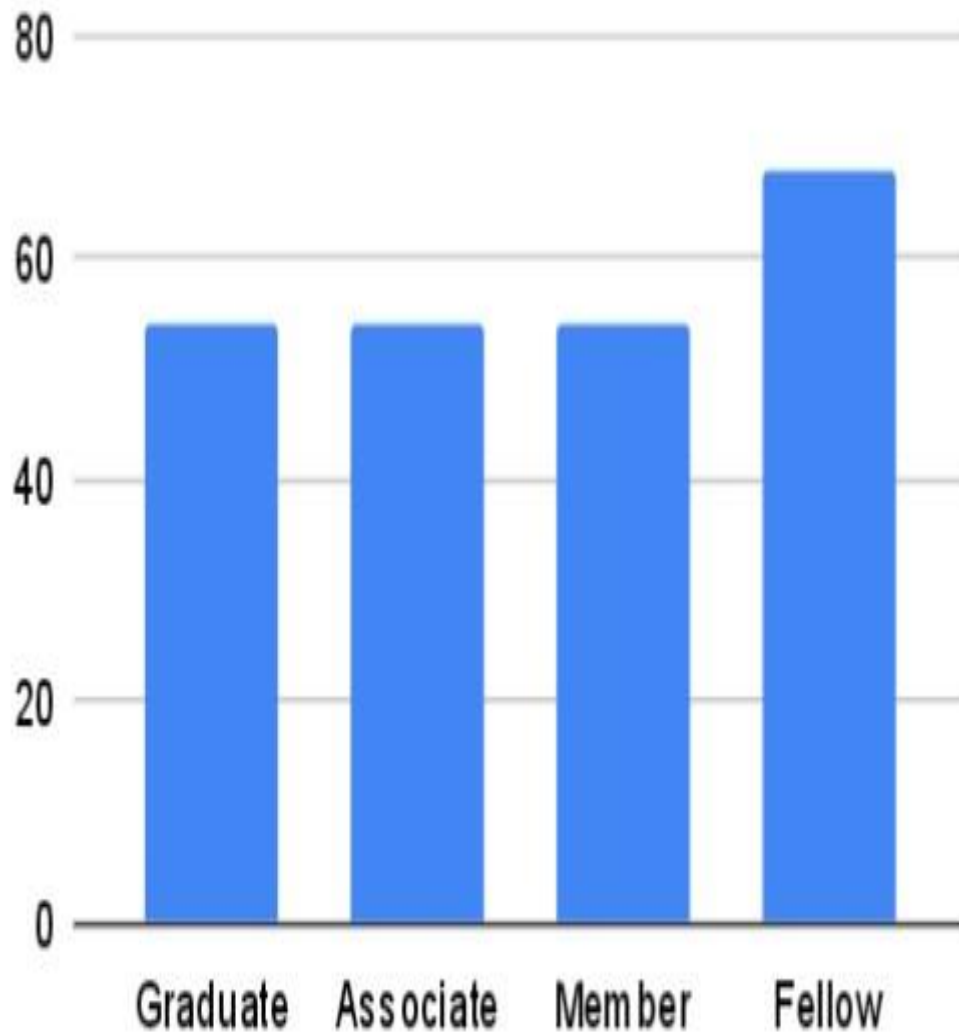


A great number of participants have moderate to high educational background with 78 having NCE/OND credential, 122 having HND/B.sc credential, 146 having M.sc/MBA credential, 54 having professional certification, and 100 having other forms of educational certifications

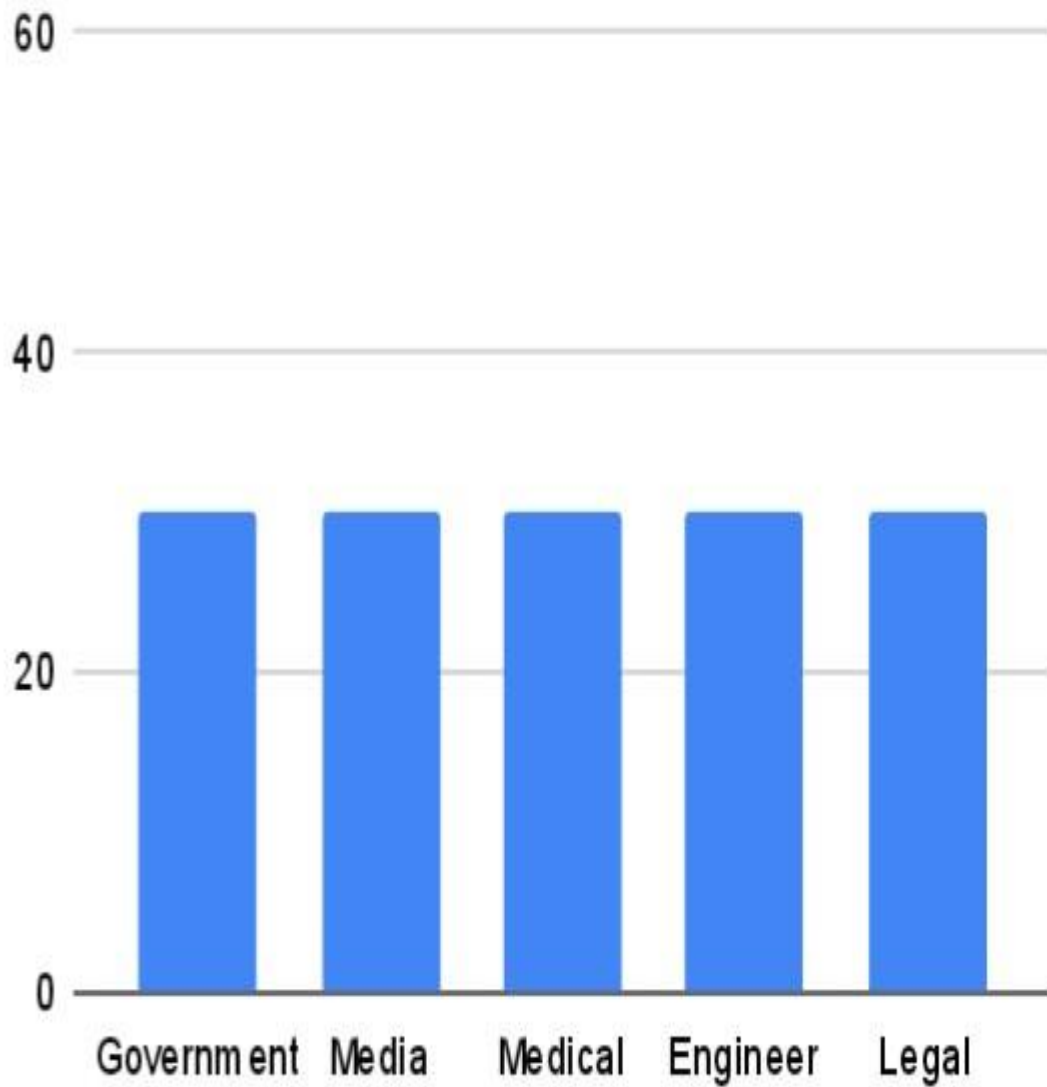


### **Level in Organization**

Out of the 500 retrieved questionnaires, 8 participants are top management of NIM, 37 are mid managers, while 75 are operational staff. The remaining are non NIM Staff participants.

**Professional Qualification Chart**

Out of the 500 retrieved questionnaires, 68 are NIM fellows, while the other membership grades (member, associate and graduate) are 54 each in number, others are non NIM Members.

**Role Carried Out**

Based on the retrieved questionnaires, 150 participants (30 each) are external stakeholders of NIM with specialty in engineering, media, medical, legal and government fields.

### **Variability of Scales and Descriptive Analysis**

From the previous chapter (Chapter 3) in table 2 Operationalization of variables, the questionnaires, interviews and group discussions were focused on the objectives of the study which relates to issues on measuring the variance or relationship between the variables. Further noting that the research questions (RQ) are structured in-line with the research objectives using five dimensions of management information system (MIS) and it acts as one of the core independent variables (**IV**) that shows how it impacts organizational effectiveness (OE) which is the dependent variable (**DV**).

Where, **LBO** = Levels of business operation (**IV1**)

**RSE** = Re-engineering the structures of the extent of HRM (**IV2**)

**LYM** = Leadership styles on human resource management (**IV3**)

**BIT** or **EIT**= Boost (or Emergence) in Information technology (**IV4**)

**ATI** = Advanced technological infrastructures (**IV5**).

*And the research framework aligns with the Five Research Objectives (RO) namely;*

**RO1).** To compare the level of operations and management information systems drive in human resources development at the pre and post chartered era.

**RO2).** To assess the major differences (leadership style, structure) in human resources development in the pre and post chartered era.

**RO3).** To establish the re-engineering/change management and administration in the human resources development in the post chartered era.

**RO4).** To determine if the boost in information technology is meant for improving the management information system in human resources development in the post-chartered era.

**RO5).** To identify and establish the advanced roles in the infrastructural technologies of business services and decision making in human resources development at the post-chartered era for the organization's effectiveness.



***And the objectives also aligns respectively with the Five Supporting Existing Literature Theories (ELT)***

Postulations of scholars and theories relevant to the study objectives by exploring the research questions and problems. The contents are illustrated using a descriptive analysis (DA) in Table 9;

**ELT1).** Human Relations Theory (Elton Mayo, 1924),

**ELT2.** Resources Based Theory (Wade and Hulland, 2004),

**ELT3).** Theory of Planned Behaviour (Ajzen, 1991) and Open Systems Theory (Bastedo, 2004).

**ELT4).** Gap Analysis (Obloj & Capron, 2011) and Diffusion of Innovation (Rogers, 1995),

**ELT5).** Technology Acceptance Model –TAM (Davis, 1989).

The indicator used to show how each variable varies is the Likert scale of 5points where 5 is strongly agree, 4 is agree, 3 is neutral, 2 is disagree and 1 is strongly disagree.

**Table 9**

***Quantitative Tabular Descriptive Analysis***

<b>Research Frame work and Questions</b>	<b>Strongly Agree(5)</b>	<b>Agree (4)</b>	<b>Neutral (3)</b>	<b>Disagree (2)</b>	<b>Strongly Disagree(1)</b>	<b>Total</b>	<b>Mean</b>
Management Information System (MIS) Impact on Organizational Effectiveness (OE) in human resource development(HRD).							

<b>Descriptive</b>  <b>Analysis (DA): In line with Human Relations Theory and RO1,2&amp;3,H5</b>							
There are pre and post chartered era in the Nigerian Institute of Management which leads to human resources and change management strategies.  <b>DA: In line with Resource Based Theory and RO 2 &amp; 3, Ha 2&amp;3</b>	190(950)	210(840)	40(120)	35(70)	25(25)	500(2,005)	4.01
Human Resource development was not very effective in the pre chartered era due to the use of outdated services.	120(600)	285(1,140)	15(45)	42(84)	38(38)	500(1,907)	3.81

<b>DA: In line with Human Relations Theory and with RO 1, HO1</b>							
During the post chartered era, the provision of modern information technology services was channeled through change management structures (such as gap analysis and diffusion of innovation theory).  <b>DA: In line with Theory of Planned Behaviour and Open System Theory and Gap Analysis and Ha3, RO 3, 4&amp;5.</b>	92(460)	308(1,232)	10(30)	28(56)	62(62)	500(1,840)	3.68
The boosts in technology lead to	40(200)	260(1,040)	20(60)	85(170)	95(95)	500(1,565)	3.13

<p>the use of management information systems (MIS) facilities which enabled ease of business operations.</p> <p><b>DA: In line with Gap Analysis Model and Diffusion of Innovation Theory and Ha4, RO 4&amp;5</b></p>							
<p>The advance in technological Infrastructures cemented the relevance of MIS in human resource development during post chartered era and its acceptability (Technology Acceptance Model) is a major drive for</p>	90(450)	300(1,200)	10(30)	25(50)	75(75)	500(1,805)	3.61

NIM effectiveness.  <b>DA: In line with TAM and Ha5 and RO 4&amp;5.</b>							
<b>Research Question</b>  <b>One: Levels of Business Operation</b>  <b>(DA : This IV1 aligns with RO1 &amp; supports ELT1)</b>							
The level of business operation in the pre chartered era lead to change management strategies.  <b>(DA: aligns with RO 1&amp;2 and supports Ha1&amp;3 and ELT 1&amp;2)</b>	130(650)	270(1,080)	5(15)	15(30)	80(80)	500(1,855)	3.71
Level of business operation are different with	142(710)	188(752)	(300)	10(20)	60(60)	500(1,842)	3.68

regards to management information systems drive in human resource development during the pre and post chartered era of the organization <b>(DA: aligns with RO 1,2&amp;3 and supports Ha1, Ho1 and ELT 1,2&amp;3)</b>							
The level of business operation in the post chartered era is one major MIS drive that helps the human resource development <b>(DA: Aligns with RO 1,2&amp;3 and supports Ha1 and</b>	23(115)	307(1,228)	35(105)	100(200)	35(35)	500(1,683)	3.37

<b>ELT 1,2&amp;3)</b>							
<b>Research Question</b> <b>Two: Reengineering</b> <b>the structure/extent</b> <b>of human resource</b> <b>penetration</b> <b>(DA: This IV2 aligns</b> <b>with RO 2 and 3 and</b> <b>supports Ha2 and</b> <b>ELT 2&amp;3).</b>							
The reengineering of an organization has impact on the human resource development. <b>(DA: aligns with</b> <b>RO2&amp;3 and supports</b> <b>Ha2 and ELT 2&amp;3).</b>	124(620)	136(544)	40(120)	120(240)	80(80)	500(1,604)	3.21
There is a major difference in the extent of management information systems	210(1,050)	40(160)	52(156)	98(196)	100(100)	500(1,662)	3.32

penetration in human resource development within the pre and post chartered era of the organization.  <b>(DA: aligns with RO 1.2&amp;3 and supports Ha2&amp;3 and ELT 1,2&amp;3)</b>							
The structure of an organization has impact on human resource development.  <b>DA: aligns with RO 2,3&amp;4 and supports Ha2 and ELT 2,3&amp;4)</b>	60(300)	160(640)	100(400)	100(200)	80(80)	500(1,620)	3.24
<b>Research Question Three: Leadership/Change Management.</b>							



<b>(DA: This IV3 aligns with RO 1,2,3&amp;4 and supports ELT 1,2,3&amp;4)</b>							
The leadership style of an organization has impact on the human resource.  <b>(DA: aligns with RO2&amp;3 and supports Ha2&amp;3 and ELT 2&amp;3)</b>	120(600)	100(400)	220(660)	15(30)	45(45)	500(1,735)	3.47
Involvement of human resource management in change management and administration is remarkable.  <b>(DA: aligns with RO2&amp;3 and supports Ha3 and ELT 2&amp;3)</b>	200(1,000)	180(720)	10(30)	90(180)	20(20)	500(1,950)	3.90
Human Resource Management involvement in	130(650)	170(680)	80(240)	110(220)	10(10)	500(1,800)	3.60

change management and administration is effective in the human resource development of the organization within the pre and post chartered era of the organization.  <b>(DA: Aligns with RO 1,2&amp;3 and supports Ha2&amp;3 and ELT 1,2&amp;3)</b>							
<b>Research Question Four: Boost in Information Technology</b>  <b>(DA: This IV4 aligns with RO 3,4&amp;5 and supports ELT 3,4&amp;5)</b>							
The use of							

<p>information technology boosts management information systems (MIS) based facilities and strengthens the business operations.</p> <p><b>(DA: Aligns with RO 3,4&amp;5 and supports Ha4 and ELT 3,4&amp;5)</b></p>	75(375)	225(900)	64(192)	100(200)	36(36)	500(1,703)	3.41
<p>Information Technology improves management information systems in human resource development for organizational effectiveness at the post chartered era.</p> <p><b>(DA: Aligns with RO 3,4&amp;5 and</b></p>	100(500)	156(624)	144(432)	90(180)	10(10)	500(1,746)	3.49

<b>supports Ha4&amp;5 and ELT 3,4&amp;5)</b>							
Information technology leads to MIS integration for organizational effectiveness.  <b>(DA: Aligns with RO 4&amp;5 and supports Ha4&amp;5 and ELT 4&amp;5)</b>	155(775)	80(320)	45(135)	200(400)	20(20)	500(1,650)	3.30
<b>Research Question Five: Advanced Technological Infrastructure.</b>  <b>(DA: This IV5 is inline with RO4 &amp;5 and supports Ha5 and ELT 5)</b>							
Advanced Technological Infrastructure places a major role for	120(600)	130(520)	40(120)	200(400)	10(10)	500(1,650)	3.30

executive decision making.  <b>(DV: Aligns with RO 3,4&amp;5 and supports Ha5 and ELT 3,4&amp;5)</b>							
ATI places a major role in business services.  <b>(DV: Aligns with RO 4&amp;5 and supports Ha5 and ELT 4&amp;5)</b>	200(1,000)	20(80)	60(180)	180(360)	40(40)	500(1,660)	3.32
ATI places a major role in decision making and business services impacting MIS effectiveness in the post chartered era of the institute's HRD.  <b>(DV: Aligns with RO 5 and supports Ha5 and ELT 5)</b>	250(1,250)	10(40)	5(15)	200(400)	35(35)	500(1,740)	3.48

Source: Field work

Retrieved-from,

[https://docs.google.com/spreadsheets/d/1SdOFHfZ9zEVFNrKfqoxBFzkKmfWC8qVdzLgz\\_2mmfXg/edit?usp=drivesdk](https://docs.google.com/spreadsheets/d/1SdOFHfZ9zEVFNrKfqoxBFzkKmfWC8qVdzLgz_2mmfXg/edit?usp=drivesdk)

As a valid, reliable and trustworthy data, the questionnaire responses were coded using the 5point likert scale. Bearing in mind that positive responses (above  $>3.00$ ) is in agreement to the questions asked while any point (below  $<3.00$ ) is negative response and is either indifferent (scale 3- neutral) or against (scale 2 and 1–Disagree and strongly disagree) the question asked.

### **Cutoff Point Summary**

The cutoff point for the quantitative descriptive analysis were arrived as enumerated here:

- The questionnaire used in the data collection were designed in 5point likert scale.
- Strongly agree, agree, neutral, disagree and strongly disagree are represented as 5,4,3,2,1.
- Point 3 which is the neutral point stands as the median which is the point between positive significant relationship and negative insignificant relationship with respect to the posed research hypothesis.
- In order for the quantitative data collected to be eligible for regression analysis, it must fall within point 3 to point 5.
- Scenario where the averages of the descriptive quantitative analysis fall below point 3, the null hypothesis is automatically accepted. The reason being that the entire response are in support that management information system do not significantly impact organizational effectiveness with respect to the questions posed in the questionnaire.

Hence, the reason cutoff point is considered to be point 3 in the study, thereby further signifies that the above table which analyses the impact of management information systems on organizational effectiveness: a case study of NIM revealed that the **20** statements from the five research objectives have mean higher than the cut-off point of 3.00 which is above the average cut-off point thus is acceptable for regression analysis.

## **Linear Correlation**

According to Editage Statistical review on correlational analysis, performing a correlational analysis helps to identify which variable is relevant or more relevant. The technique to learn how strong or weak these variables are associated is called correlation. Also the process of using the relation to predict one variable provided the observation in another variable is known is known as regression analysis. Satale (2021) in his publication on how to use a correlation test before going for the regression analysis stated that before going to conduct a regression analysis, it is important to check whether there is a significant correlation between the two variables. Therefore a correlation test helps in checking the significance of correlation and hypothesis test was used for this purpose before going for regression analysis.

### **Procedure on Hypothesis 1: Management Information System (Levels of Business Operations) and Organizational Effectiveness**

**Ho1:** There is no significant relationship between the levels of business operations with regards to management information systems drive in human resources development on the Organizational effectiveness in the pre and post chartered era of the Nigerian Institute of Management.

**Ha1:** There is a significant relationship between the levels of business operations with regards to management information systems drive in human resources development on the Organizational effectiveness in the pre and post chartered era of the Nigerian Institute of Management.

**Table 10*****Hypothesis test 1***

<b>Correlations</b>	<b>Parameters</b>	<b>Levels of Business Operations</b>	<b>Organizational Effectiveness</b>
Levels of Business Operations	Pearson	1	.020
	Correlation		.953
	Sig. (2 tailed)	500	500
	N		
Organizational Effectiveness	Pearson	.020	
	Correlation	.953	
	Sig. (2 tailed)	500	500
	N		

*Source: SPSS Output (22), Author's Computation (2023)*

The results in the above table show the relationships between the independent variable (management information systems with respect to levels of business operations) and the dependent variable (organizational effectiveness). The table indicates that there is a significant positive relationship between the levels of business and Organizational effectiveness, from the correlation coefficient of 0.020, which is significant at 5% level of significance. This result suggests that Organizational effectiveness of the Nigerian Institute of Management likely increases with increase in management information systems with respect to levels of business.

Therefore, the result is a two-tailed test thus, we reject the null hypothesis and conclude that the correlation coefficient  $p$  is significant and also accept the alternate hypothesis.

**Procedure on Hypothesis 2: Management Information System (Leadership style, structure and reengineering) and Organizational Effectiveness**



**Ho2:** There is no significant relationship between leadership style, structure, and reengineering in the extents of management information systems penetration in human resources development on the Organizational effectiveness in the pre and post chartered era of the Nigerian Institute of Management.

**Ha2:** There is a significant relationship between leadership style, structure, and reengineering in the extents of management information systems penetration in human resources development on the Organizational effectiveness in the pre and post chartered era of the Nigerian Institute of Management.

**Table 11**

***Hypothesis test 2***

Correlations	Parameters	Leadership style, Structure and Reengineering	Organizational Effectiveness
Leadership style, Structure and Reengineering	Pearson Correlation Sig. (2 tailed) N	1  500	.033 .967 500
Organizational Effectiveness	Pearson Correlation Sig. (2 tailed) N	.033 .967 500	500

*Source: SPSS Output (22), Author's Computation (2023)*

The results in the above chart show the relationships between the independent variable (management information systems with respect to leadership style, structure and reengineering) and the dependent variable (organizational effectiveness). The chart indicates that there is a significant positive relationship between the leadership style, structure and reengineering, and Organizational effectiveness, from the correlation coefficient of 0.033, which is significant at 5% level of significance. This result suggests that Organizational effectiveness of the Nigerian

Institute of Management likely increases with increase in management information systems with respect to leadership style, structure and reengineering.

Therefore, the result is a two-tailed test thus, we reject the null hypothesis and conclude that the correlation coefficient  $p$  is significant and also accept the alternate hypothesis.

### **Procedure on Hypothesis 3: Management Information System (Interactive Effects of Human Resources Management) and Organizational Effectiveness**

**Ho3:** There is no significant relationship between interactive effects of Human Resources management on change management/administration on organizational effectiveness in human resources development in the pre and post chartered era of the Nigerian Institute of Management.

**Ha3:** There is a significant relationship between interactive effects of Human Resources management on change management/administration on organizational effectiveness of the Nigerian Institute of Management's pre and post chartered eras in the human resources development.

**Table 12**

#### ***Hypothesis test 3***

<b>Correlations</b>	<b>Parameters</b>	<b>Interactive Effects of Human Resources Management</b>	<b>Organizational Effectiveness</b>
Interactive Effects of Human Resources Management on Change Administration	Pearson Correlation Sig. (2 tailed) N	1 500	.041 .947 500
Organizational Effectiveness	Pearson Correlation Sig. (2 tailed) N	.041 .947 500	500

*Source: SPSS Output (22), Author's Computation (2023)*

The results in the above table show the relationships between the independent variable (management information systems with respect to interactive effects of human resources management) and the dependent variable (organizational effectiveness). The table indicates that there is a significant positive relationship between the interactive effects of human resources management and Organizational effectiveness, from the correlation coefficient of 0.041, which is significant at 5% level of significance. This result suggests that Organizational effectiveness of the Nigerian Institute of Management likely increases with increase in management information systems with respect to interactive effects of human resources management.

Therefore, the result is a two-tailed test thus, we reject the null hypothesis and conclude that the correlation coefficient  $p$  is significant and also accept the alternate hypothesis.

#### **Procedure on Hypothesis 4: Management Information System (Emergence of Information Technology) and Organizational Effectiveness**

Ho4: There is no significant relationship between the emergence of information technology boost management information systems on organizational effectiveness in human resources development in the post chartered era of the Nigerian Institute of Management.

Ha4: There is a significant relationship between the emergence of information technology boost management information systems on organizational effectiveness in human resources development in the post chartered era of the Nigerian Institute of Management.

**Table 13*****Hypothesis test 4***

Correlations	Parameters	Emergence of Information Technology	Organizational Effectiveness
Emergence of Information Technology	Pearson Correlation Sig. (2 tailed) N	1  500	.048 .897 500
Organizational Effectiveness	Pearson Correlation Sig. (2 tailed) N	.048 .897 500	500

Source: SPSS Output (22), Author's Computation (2023)

The results in the above table show the relationships between the independent variable (management information systems with respect to the emergence of information technology) and the dependent variable (organizational effectiveness). The table indicates that there is a significant positive relationship between the emergence of information technology and Organizational effectiveness, from the correlation coefficient of 0.048, which is significant at 5% level of significance. This result suggests that Organizational effectiveness of the Nigerian Institute of Management likely increases with increase in management information systems with respect to the emergence of information technology. Therefore, the result is a two-tailed test thus, we reject the null hypothesis and conclude that the correlation coefficient  $p$  is significant and also accept the alternate hypothesis.

**Procedure on Hypothesis 5: Management Information System (Advanced Technological Infrastructure) and Organizational Effectiveness**

**Ho5:** There is no significant relationship between the impact of the roles of the advanced technological infrastructure in executive decision making and business services with respect to

management information systems on organizational effectiveness in the post chartered era of the Nigerian Institute of Management's human resources development.

**Ha5:** There is a significant relationship between the impact of the roles of the advanced technological infrastructure in executive decision making and business services with respect to management information systems on organizational effectiveness in the post chartered era of the Nigerian Institute of Management's human resources development.

**Table 14**

***Hypothesis test 5***

Correlations	Parameters	Advanced Technological Infrastructure	Organizational Effectiveness
Advanced Technological Infrastructure	Pearson Correlation Sig. (2 tailed) N	1  500	.029 .914 500
Organizational Effectiveness	Pearson Correlation Sig. (2 tailed) N	.029 .914 500	500

(Source: SPSS Output (22), Author's Computation)

The table 14 results in the above table show the relationships between the independent variable (management information systems with respect to the advanced technological infrastructure) and the dependent variable (organizational effectiveness). The table indicates that there is a significant positive relationship between the advanced technological infrastructure and Organizational effectiveness, from the correlation coefficient of 0.029, which is significant at 5% level of significance. This result suggests that Organizational effectiveness of the Nigerian Institute of Management likely increases with increase in management information systems with respect to the introduction of advanced technological infrastructure.

Therefore, the result is a two-tailed test thus, we reject the null hypothesis and conclude that the correlation coefficient  $p$  is significant and also accept the alternate hypothesis.

### **Multiple Regression Analysis and Its Descriptive Analysis of Findings on the Research Objectives**

According to Laerd Statistics, linear regression is the next step after correlation for it is used when the intention is to predict the value of a variable based on the value of another variable. The predicting variable is called the dependent variable while the variable used to predict other variable's value is known as independent variable. However and as previously mentioned in the latter part of chapter 3 of this study, the regression analysis used is multiple linear regressions due to the existence of more than one independent variable, that is, the five independent variable which all represents management information system and one dependent variable which is the organizational effectiveness.

The five research questions stated in the first chapter of this research were further tested using multiple regressions through the use the Statistical Package for Social Sciences (SPSS) software to determine the extent to which the independent variable influences the dependent variables in this study, that is, to determine the predictive power of management information system on organizational effectiveness of NIM. While the related hypothesis were either accepted or rejected based on the significant of the impact seen from the analysis. Hence based on the SPSS version 22 used, a Durbin Watson statistic is included to test for serial correlation and the range should be between 1.5 and 2.5 for the independent variable to significantly influence the dependent variable. While, the P-value (significant F change) is also essential as it helps to assess whether the relationships in the observation (sample data) also exist in the broader population (Hawkins, 2007).

Benkendor et al. (2020) affirms that when the p-value is below the error margin (usually 0.05 for a 95% confidence interval or 10% that is 0.1 margin of error), then the independent variable is deemed to be statistically significant. Then also the R-square value is used to show how good the model is for it varies between 0 and 1 where 0 being a terrible model and 1 being a great model. Therefore, in this study of human resource development (HRD), descriptive analysis procedures will further analyze the five research questions respectively in-line with the five research objectives using the variability of scales (as earlier mentioned) to show whether it is in agreement with the research question or not and the discussions linking the findings with the research objectives and existing literature(s) are cited with similar previous works done.

Hence, this mixed-method study further justifies the adoption of multiple linear regressions as it is suitable for analyzing whether multiple independent variables have significant relationship with the dependent variable.

**Research Question One (RQ1): What were the levels of business operation with regards to management information system drive in human resource development in the pre chartered and within the post chartered era of the organization (NIM)?**

Also bearing in mind that the null hypothesis represented as  $H_0$  are tested and analyzed using the multiple regression approach in order to attain the objectives of the study. In cases, where the null hypothesis  $H_0$  do not meet the decision criterion of regression analysis, the alternate hypothesis represented as  $H_a$  are accepted, while the null hypothesis are rejected.

$H_{01}$ ): There is no significant relationship between the levels of business operations with regards to management information systems drive in human resources development on the

Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered and within its post-chartered era.

Ha1): There is a significant relationship between the levels of business operations with regards to management information systems drive in human resources development on the Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered and within its post-chartered era.

**Table 15**

***Analysis of Levels of Business Operations***

Model	R	R square	Adjusted R Square	Std Error of Estimate	Change Statistics					Durbin Watson
					R Squared Change	F change	df1	df2	Sig F change	
1	.534a	0.64	0.75	0.79565	0.56	14.015	1	90	0.76	1.507
<i>a. Predictors: (Constant), levels of business operation</i>										
<i>b. Dependent variable: organizational effectiveness</i>										
<i>Source: SPSS version 22.</i>										

In the descriptive analysis, while noting that the first research objective is to, compare the levels of business operation with regards to management information systems drive in human resources development during the pre and post chartered era of the organization. Therefore, from the table 15 above indicates a correlation co-efficient of 0.534 which shows that there is a slightly high relationship between level of business operation and organizational effectiveness of the Nigerian Institute of Management. The F-ratio (14.015) and the P-value of (0.76) suggest that the Ha1 (alternate hypothesis) is mostly accepted here where the levels of business operation has a positive and a significant relationship with management information system drive in human



resource development in pre chartered and within the post chartered era of the Nigerian Institute of Management.

This suggests that the level of business operation with regards to management information system led to human resource development in pre chartered and post chartered era of the Nigerian Institute of Management. Further suggesting that the Ho1 (null hypothesis) was seen at some instances (especially during the pre-chartered era where primitive methods of transacting business was predominant) also as the level of business operation with regards to management information system led to a positive and negative human resource development in pre chartered and post chartered era (respectively) of the Nigerian Institute of Management. Thus, in-line with the Human Relations Theory of motivation in the workplace, that believes that people desire to be part of a supportive team that facilitates development and growth (Levitt and List, 2011). For the Nigerian Institute of Management during the pre-chartered era was characterized by the use of outdated facilities, traditional and adaptive means of operations and had poor health and safety measures in place and the desire to make a decision to change aligns with this existing theory.

The study also supports William (2006) findings that the decision maker chooses which information he thinks is important for making decision. Furthermore, the study results support the research by Delorme and Arcand (2010), who explored how Human Resources (HR) roles and responsibilities have evolved from traditional to strategic perspectives. They found that the adoption of new technologies in the company changed how HR professionals perform their duties both in the HR department and the organization as a whole. While, the post-chartered era also suggests that the Ha1 (alternate hypothesis) was accepted here while the Ho1 (null hypothesis) was rejected here as the level of business operation with regards to management

information system led to positive human resource development of the Nigerian Institute of Management mainly because of the use of modern facilities for business operations and the development of internet services which connects their businesses to the world.

This is also related to the paternalistic nature of the Human Relations Theory which caters for all where managers take more interest on the workers and treat them as people who have worthwhile opinions and realize that workers enjoy interacting together (Greenwood and Wren, 1993). Hence, from the research questions, the findings can be interpreted as in agreement or alignment with the research objective and with the existing literature (human relation theory).

**Research Question Two: What are the major differences in the extents of management information systems penetration in human resource development in the pre and post chartered era of the organization?**

Ho2): There is no significant relationship between leadership style, structure, and reengineering in the extents of management information systems penetration in human resources development on the Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered era and within its post-chartered era.

Ha2): There is a significant relationship between leadership style, structure, and reengineering in the extents of management information systems penetration in human resources development on the Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered era and within its post-chartered era.

Table 16

*Analysis of Reengineering and structure/extent of human resource penetration*

Model	R	R square	Adjusted R Square	Std Error of Estimate	Change Statistics					Durbin Watson
					R Squared Change	F change	df1	df2	Sig F change	
1	.681a	0.63	0.62	0.75894	0.63	3.054	1	90	0.84	1.615
<i>a. Predictors: (Constant), Reengineering the structure/extent of human resource penetration</i>										
<i>b. Dependent variable: organizational effectiveness</i>										
<i>Source: SPSS version 22</i>										

In the descriptive analysis, while noting that the second research objective is to, access the major differences (structure & re-engineering) in the extent of Management Information Systems penetration in human resources development within the pre and post chartered eras of the organization. Therefore, from the Table 16 above denotes a correlation co-efficient of 0.681 which shows that the Ha2 (alternate hypothesis) was accepted here as there is a positive relationship between reengineering the structure and extent of human resource penetration and Organizational effectiveness of the Nigerian Institute of Management which shows significant impact on management information systems.

The F-ratio (3.054) and the P-value of (0.84) suggest that the extent of management information systems penetration in human resource development vary in the pre and post chartered era of the Nigerian Institute of Management. The penetration of management information system in human resource development was high at post chartered era compared to pre chartered era of the Nigerian Institute of Management which further support Ha2. This is visibly seen in the re-engineering processes and structure as it will inevitably lead to the availability of adequate resources such as adequate finance and competent human resource which are crucial for the organizational effectiveness of market entry strategy management practices in

a rapidly changing environment (Wade & Hulland, 2004) known as Resources Based Theory. This existing literature further rejects the Ho2 (null hypothesis) and corresponds with the second research objectives as the need for training and development, specialization of skills, recruitment, manpower planning are enabled by the provision of information technology facilities.

The study results support Adeosun, Adeosun and Adetunde's (2009) findings which said that using information technology tools assist enterprises. Emphasizing that information technology is transforming the way technology is used and understood in businesses and organizations. However, the study findings are inconsistent with those in Burbach and Dundon (2005) conducted a study and discovered that human resource system technologies were used for administrative rather than strategic decision-making purposes. These double findings mentioned supports the Ho2 and can be related to the research findings of the pre-chartered era which had a negative impact on management information system on NIM effectiveness and the post-chartered era which had a positive impact on management information system on NIM effectiveness.

**Research Question Three: What were the interactive effects of human resource in change management on organizational effectiveness in human resource development in the pre and post chartered era of the organization?**

Ho3): There is no significant relationship between interactive effects of Human Resources management on management/administrative changes on the organizational effectiveness of the Nigerian Institute of Management in human resources development during its pre-chartered era and within its post-chartered era.

Ha3): There is a significant relationship between interactive effects of Human Resources management on management/administrative changes on the organizational effectiveness of the Nigerian Institute of Management in human resources development during its pre-chartered era and within its post-chartered era.

**Table 17**

*Analysis of leadership style in change management/administration*

Model	R	R square	Adjusted R Square	Std Error of Estimate	Change Statistics					Durbin Watson
					R Squared Change	F change	df1	df2	Sig F change	
1	.745a	0.69	0.59	0.66728	0.619	12.142	1	90	0.71	1.994
<i>a. Predictors: (Constant), leadership style</i>										
<i>b. Dependent variable: organizational effectiveness</i>										
<i>Source: SPSS version 22.</i>										

In the descriptive analysis, while noting that the third research objectives is to, establish the effectiveness of Human Resources Management involvement in change management and administration in the human resources development of the organization within the pre and post chartered era of the organization. Therefore, from the table 17 above indicates a correlation coefficient of 0.745 which shows that the Ha3 is accepted here as there is a slightly high relationship between leadership style and Organizational effectiveness. The F-ratio (12.142) and the P-value of (0.71) suggest that leadership style play a key role in human resource development most especially in the post chartered era of the organization due to the introduction of management information system. The leadership style of NIM managers enhanced the introduction of management information system which led to human resources development, thus increasing Organizational effectiveness of the Nigerian Institute of Management.

This change further aligns with the existing theory of planned behavior where a behavioral model assists us in understanding how the behavior of people can change (Ajzen, 1991). Deliberate plans such as improvement of training and health and safety measures, provision of various information technology facilities, provision of digital equipments were considered under the post-chartered era while plans such as change in human resource was mainly considered during the pre-chartered era. The finding implies that the Ho3 is fully rejected here and further suggests that one positive unit change in use of human resource management system led to a change in new decision plans for the estimated rate of standard error is 0.66728. This confirms the positive effect of human resource management system on change management by leadership effectiveness in executing new decision plans.

However, the prevailing environment at the Nigerian institute of Management during the pre and post chartered era also lead to Bastedo's (2004) literature called the Open system theory. For the theory is said (literature review from chapter 2) to be relevant to the study since it displays how the pre-chartered era of the institute negatively influences the effectiveness of NIM. Also it shows how the post-chartered era of the institute influences the effectiveness of NIM. Keeping in mind that the institute's different eras are the environment.

**Research Question Four: How did the emergence of information technology boost management information systems on organizational effectiveness in human resources development in the post chartered era of the organization?**

Ho4): There is no significant relationship between the emergence of information technology boost in management information systems on the organizational effectiveness of the Nigerian Institute of Management's post chartered era in human resources development.

Ha4): There is a significant relationship between the emergence of information technology boost in management information systems on the organizational effectiveness of the Nigerian Institute of Management's post chartered era in human resources development.

**Table 18**

*Analysis of emergence/boost of information technology*

Model	R	R square	Adjusted R Square	Std Error of Estimate	Change Statistics					Durbin Watson
					R Squared Change	F change	df1	df2	Sig F change	
1	.695a	0.89	0.83	0.69728	0.645	10.142	1	90	0.81	1.924
<i>a. Predictors: (Constant), emergence of information technology</i>										
<i>b. Dependent variable: organizational effectiveness</i>										
<i>Source: SPSS version 22</i>										

In the descriptive analysis, while noting that the fourth research objective is to, determine if the boost in information technology is meant for improving management information systems in human resources development for organizational effectiveness at the post-chartered era of the organization. Therefore, from the table 18 above indicates a correlation co-efficient of 0.695 which shows that the Ha4 is accepted here as there is a high relationship between emergence of information technology and Organizational effectiveness. The F-ratio (10.142) and the P-value of (0.81) suggest that the Ho4 is rejected here as the emergence of information technology enhanced management information systems, thus leading to increased organizational effectiveness in human resource development in the post chartered era of the Nigerian Institute of Management.

The quest for better competitiveness and staying afloat with modern operational standards lead to the proper identification of where an organization is and where it intends to be in future. This agrees with the existing literature of “gap analysis” model where Obloj and

Chapron (2011) stresses on the need for better competitive race to develop and acquire superior resources to their competitors or close any resource gap. The need assessment introduced supply chain progression in a bid to tackle the identified gaps. This supply chain was also necessitated by the need for sustainable development and this is further orchestrated by the need for innovations which is also in line with the existing theory of innovation where Rogers' (1995) stated that, Diffusion of Innovation (DOI) theory is a popular model used to explain user adoption of new technologies.

Hence based on the result of the findings, it is evident that the boost or emergence in information technology has a positive effect on new product performance and on organizational effectiveness of NIM. Thus, further aligns with the fourth research objective and accepts the alternate hypothesis Ha4.

**Research Question Five: How are the roles of the advanced technological infrastructure in executive decision making and business services impacting management information systems effectiveness in the post chartered era of the institute's human resources development?**

Ho5): There is no significant relationship between the impact of the roles of the advanced technological infrastructure in executive decision making and business services with respect to management information systems on organizational effectiveness in the post chartered era of the Nigerian Institute of Management's human resources development.

Ha5): There is a significant relationship between the impact of the roles of the advanced technological infrastructure in executive decision making and business services with respect to management information systems on organizational effectiveness in the post chartered era of the Nigerian Institute of Management's human resources development.



**Table 19*****Analysis of Advanced Technological Infrastructure***

Model	R	R square	Adjusted R Square	Std Error of Estimate	Change Statistics					Durbin Watson
					R Squared Change	F change	df1	df2	Sig F change	
1	.734a	0.83	0.77	0.69658	0.75	14.142	1	90	0.68	1.724
<i>a. Predictors: (Constant), advanced technological infrastructure</i>										
<i>b. Dependent variable: organizational effectiveness</i>										
<i>Source: SPSS version 22</i>										

In the descriptive analysis, while noting that the fifth research question is to, identify and establish the roles of advanced technological infrastructures meant for executive decision making and business services impacting management information systems' effectiveness in the post-chartered era of the institute's human resources development. Therefore, from the table 19 above, it indicates a correlation co-efficient of 0.734 which shows that the Ha5 is accepted here as there is a high relationship between advanced technological infrastructure and Organizational effectiveness. The F-ratio (14.142) and the P-value of (0.68) suggest that advanced technological infrastructure enhanced management information systems, thus leading to increased organizational effectiveness in human resource development in the post chartered era of the Nigerian Institute of Management.

This increase in organizational effectiveness through advanced technological infrastructure in management information systems will further lead to the Davis (1989) acceptance of technology cited in the existing literature and known as Technological Acceptance Model (TAM) and the rewards are numerous to mention. The Ho5 is fully rejected here as the positive outcomes (rewards) such as balanced management decisions, timely delivery, digital payments and remote working and improved customer services will be enhanced. Therefore

based on the findings and previous work cited, it is safe to say the results showed that the acceptance of new technology is significant and also showed that the investment in advanced technological infrastructure has a positive impact on the management information system usage in NIM effectiveness. Thus, fully accepting the alternate hypothesis Ha5.

### Qualitative Analysis of Data

**Table 20**

*Bio Data Analysis (Interview and Focus Group Discussions)*

Details	Responses	Responses	Responses	Responses	Responses	Total
<b>Age</b>	Under 20years: <b>10</b>	20-30years: <b>26</b>	31-40years: <b>100</b>	41 years and above: <b>150</b>		<b>286</b>
<b>Gender</b>	Male: <b>150</b>	Female: <b>136</b>				<b>286</b>
<b>Working Experience</b> (Top Management Staff Only)	Below 5 years: <b>1</b>	6-10years: <b>7</b>	11-15years: <b>2</b>	16-20years: <b>1</b>	Above 20years: <b>1</b>	<b>12</b>
<b>Educational Qualification</b>	NCE/OND: <b>6</b>	HND/B.sc: <b>19</b>	M.sc/MBA : <b>175</b>	NIM/ACA/CA N: <b>80</b>	Others: <b>6</b>	<b>286</b>
<b>Position in the Organization</b> (For Top Management Staff Only)	Director: <b>2</b>	Assistant Director: <b>10</b>				<b>12</b>

<b>Duration of Membership (For NIM Members)</b>	Below 10 years: <b>13</b>	Above 10years: <b>11</b>				<b>24</b>
<b>Professional Grade (For NIM Members)</b>	Fellow: <b>12</b>	Member: <b>12</b>				<b>24</b>
<b>Role Carried Out (For External Stakeholders)</b>	Government Staff: <b>50</b>	Medical Practitioner: <b>50</b>	Media Practitioner : <b>50</b>	Legal Practitioner: <b>50</b>	Engineer: <b>50</b>	<b>250</b>

*Source: Field Work*

Retrieved:[https://docs.google.com/spreadsheets/d/1kq\\_BGuOIS\\_PnfLDZQ\\_aFa\\_DaBZh4emlaTgRZZEykyow/edit?usp=drivesdk](https://docs.google.com/spreadsheets/d/1kq_BGuOIS_PnfLDZQ_aFa_DaBZh4emlaTgRZZEykyow/edit?usp=drivesdk)

Results from table 20 showed that:

- **Age:** Out of 286 (250 interviews plus 36 focus groups) interviewees, 10 participants fall under 20 years below, 26 respondents fall within 20 to 30 years old, 100 participants fall within 31 to 40 years old, while 150 respondents fall within 41 years and above.
- **Gender:** There are 150 male participants and 136 female participants at the interview and focus group discussion sessions.

- **Working Experience:** Out of 12 top management staff of the institute, 1 participant have lesser years of experience (Below 5years), while 11 participants have moderate to high years of experience (Above 5years).
- **Educational Qualification:** A great number of participants have moderate to high educational background with 6 having NCE/OND credential, 19 having HND/B.sc credential, 175 having M.sc/MBA credential, 80 having professional certification, and 6 having other forms of educational certifications.
- **Position in Organization:** Out of the top management staff of the institute, 2 participants are directors, 10 are in other top managerial roles.
- **Duration of Membership:** Out of 24 interviewees, 13 have been members of the institute for less than 10years, while 11 have been members for more than 10years.
- **Professional Qualification:** Of the 24 interviewees, 12 are NIM fellows. The remaining are NIM Members.
- **Role Carried Out:** Based on the 250 interviewees, 250 participants (50each) are external stakeholders of NIM in engineering, media, medical, legal and government fields.

### **Qualitative interview report using Thematic Analysis**

The researcher made use of thematic analysis for analyzing qualitative data for both interview and focus group discussion. The indicator used to show how each variable varies in the qualitative data is the scale of 3points. The responses of participants are coded as follows: Very good (3), Satisfactory (2) and Quite fair (1). Meaning that the Very good response signifies “full acceptance” of questions asked while Quite fair response signifies a “less convincing” response or non acceptance of questions asked, while satisfactory response signifies “neutrality” so as to determine the credibility of themes (Fereday and Muir-Cochrane, 2006).

**Table 21***Qualitative interview report using Thematic Analysis*

<b>Interview Questions</b>	<b>Very Good Response (3)</b>	<b>Satisfactory Response (2)</b>	<b>Quite fair Response (1)</b>	<b>Total</b>	<b>Mean</b>
Do you have any knowledge about management information system before?	150(450)	60(120)	40(40)	250(610)	2.44
What do you understand by human resource development?	180(540)	20(40)	50(50)	250(630)	2.52
Is human resources development practiced in the organization?	160(480)	40(80)	50(50)	250(610)	2.44
Is MIS functional in NIM ?	140(420)	50(100)	60(60)	250(580)	2.32
What can you say about the pre and post chartered era of NIM?	180(540)	20(40)	50(50)	250(630)	2.52

Is the leadership style, structure & reengineering impactful on the effectiveness of human resource development?	170(510)	50(100)	30(30)	250(640)	2.56
Do you think there are any difference in the penetration of MIS in human resource development between the pre and post chartered era?	200(600)	5(10)	45(45)	250(655)	2.62

*Source: Field Work*

The table 21 above involves the interview analysis for external stakeholders.

The first question revealed a mean of 2.44 which is above the cutoff point of 2.00. This suggests that external stakeholders possess knowledge of management information system.

The second question showed a mean of 2.52 which is above the cutoff point of 2.00. This suggests that external stakeholders understood human resource development in the context of management information system.

The third question posted a mean of 2.44 which is above the cutoff point of 2.00. This suggests that external stakeholders affirmed that human resource developments are practiced in the institute.

The fourth question stated a mean of 2.32 which is above the cutoff point of 2.00. This suggests that external stakeholders affirmed that management information system is functional in NIM and other organizations.

The fifth question posted a mean of 2.52 which is above the cutoff point of 2.00. This suggests that external stakeholders have immense knowledge of pre and post chartered era of NIM and the developments that occurred in both eras.

The sixth question showed a mean of 2.56 which is above the cutoff point of 2.00. This suggests that external stakeholders affirmed that leadership style, structure and reengineering significantly affect the effectiveness of human resource development.

The final (seventh) question posted a mean of 2.62 which is above the cutoff point of 2.00. This suggests that external stakeholders affirmed that there exist differences in the penetration of management information systems in human resource development between the pre and post chartered era.

There were a lot of penetrations of management information system in human resource development in post chartered era than in the pre chartered era. Therefore, based on the analysis of the seven interview questions, it is safe to interpret that the management information system significantly impacts on the organizational effectiveness of the Nigerian Institute of Management. While, the findings from the responses of Focus group discussions ([https://docs.google.com/spreadsheets/d/1kq\\_BGuOIS\\_PnfLDZQ\\_aFa\\_DaBZh4emlaTgRZZEyk\\_yow/edit?usp=drivesdk](https://docs.google.com/spreadsheets/d/1kq_BGuOIS_PnfLDZQ_aFa_DaBZh4emlaTgRZZEyk_yow/edit?usp=drivesdk))

was tabulated in table 23 showing Focus Group Discussion Analysis using template themes for thematic analysis.

However it is worthy to note that these thematic codes originated from template analysis as according to Tracy (2013), template analysis uses hierarchical coding but balances both structural analysis using the thematic analysis style to develop the theme as it goes along, and with the flexibility to adapt despite some shortcomings. These challenges were also cited and elaborated by Symon and Cassell (2012). Therefore using theme style, below shows a table that describes the merits and demerits of using the Template Analysis Methods.

**Table 22**

*Merits and Demerits of using Template Analysis Technique for Analysing Qualitative data*

S/N	Merits	Demerits
1	Used mostly for data which is collected through individual interviews.	Cannot be used for research that requires more empirical studies and radical realistic research approaches.
2	The use of Template Analysis is not time consuming.	Requires a minimum of 15 to 30 Respondents.
3	More flexible to use which allows the Researcher to tailor the method according to what he wants.	May allow the researcher to miss out on key points during analysis due to the ease of flexibility and few strict policies and processes in developing the Template Analysis.



Thereby validating the mixed-method design sorted, as it was significant for it further allowed the variables to describe the sample such as demography and thus apart from analyzing the result, it further gave an idea of the characteristics of the respondent. Thus justifying the use of themes for qualitative analysis especially as the answers were set up in coded format or themes while the questions were constructed in line with the study's objectives. Hence, these created reliable predictions as the result of the analysis were most likely to relate to the research objectives/design and provide evidence to answers to the research questions (Saunders et al, 2009).

### **Focus Group Discussions (FGD) using Thematic Analysis**

The table 23 shows a tabulated transcript of the focus group discussion analysis for internal stakeholders (the Nigerian Institute of Management Members and Staff) and it was further explained below;

The first question posted a mean of 2.39 which is above the cutoff point of 2.00. This suggests that internal stakeholders have in-depth knowledge of human resource development and management information system.

The second question showed a mean of 2.69 which is above the cutoff point of 2.00. This suggests that internal stakeholders are aware of the existence of the pre and post chartered eras of the Nigeria Institute of Management and the associated developments that occurred in both eras as a result of introduction of management information system.

The final question posted a mean of 2.53 which is above the cutoff point of 2.00. This suggests that internal stakeholders affirmed that management information system significantly impacts organizational effectiveness of Nigeria Institute of Management in the context of human resource development.

**Table 23*****Focus Group Discussion Analysis***

<b>Focus Group Discussions and Questions</b>	<b>Very Good Response (3)</b>	<b>Satisfactory Response (2)</b>	<b>Quite Fair Response (1)</b>	<b>Total</b>	<b>Mean</b>
Have you heard about human resources development and management information systems? If yes, discuss.	20(60)	10(20)	6(6)	36(86)	2.39
Are you aware that there are pre&post chartered era of the NIM? If yes, discuss	30(90)	1(2)	5(5)	36(97)	2.69

What impact do MIS have on HRD in the effectiveness of the NIM?	25(75)	5(10)	6(6)	36(91)	2.53
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Therefore based on the focus group discussion analysis, it is also evidently safe to say that management information system significantly impacts on the organizational effectiveness of the Nigerian Institute of Management.

### **Evaluation of Findings**

This section reports what the findings means by evaluating the findings from quantitative and qualitative data analysis and reconnects with the research literature by referring back to the literature review in chapter 2 as well as the research objectives in Chapter 1 as a means of linking the result findings to the related research existing theory and objective.

Therefore from the findings, the Durbin Watson score for the five regression analysis tables (Table 15 to 19), their ranges fall within 1.5 to 2.5 which implies that the five independent variables significantly impacts on the organizational effectiveness of the Nigerian Institute of Management. Also, the p-value of the five regression analysis tables, their ranges fall below 0.1 margin of error which signifies that the five independent variables significantly impacts on the organizational effectiveness of the Nigerian Institute of Management while the R squared values from the five regression tables, which value ranges fall within 1 and 0 signifies that the regression models used are decent models thus, usable.

Furthermore from the research design/conceptual framework, Management Information System was measured under five dimensions which form the five research questions of the study

and the analysis of the results were evaluated as tabulated (where the quantitative data is presented on Table 24 while the qualitative data is presented on Table 25) with explanations.

### Quantitative Data Analysis Evaluation

**Table 24**

#### *Quantitative Data Analysis Evaluation*

Research Analysis on research questions	R	Decision Criteria	Sig F Change (Pvalue)	Decision Criteria	Durbin Watson	Decision Criteria	Final Decision
RA 1	0.534	R model should be within 0-1 for the model to be great and usable. However, values above 0.500 is 50% signifies that the independent variable significantly impacts 50% of the dependent variable. Thus, values above 0.500 indicates the IV have significant relationship with the dependent variable.	0.76	P-value is the margin of error used to check if the independent variable significantly impacts the dependent variable. P-value must be above 0.5 margin of error for the independent variable to significantly influence the dependent variable.	1.507	Durbin Watson score must be within 1.5 to 2.5 for the independent variable to have a significant relationship with the dependent variable.	Management Information System with reference to level of business operation significantly impacts organizational effectiveness as all parameters(P value, Durbin Watson score and R model) meet the decision Criteria.
RA 2	0.681	R model	0.84	P-value is	1.615	Durbin	Management

		must fall within 0-1 for the model to be great and usable. However, values above 0.500 representing 50% signifies that the independent variable significantly impacts 50% of the dependent variable. Thus, values above 0.500 indicates the independent variable have significant relationship with the dependent variable.		the margin of error used to check if the independent variable significantly impacts the dependent variable. P-value must be above 0.5 margin of error for the independent variable to significantly influence the dependent variable.		Watson score must be within 1.5 to 2.5 for the independent variable to have a significant relationship with the dependent variable	Information System with reference to reengineering the structure and extent of human resource penetration significantly impacts organizational effectiveness as all parameters (P-value, Durbin Watson score and R model) meet the decision Criteria.
RA 3	0.745	R model must be within 0 and 1 for the model to be useable. However, values above 0.500 representing 50% signifies that the independent variable significantly impacts 50% of the dependent	0.71	P-value is the margin of error used to check if the independent variable significantly impacts the dependent variable. P-value must be above 0.5 margin of error for the independent variable to significantly	1.994	Durbin Watson score must be within 1.5 to 2.5 for the independent variable to have a significant relationship with the dependent variable	Management Information System with reference to leadership style significantly impacts organizational effectiveness as all parameters (P-value, Durbin Watson score and R model) meet the decision Criteria.

		variable. Thus, values above 0.500 indicates the independent variable have significant relationship with the dependent variable.		influence the dependent variable.			
RA 4	0.695	R model must fall within 1 and 0 to be useful but values above 0.500 is 50% signifies that the independent variable significantly impacts 50% of the dependent variable. Thus, values above 0.500 indicates the independent variable have significant relationship with the dependent variable	0.81	P-value is the margin of error used to check if the independent variable significantly impacts the dependent variable.  P-value must be above 0.5 margin of error for the independent variable to significantly influence the dependent variable.	1.924	Durbin Watson score must be within 1.5 to 2.5 for the independent variable to have a significant relationship with the dependent variable	Management Information System with reference to emergence of information technology significantly impacts organizational effectiveness as all parameters (P-value, Durbin Watson score and R model) meet the decision Criteria.
RA 5	0.734	R model must be within 0 and 1. However, values above 0.500 representing 50% signifies that the independent variable	0.68	P-value is the margin of error used to check if the independent variable significantly impacts the dependent	1.724	Durbin Watson score must be within 1.5 to 2.5 for the independent variable to have a significant	Management Information System with reference to advanced technological infrastructure significantly impacts organizational effectiveness as all

		significantly impacts 50% of the dependent variable. Thus, values above 0.500 indicates the independent variable have significant relationship with the dependent variable.		variable. P-value must be above 0.5 margin of error for the independent variable to significantly influence the dependent variable.		relationship with the dependent variable.	parameters P-value, Durbin Watson score and R model) meet the decision Criteria.
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**Key; where** RA 1 represents regression analysis on levels of business operation.

RA 2 represents regression analysis on reengineering the structure and extent of human resource penetration.

RA 3 represents regression analysis on leadership style and change management.

RA 4 represents regression analysis on emergence of information technology.

RA 5 represents regression analysis on advanced technological infrastructure

Explained as follows;

**Research Question One: Level of business operation between the pre-chartered and post-chartered era.**

The analysis of level of business operation suggests that levels of business operation has a positive and a significant relationship with management information system drive in human resource development in pre chartered and within the post chartered era of the Nigerian Institute of Management at 5% level of significant. This suggests that the level of business operation with regards to management information system led to human resource development in pre chartered and post chartered era of the Nigerian Institute of Management.

This is in line with chartered literature review quote which agrees that the pre-chartered era is characterized by the Human Relations Theory where the early management services practice was mainly traditional and adaptive means of business transaction and human resource development was not yet at a competitive advantage (Frawley and Fahy, 2006). Muldoon (2012) further supported that human relation theory states that the relationship is the main factor that affects productivity. Productivity would increase because of the relationship between IT, workers and members of the organization. Also, this increased production leads to motivations which boost performance and limit disputes.

This also support the first research objective (RQ1) which was to compare the levels of business operation with regards to management information systems drive in human resources development during the pre and post chartered era of the organization. This anticipated 'change' supports the Resource Based Theory where change management is critical to the available human resources processes planned and this is also in line with the second research objectives and questions.

### **Research Question Two: Reengineering the structure and extent of human resource penetration**

The analysis of re-engineering the structure and extent of human resource penetration suggest that the extent of management information systems penetration in human resource development vary in the pre and post chartered era of Nigeria Institute of Management. The penetration of management information system in human resource development was high at post chartered era compared to pre chartered era of the Nigerian Institute of Management.



The re-engineering process, structures paves way for change management which were also in line with the Resource Based Theory for it is expected that an organization that has adequate financial resources would have more influence on the organizational effectiveness by successful leadership programs and change management implementations. This theory was also relevant to the findings as it relates to the second research objectives (RO2) which is to assess the major differences (leadership style, structure & re-engineering) in human resources development and the third research objectives (RO3) which was to establish the effectiveness of change management and administration in the human resources development.

Thus, the findings were expected due to the re-engineering institutional steps driven by managers for the growth and stability which leads to organizational effectiveness.

### **Research Question Three: Leadership Style and Change Management**

In addition, the analysis of leadership style and change management suggest that leadership style play a key role in human resource development most especially in the post chartered era of the organization due to the introduction of management information system. The leadership style of NIM managers enhanced change in management which aligns with the introduction of management information system that led to human resource development, thus increasing Organizational effectiveness of the Nigerian Institute of Management.

This is in line with the theory that predicts deliberate behavior also known Theory of planned behavior. The leadership style and change in management framework gives room for this behavioral change. Thus, this theory was relevant to the findings especially on research objective - RO1 which was to compare the level of business operation in management

informative systems drive on human resource development as behavioural beliefs usually result in a favourable or unfavourable attitude towards change management.

Also, the greater the impact of management information systems, the more favourable behavior is noticed towards organizational effectiveness and this also affects the environment.

#### **Research Question Four: Emergence of Information Technology**

Furthermore, the analysis of emergence of information technology suggest that emergence of information technology enhanced management information systems, thus leading to increased organizational effectiveness in human resource development in the post chartered era of the Nigerian Institute of Management. The environment which the Nigerian institute of Management is highly influenced by this influx of information technology in its business operations as it improves in its deliverables, which leads to another existing theory (previously mentioned in chapter 2) known as Open systems theory. Thus, also in line with Bastedo's (2004) observation that, although there is a great variety in the perspectives provided by open systems theories, they also share the perspective, that an organization's survival is dependent upon its relationship with the environment.

Here the organization (NIM) is influenced by the environment which necessitates the change administered from the post-chartered era and the improved delivery of business services corresponds with the principles of open systems theory. Thus, further justifies the support of this existing theory on the research findings. Another likely scenario in a situation where the human resources/change management is made to reflect on who they are or what they are doing and ask themselves what they want to be or do in future is known as gap analysis model. This boost in technology or emergence of information technology can also be linked to when the Nigerian

institute of Management moved from pre-chartered phase to a post-chartered phase administratively human resource management is faced with decision on how to effectively change operational policies and inputs in-order to meet up with modern standards. Thus also, justifies the support of a second existing literature - Gap Analysis Model on the research findings.

Once these gaps have been identified, the re-analysis of why they exist and what can be done leads to another theory called 'Diffusion of Innovation Theory'. Rogers' (1995) described innovation as an idea or object that is perceived to be new. This diffusion theory was relevant to the study because it explains the direction where the organization intends to go or be and that is to adopt technical innovations. One of the reasons why NIM will adopt technical innovations is stay relevant in the industry and improves performance. This means that organizational effectiveness can also be achieved. This is highly noted in research objectives 4 which was to determine if the boost in information technology is meant for improving management information systems in human resources development for organizational effectiveness at the post-chartered era of the organization and research objectives 5 which was to identify and establish the role of advanced technological infrastructures meant for executive decision making and business services impacting management information systems' effectiveness in the post-chartered era of the institute's human resources development (RO 4 & RO 5).

The perceived useful and subsequent adoption of these new technological innovations lead to the other variable and objective; the advanced technological infrastructures.

### **Research Question Five: Advanced Technological Infrastructure**

Finally, the analysis of advanced technological infrastructure suggest that advanced technological infrastructure enhanced management information systems, thus leading to increased organizational effectiveness in human resource development in the post chartered era of the Nigerian Institute of Management. Based on the analysis carried out through regression technique with the aid of SPSS version 22, it is interpreted that management information system have a positive significant relationship with organizational effectiveness of Nigeria Institute of Management. Thus, the introduction of management information system will immensely improve the organizational effectiveness of the institute and this is in line with Davis (1989) who presented a theoretical model aiming to predict and explain Information and Communication Technology usage behavior, that is, what causes potential adopters to accept or reject the use of information technology.

This is known as the Technological Acceptance Model (TAM) and this existing literature was relevant to the findings because it explained why organizations accepts and adopts technology. (Thus, also in-line with research objectives 4 and 5- RO4 and RO5) and this is because of perceived usefulness and perceived ease of use of technology by management information systems on NIM's effectiveness. Furthermore it is worthy to note that, by the interpretation of the continuous acceptance of technologies; it will strengthen the organizational effectiveness and also pave way to another existing literature known as the Unified theory of Acceptance and the Use of Technology (UTAUT).

Hence, this result is very much expected due to NIM's change from traditional means of business operations (pre-chartered era) to the modern use of technology (post-chartered era) and its general acceptance.

## Qualitative Data Analysis Evaluation

Table 25

### *Qualitative Data Analysis Evaluation*

Research Questions	Mean	Acceptable Mean(Cutoff mark)	Decision
<b>Interview Analysis</b>			
Do you have any knowledge about management information system before?	2.44	> or = 2.00	External Stakeholders possess knowledge about management information system which further validates the study.
What do you understand by human resource development?	2.52	> or = 2.00	External stakeholders have in-depth knowledge of human resource development which further validates our study.
Is human resources development practiced in the organization?	2.44	> or = 2.00	External stakeholders affirmed that human resource development are practiced in the Nigerian Institute of Management.
Is management information system functional in the organization?	2.32	> or = 2.00	External stakeholders noted that management information system is functional in the Nigerian Institute of Management.
What can you say about the pre and post chartered era of NIM?	2.52	> or = 2.00	External stakeholders are aware of the prepost chartered era of NIM.
Is the leadership style, structure and reengineering impactful on the effectiveness of human resource development?	2.56	> or = 2.00	External stakeholders affirmed that management information system with respect to leadership style, structure and

			reengineering impacts organizational effectiveness of the Nigerian Institute of Management.
Do you think there are difference or so in the penetration of management information system in human resource development between the pre and post chartered era?	2.62	> or = 2.00	External stakeholders confirmed that there are differences in the penetration of management information system in human resource development between the pre and post chartered era. This implies that management information system significantly impacts organizational effectiveness with reference to human resource development more in the post chartered era than the pre chartered era of the Nigerian Institute of Management. Therefore, we can see that management information system significantly impacts organizational effectiveness of the Nigerian Institute of Management.
<b>Total</b>	<b>17.42</b>	<b>&gt; or = 14.00</b>	Based on our analysis with our overall mean of 17.42 exceeding the acceptable mean of 14.00, we therefore can see that Management Information System significant impact organization

			effectiveness of the Nigerian Institute of Management.
<b>Focus Group Discussions</b>			
Have you heard about human resource development and management information system? If yes, discuss.	2.39	> or = 2.00	Internal stakeholders possess in-depth knowledge about human resources development and management information system.
Are you aware that there are pre and post chartered era of the Nigeria Institute of Management? If yes, discuss.	2.69	> or = 2.00	Internal stakeholders affirmed knowledge of pre and post chartered era of the Nigerian Institute of Management.
What impact do management information system have on human resource development in the effectiveness of the Nigerian Institute of Management?	2.53	> or = 2.00	Internal stakeholders affirmed that management information system significantly impacts effectiveness of the Nigerian Institute of Management. This confirmed that the five dimensions of management information system (see research objectives and questions) significantly impacts organizational effectiveness with reference to the Nigerian Institute of Management.

<b>Total</b>	<b>7.61</b>	<b>&gt; or = 6.00</b>	Internal Stakeholders affirmed that management information system have a positive significant relationship on organizational effectiveness of the Nigerian Institute of Management as the mean of focus group discussion 7.61 exceeds acceptable mean of 6.00.
<b>Overall Total</b>	<b>25.03</b>	<b>&gt; or = 20.00</b>	Based on the interview and focus group discussion analysis, hence it's safe to say that management information system significantly and positively influences Organizational effectiveness with reference to the Nigerian Institute of Management.

### **Transcription of Qualitative Result and Evaluation**

The qualitative data were generated through focus group discussion and interviews. Thus, the audio speeches from zoom video interviews were recorded and subsequently arranged into printed form as readable and written text in order to enable it accessible to all. Hence, the qualitative result of the study was transcribed from its coded theme format (using thematic



analysis). As previously mentioned the responses of participants were coded as follows: Very good (3), Satisfactory (2) and Quite fair (1).

Where Very good response signifies full acceptance of questions asked while Quite fair response signifies a less convincing response or non acceptance of questions asked, while Satisfactory response signifies neutrality. The use of Microsoft Word and Excel was predominantly employed to develop the qualitative data of the focus group and interviews from the responses using codes and stored as final coding frame. However due to the large data and the time involved in the research, the researcher complemented the use the traditional thematic analysis with the modern use of NVivo 12 software to autocode its themes on the final coding of the qualitative data consisting of interview transcripts and focus group materials (Richard, 1999). Thus, saving a lot of time, energy and cost which would have been used in getting a research assistant (if necessary) for 600 respondents.

Where demographics, educations, qualifications and other relevant research questions were created into theme folders and grouped on a thematic scale of 1-3. The majority of the very good response (3) indicates that the statement from the respondent was in support that management information system significantly impacts organizational effectiveness of the Nigerian Institute of Management while satisfactory response (2) denotes that the statement from the respondent was neither in support nor against (neutrality) that management information system impacts organizational effectiveness of the institute. Noting also that the majority of the quite fair responses (1) showed that the statement from the respondent was in support that management information system do not significantly impact organizational effectiveness of the institute.

The qualitative analysis indicated focus group discussion and interviews had totals of 25.03 and 17.42 respectively which fell within 20.00 for focus group discussion and 14.00 for interviews. Thus, this indicates that management information systems significantly impacts organizational effectiveness of the Nigerian Institute of Management. Thus, on the qualitative data result evaluation, the research questions were further evaluated through conduct of interviews with external stakeholders and focus group discussion with internal stakeholders. Results from focus group discussion suggest that internal stakeholders affirmed that management information system significantly impacts organizational effectiveness of the Nigerian Institute of Management in the context of human resource development. In addition, the external stakeholders affirmed that there exist differences in the penetration of management information systems in human resource development between the pre and post chartered era.

There were a lot of penetrations of management information system in human resource development in post chartered era than in the pre chartered era. This was attributed to the introduction of management information system which led to increased organizational effectiveness. Bearing in mind that in a qualitative study, the interest is more on feelings, thoughts, beliefs and behaviors thus, the underpinning existing literature to this findings is the Theory of Planned Behavior where there is a general understanding that people's behavior can be changed. This perceived change from the findings, is also in line with the qualitative rate of diffusion also known as Diffusion of Innovation Theory and the adoption of new ideas is influenced by how much better it is, how easy it is to use, how well it fits with the existing practices, how easy it is to try and how visible its benefits are.

Hence, the general acceptance of the qualitative data findings leads to the planned-possible implementation, which is linked to another existing literature (and the theoretical aspect

of Technology Acceptance Model - TAM) known as “Theory of Reasoned Action” (TRA). Apart from the possible implementation of research findings, the Reasoned Action also acts in compliance with the interpretation and explanation of findings. Therefore, based on the focus group discussion and interview analysis, it is satisfactory safe to interpret that management information system significantly affects organizational effectiveness of the Nigerian Institute of Management.

### **Summary of the Research Findings Section**

This chapter of the study emphasized on data presentation, analysis and interpretation. The study aimed at assessing the impact of management information on organizational effectiveness using the Nigerian Institute of Management as a case study. The study also made use of mixed method which involves use of quantitative and qualitative data to effectively analyze the impact of management information systems on organizational effectiveness of Nigeria Institute of Management in the context of human resource development. Reliability of the instrument was sorted here using test and re-test method to determined the authenticity of acceptance ( $H_a$ ) or rejection ( $H_o$ ) for the quantitative data while the qualitative data was obtained through pilot oral interviews and focus group discussions.

The mixed method approach used here is the sequential research approach where the quantitative data will be analyzed first (as the big “Q” with more population and data analysis) then closely supported with the qualitative data (as the small “q” with a lesser population and data analysis). The quantitative data was collected through the use of questionnaire while qualitative data were collected through the interview and focus group discussion. According to Kariuki (2015), a response rate of 50 percent is adequate for analysis and reporting, whereas a

rate of 60 percent is good and a rate of 70 percent and above is excellent. Hence, in this case a total of 1,000 questionnaires were distributed to internal and external stakeholders via online - Google form and 500 questionnaires were retrieved and used for data analysis (representing 50% of the sample were retrieved which was considered sufficient and representative as satisfactory). While noting that, the retrieved questionnaires served as the quantitative data of the study. 250 external stakeholders were interviewed (representing 83.33% of the sample size, thus, the responses number were also considered sufficient and representative as highly satisfactory as it was above the saturated point) and 36 internal stakeholders attended the focus group discussion.

Thus, the retrieved interview sheets and group discussion served as the qualitative data's of the study. From the research questions (RQ), null ( $H_0$ ) and alternate ( $H_a$ ) hypothesis were tested here. Bearing in mind that Kariuki (2015) further stated that in the hypothesis, whether one factor can either be controlled or not which is impacting on a portion of the business further suggest performing a regression analysis to determine how relevant the hypothesis is. Therefore, hypothesis testing was carried out on the research questions and regression analysis was further used to analyse the quantitative data. This quantitative data were analyzed using the multiple regression analysis through the Statistical Package for Social Sciences (SPSS) technique while qualitative data were analyzed using thematic analysis.

The validity and reliability of data was ensured to guarantee the trustworthiness of the data. In this regards, the variability of scales adopted the conceptual framework (dependent and independent variables) while using likert scale to determine, interpret and evaluate the participants' responses. Descriptive analysis was also involved using relevant and existing research literatures such as a Human Relations Theory, Resources Based Theory, Theory of Planned Behaviour/Open System Theory, Gap Analysis Model/Diffusion of Innovation

respectively to link with the five research objectives when trying to interpret and analyze the five research questions. On the quantitative data, the key decision (criterion) from the regression tables namely the Durbin Watson, P value (F-change) and R value from the independent variables shows significant impact on the organizational effectiveness (dependent variable) of the Nigerian Institute of Management which is usable while from the qualitative data, the full acceptance (very good scale of 3) from the thematic analysis was more than average.

Meaning that, the mixed data results revealed that management information system significantly impacts on the organizational effectiveness of the Nigerian Institute of Management. Thereby noting that, the study findings are in line with some of the studies in the literature. In previous studies, Lee (1994) found that the emergence or boost in information technology has shown significant positive impact on organizational effectiveness thus, enhances productivity. This agrees with the statement that utilization and advancement of technological tools/infrastructure has an important influence on the organization's effectiveness through management information systems and all of its elements including people, culture, structure, process and tasks (Leavitt and Pondy, 1964).

In conclusion, the next chapter will give a thorough overview of the major findings in relation to the discussions of the findings, the study's implications, conclusions, recommendations, and possible directions for future research.

## **CHAPTER 5: IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSIONS**

### **Introduction**

Recall that, it was previously mentioned in chapter one that the transition from a manual means to an automated means of transacting business has its impact on the effectiveness of an organization to achieve her goals. Notably, the case study which is the Nigerian Institute of Management (NIM), is a regulatory multidisciplinary professional body faced with this transitional challenges from the pre-chartered era to the post-chartered era of business operations. Thus, these challenges as well as the identified research and methodological gaps necessitated the need for this research which is aimed at bridging the existing gaps through the integration of management information system in NIM operations in-order to enhance organizational effectiveness. Hence, the study sought to establish the impact of management information systems on the effectiveness of the Nigerian Institute of Management (case study).

This chapter presents the further discussions of evaluation by the implications of major findings of the study, relevant discussions on the conclusion(s) and the necessary recommendations. The findings will be discussed using the study's sequential mixed method approach where the quantitative data will be accessed first then closely supported by the qualitative data in order to properly address the research questions. The implications of key findings from the questions, hypothesis, conclusions and recommendations will be supported with the study's literature review and they will also be done in line with the relevant framework (variables) as well as the research objectives of the study based on the output of the descriptive analysis guided to test the study's research questions.

Notably and by implications, answering the research questions is aimed at filling the identified research gaps (Chapter one, two and three) which are supported by the study's literature review (Chapter two) and research hypothesis.

### **Implications of the Study**

Therefore by implication, after analyzing our findings from the view of other literatures, this study indicate to have filled in the research gaps by answering the research questions (through aligning them with the research objectives and existing theories) and adding to the research world knowledge bank by proposing a framework as a guide in relation to the impact of management information system on organizational effectiveness in human resources development while using the Nigerian Institute of Management as a case study.

### **Quantitative Data Research Questions Implications and Filling of Research Gaps**

The analysis from the returned questionnaires to examine the impact of Management Information System on Organizational Effectiveness of the Nigerian Institute of Management was aligned with the research design in this section and fully discussed.

From the research design, the conceptual framework which consists of the five independent variables (IV) were linked to the dependent variable (DV) and five research objectives respectively and this was used to answer the research questions. The five dimensions of variables on the research questions and the research objectives are designed proportionally to interpret analysis done by determining the use of Management Information systems at the Nigerian Institute of Management for organizational effectiveness and this is illustrated as follows;

**Research Question One (RQ1): What were the levels of business operation with regards to management information systems drive in human resources development in the pre-chartered and within the post-chartered era of the organization? – Answering Research question 1**

By implication theoretically, to tackle this research question 1, a conceptual framework was developed in Chapter 2 and follows by a thorough review of the pertinent literature which also supports the research objective. The framework and the variables behind this are the:

***Pre-Chartered Era (Outdated level of operations-IV1) and Post-Chartered Era (modern leadership styles-IV3) on Organizational Effectiveness (DV)***

The first research objective (RO1) was to compare the levels of business operation with regards to management information systems drive in human resources development during the pre and post chartered era of the organization. By implications from the results of the findings (Chapter 4) indicated that the pre-chartered era had a negative impact on the organization's (the Nigerian Institute of Management) as a result of the "primitive mode" characterized by adaptive and traditional means of transacting business operations.

This was also characterized by the paternalistic style of management also known theoretically as the Human Relations Theory. This supports the existing literature that cites that the paternalistic nature of this theory caters for all as it was evident in the traditional pre-chartered era of NIM where the use of man-made machines to fast better business operations was not in existence rather the real use of man to generate all business tasks was popular and the wearing out effect was one of the challenges of this study. Thus, also supports the Human Relations Theory of motivation in the workplace that believes that people desire to be part of a supportive team that facilitates development and growth (Levitt and List, 2011).



This introduction of new technologies for NIM effectiveness is evident from the findings which suggest that levels of business operation has a positive and a significant relationship with management information system drive in human resource development in pre chartered and within the post chartered era of the Nigerian Institute of Management at 5% level of significant. Implying that at post-chartered era, productivity will increase because of the relationship between information technology, workers and members of the organization. Also, this increased production leads to motivations which boost performance and limit disputes. As demonstrated by Muldoon (2012) who cited that, human relation theory states that the relationship is the main factor that affects productivity.

This post-chartered era's impact on organizational effectiveness can also be linked to the Open System existing literature where the organization is highly influenced by the environment and its technology. This is demonstrated by the improved technological infrastructure and the use of man-made computers to process information better. Hence by implication of Open System Theory, the Institutional theorists see organizations as a means by which the societal ways are embedded in workforce structure and expressed in organizational change. This change is evident from the results which has a more significant increase of business operations during the modern post-chartered era than the outdated post chartered era.

Notably, the Nigerian institute of Management has invested in management information system as a means to acquire ease of life and ease of doing business smoothly. Therefore, the result is expected and relevant for this study since it tackles the research problem by highlighting on the research purpose and the conceptual framework (using the first and third independent variable) by showing sufficient contributions to the data analyzed and the existing literatures.

**Research Question Two (RQ2): What are the major differences in the re-engineering with respect to the extents of management information systems penetration in human resources development in the pre and post chartered era of the organization? – Answering Research question 2**

By implication theoretically, to tackle this research question 2, a conceptual framework was developed in Chapter 2 and follows by a thorough review of the pertinent literature which also supports the research objective. The framework and the variables behind this are the:

*Human Resources and Change Management (Reengineering the structures of human resources management -IV2) on Organizational Effectiveness (DV)*

The second research objective is to assess the major differences in re-engineering with respect to the extent of Management Information Systems penetration in human resources development within the pre and post chartered eras of the organization. By implications from the result of the findings (Chapter 4) indicated that the penetration of management information system in human resource development was high at post chartered era compared to pre chartered era of the Nigerian Institute of Management.

As earlier mentioned, the pre-chartered era was characterized by outdated means of business operations and this lead to slow pace of operations and human fatigue that affected the organization's (NIM) effectiveness. Hence, the Nigerian Institute of Management (NIM) had to put on their thinking caps in a bid to transact operations smoothly and healthy by re-engineering its workplace structurally and facility-wise. The re-engineering processes involved in converting the old method of operations into a modern means of operations as this became necessary with the gradual emergence of technology to achieve smooth business operations.

This change management from the pre-chartered era to the post-chartered era also highlighted the importance of human resource management as it became pivotal essentially for ensuring the right people are handling the required services to achieved organizational goals. This supports Peter Drucker (2003) who stated that management is the process of putting resources together in the right proportion to achieve a profitable goal. This is in line with the Resource Based Theory in the existing literature for it is expected that an organization that has adequate financial resources would have more influence on the organizational effectiveness by successful leadership programs and change management implementations (Wade & Hulland, 2004).

Practically, the re-engineering processes necessary for change management are institutional steps driven by managers for the growth and stability which leads to organizational effectiveness and this inevitable in the post-chartered era without necessary funding. Thus, this result is expected as it aligns with the second research objective (RO2) as well as is relevant to the study for it was adopted in order to accommodate funds or resources meant for human resource development that increases the growth and productivity as evidently seen from the result on the post-chartered era. Also, when change management is achieved, it will tackle the research problem by ensuring organizational effectiveness through the impact of these newly introduced management information systems processes.

**Research Question Three (RQ3): What were the leadership style effect and interactive effects of Human Resources Management on organizational effectiveness in human resource developments in the pre and post chartered era of the organization? - Answering Research question 3**

By implication theoretically, to tackle this research question 3, a conceptual framework was developed in Chapter 2 and follows by a thorough review of the pertinent literature which also supports the research objective. The framework and variables behind this is the;

***Post-Chartered era (modern leadership styles - IV3) on Organizational Effectiveness (DV)***

The third research objective is to establish the effectiveness of Human Resources Management involvement in change management and administration in the human resources development of the organization within the pre and post chartered era of the organization. By implications from the result of the findings, it indicates a high correlation co-efficient that there is a slightly high relationship between leadership style effectiveness and Organizational effectiveness.

Further suggesting that leadership style, plays a key role in human resource development most especially in the post chartered era of the organization due to the introduction of management information system. The change in leadership of NIM managers and their processes enhanced the introduction of management information system which led to human resources development, thus increasing Organizational effectiveness of the Nigerian Institute of Management. As previously mentioned in Chapter 2 (two), the human resources/ change management is characterized by the need to improve business services and maintain a competitive advantage in the industry. The process involves improving leadership styles, restructuring and re-engineering in the extent of Management Information Systems penetration. Thus, this planned awareness and quest in the change in leadership style aligns the existing literature known as Theory of Planned Behaviour, where a behavior model assist us in understanding how people's behavior can change.

Here the organization (NIM) is also influenced by the environment which necessitates the change administered from the pre-chartered era to the post-chartered era and the improved delivery of business services corresponds with another existing literature previously mentioned known as the principles of “open systems theory”. Thus, this result was expected as it aligns with the both the second research objective (RO2) and the third research objectives (RO3) as well as is relevant to the study for it was adopted in order to indicate the beginning of technological inputs in the Nigerian Institute of Management business services when the organization became chartered and its operations had to be competitive with international standards. Also it bridges some of the identified research gaps as there aimed to be, improved training and development as well as better health and safety standards.

**Research Question Four (RQ4) : How did the emergence of information technology boost management information systems on organizational effectiveness in human resources development in the post chartered era of the organization? – Answering Research question 4**

By implication theoretically, to tackle this research question 4, a conceptual framework was developed in Chapter 2 and follows by a thorough review of the pertinent literature which also supports the research objective. The framework and variables behind this is the;

***Emergence/Boost in Information Technology (IV4) on Organizational Effectiveness (DV)***

The fourth research objective was to determine if the boost in information technology is meant for improving management information systems in human resources development for organizational effectiveness at the post-chartered era of the organization. By implications from the result of the findings (Chapter 4), it showed a correlation co-efficient which indicates that there is a high relationship between emergence of information technology and Organizational effectiveness.

Furthermore from the results, the respondents agreed that the emergence of information technology (from RO4 and RQ5) actually enhanced management information systems, which leads to increased organizational effectiveness in human resource development in the post chartered era of the Nigerian Institute of Management. This increase in technology further prompted the plan of how to conduct business safely and ensure that the business conducted is in alignment with modern business practices. Therefore the institute/organization had to compare business operations of the pre-chartered era with that of the post-chartered era and the future plans. Thus, this leads to another existing literature known as “Gap Analysis Model” (GAM) or need assessment which Jannetti (2012) earlier defined as a systematic process of gathering information that is appropriate to develop an effective educational program that will address the needs and wants (gap). This further supports the development of innovation programs as the bedrock and future of the organizational plans or goals.

Thereby implying that, the organization intends to stay afloat with current and modern technologies for business services through the innovation of new technologies. This innovation of new technologies supports another existing literature known as Diffusion of Innovation Theory. The result was expected as it aligns with the three research objective namely (RO3), the third research objective (RO3), the fourth research objectives (RO4) and the five research objective – RO5 (to be discussed in the next research questions and its implications below) as well as is relevant to the study for it was adopted because it encourages adequate human resources developmental programs where it explains the direction which the organization intends to be or go in this case, is to adopt new technologies for business developments and growth.

Also it bridges some of the identified research gaps as the investment in new technologies will not only boost information technology on management information systems but it will also

improve business developments and growth of the organization. Thus, enhances organizational effectiveness.

**Research Question Five (RQ5) : How are the roles of the advanced technological infrastructures in executive decision making and business services impacting management information systems' effectiveness in the post-chartered era of the institute's human resources development? – Answering Research question 5**

By implication theoretically, to tackle this research question 5, a conceptual framework was developed in Chapter 2 and follows by a thorough review of the pertinent literature which also supports the research objective. The framework and variables behind this is the;

***Advances in Technological Infrastructures for Management Information Systems (IV5) on Organizational Effectiveness (DV).***

Finally, the fifth and the last research objective is to identify and establish the roles of advanced technological infrastructures meant for executive decision making and business services impacting management information systems' effectiveness in the post-chartered era of the institute's human resources development. By implications from the results of the findings (Chapter 4), it suggests that advanced technological infrastructure enhances management information systems, thus leading to increased organizational effectiveness in human resource development in the post chartered era of the Nigerian Institute of Management. Based on the analysis carried out through regression technique with the aid of SPSS version 22, it was interpreted that management information system have a positive significant relationship with organizational effectiveness of the Nigerian Institute of Management.

Further implying that the Nigerian Institute of Management is investing in a user-friendly management information system which assist to reduce administrative costs and enured

compatibility with other systems. In addition, the participants agreed that the firm's MIS could adapt to support its growth. The MIS has also played a vital role in providing new customer services and has helped employees improve their performance and productivity. Thus, promoting organizational effectiveness. Thereby further aligning with the existing literature which was tailored to meet with advanced information technology research needs and this is known as the Technology Acceptance Model (TAM) where the behavior is explained on what causes potential adopters to accept or reject the use of information technology. The full acceptance also leads to Venkatesh (2003), who integrated with other models in the field of technology acceptance to introduce the Unified Theory of Acceptance and Use of Technology (UTAUT). Despite its wide use, TAM has often been criticized as (Chuttur, 2009) suggest that TAM has diverted researchers' attention away from other important research issues and has created an illusion of progress in knowledge accumulation. This double standard is not unexpected as the principle of TAM and also the null ( $H_0$ ) and alternate hypothesis ( $H_a$ ) where the decision making process is designed to either accept or reject new information technologies.

Thus, also in-line with research objectives 4 and 5- RO4 and RO5 and this was because of perceived usefulness and perceived ease of use of technology by management information systems on NIM's effectiveness. Hence, this result was very much expected due to NIM's change from traditional means of business operations (pre-chartered era) to the modern use of technology (post-chartered era) and its general acceptance of new and advanced information technology to enhance its organizational effectiveness. Thus the  $H_a$  alternate hypothesis is shows significant impact of management information system on NIM's effectiveness and is accepted while aligning with existing literature theory of the Unified Theory of Acceptance and Use of Technology (UTAUT) for its continuous adoption and investments.



Also by implication, it is relevant to the study as the perceived acceptance of newly and advanced technological infrastructure will bridge the research gaps by improving its technical abilities and lead to modernization or digitalization of the organization business services. This will also inevitably enhance organizational effectiveness.

**Table 26**

***Quantitative Data Hypothesis Result Implications***

<b>Research Hypothesis</b>	<b>HO1</b>	<b>HO2</b>	<b>HO3</b>	<b>HO4</b>	<b>HO5</b>
Model	1	1	1	1	1
R	.534a	.681a	.745a	.695a	.734a
R Square	0.64	0.63	0.69	0.89	0.83
Adjusted R Square	0.75	0.62	0.59	0.83	0.77
Std error of estimate	0.79565	0.75694	0.66728	0.69728	0.69658
R Square change	0.56	0.63	0.619	0.645	0.75
F change	14.015	3.054	12.142	10.142	14.142
Df1	1	1	1	1	1
Df2	90	90	90	90	90
Sig F change	0.76	0.84	0.71	0.81	0.68
Durbin Watson	1.507	1.615	1.994	1.924	1.724
<b>Decision</b>	Reject HO1 and Accept Ha1	Reject Ho2 and Accept Ha2.	Reject Ho3 and Accept Ha3.	Reject Ho4 and Accept Ha4.	Reject Ho5 and Accept Ha5.

*Source: SPSS V22.*

### **Quantitative Data Hypothesis Result Implications**

Having already discussed the quantitative research questions implications and filled the gaps, the research hypothesis of the quantitative data will also be discussed and linked with research objectives and questions where the results are either rejected ( $H_0$ ) or accepted ( $H_a$ ) hypothesis . This is further presented in a tabular form (Table 26) for more clarity of the study findings.

#### **Hypothesis One**

$H_0$ 1): There is no significant relationship between the levels of business operations with regards to management information systems drive in human resources development on the Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered and within its post-chartered era.

$H_a$ 1): There is a significant relationship between the levels of business operations with regards to management information systems drive in human resources development on the Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered and within its post-chartered era.

Implication from the study result on Table 26 shows that organization effectiveness is achieved more with the impact of management information systems at the post-chartered era on its level of business operations than at the pre-chartered era.

**Therefore, the  $H_0$ 1 null hypothesis here was rejected while the  $H_a$ 1 alternate hypothesis here was accepted**

#### **Hypothesis Two**

$H_0$ 2): There is no significant relationship between leadership style, structure, and reengineering in the extents of management information systems penetration in human resources development

on the Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered era and within its post-chartered era.

Ha2): There is a significant relationship between leadership style, structure, and reengineering in the extents of management information systems penetration in human resources development on the Organizational effectiveness of the Nigerian Institute of Management during its pre-chartered era and within its post-chartered era.

Implications from the study result on Table 26, shows that organizational effectiveness is not achieved with the impact of management information systems during its pre-chartered era on its re-engineering the structure/extent of human resources penetration in human resources development unlike the post-chartered era which achieves organizational effectiveness with management information systems' impact.

**Therefore, the Ho2 null hypothesis is rejected while the Ha2 alternate hypothesis is accepted here.**

### **Hypothesis Three**

Ho3): There is no significant relationship between interactive effects of Human Resources management on management/administrative changes on the organizational effectiveness of the Nigerian Institute of Management in human resources development during its pre-chartered era and within its post-chartered era.

Ha3): There is a significant relationship between interactive effects of Human Resources management on management/administrative changes on the organizational effectiveness of the Nigerian Institute of Management in human resources development during its pre-chartered era and within its post-chartered era.

Implications from the study result on Table 26, shows that organizational effectiveness is not achieved with the impact of management information systems during its pre-chartered era on its leadership style/change management/administration effect on human resources management in human resources development unlike the post-chartered era which achieves organizational effectiveness with management information systems' impact.

**Therefore, the Ho3 null hypothesis was rejected while the Ha3 alternate hypothesis was accepted here.**

#### **Hypothesis Four**

Ho4): There is no significant relationship between the emergence of information technology boost in management information systems on the organizational effectiveness of the Nigerian Institute of Management's post chartered era in human resources development.

Ha4): There is a significant relationship between the emergence of information technology boost in management information systems on the organizational effectiveness of the Nigerian Institute of Management's post chartered era in human resources development.

Implication from the study result on Table 26 shows that organization effectiveness is achieved more with the impact of management information systems at the post-chartered era on the emergence/boost of information technology in human resources development.

**Therefore, the Ho4 null hypothesis here was rejected while the Ha4 alternate hypothesis here was accepted.**

#### **Hypothesis Five**

Ho5): There is no significant relationship between the impact of the roles of the advanced technological infrastructure in executive decision making and business services with respect to

management information systems on organizational effectiveness in the post chartered era of Nigeria Institute of Management's human resources development.

Ha5): There is a significant relationship between the impact of the roles of the advanced technological infrastructure in executive decision making and business services with respect to management information systems on organizational effectiveness in the post chartered era of Nigeria Institute of Management's human resources development.

Implication from the study result on Table 26 shows that organization effectiveness is achieved more with the impact of management information systems at the post-chartered era on the advanced technological infrastructure for executive decision making and business services in its human resources development.

**Therefore, the Ho5 null hypothesis here was rejected while the Ha5 alternate hypothesis here was accepted.**

### **Qualitative Data Research Questions Implications and Filling of Research Gaps**

From the thematic analysis previously done in Chapter 4 on the qualitative data, there are seven interview research questions and three focus group discussions. The qualitative data mainly comprises of the external stakeholders used for the interview while the focus group discussion comprises of internal stakeholders. The interview question plus group discussions were set in such as to complement the closed-ended quantitative questions by allowing interpretations for thoughts, behaviours, ideas as open-ended comment.

**Thus, the interview questions are as follows;**

1. Do you have any knowledge about management information system before?
2. What do you understand by Human Resources development?

3. Is Human Resources development practiced in the organization?
4. Management Information System functional in an organization like NIM?
5. What can you say about the pre and post chartered era of NIM?
6. What impact or effect do MIS have on Human Resources development?
7. Is the leadership style, structure and reengineering impactful on the effectiveness of Human Resources development?

**While the focus group discussion are as follows;**

1. Have you also heard about Human Resources development? (If Yes, discuss...)
2. Are you aware that there are pre and post chartered era of NIM? (If Yes, discuss...)
3. Do you think there are any differences in the penetration of MIS in Human Resources development between the pre and post chartered era?

The underpinning research objectives to the qualitative data are the first research objective (RO1), the second research objective (RO2) and the third research objective (RO3). Listed below;

RO1). To compare the levels of business operation with regards to management information systems drive in human resources development during the pre and post chartered era of the organization.

RO2). To assess the major differences (leadership style, structure and re-engineering) in the extent of Management Information Systems penetration in human resources development within the pre and post chartered eras of the organization.

RO3). To establish the effectiveness of Human Resources Management involvement in change management and administration in the human resources development of the organization within the pre and post chartered era of the organization.

By implications from the result of the findings, the responses from the qualitative data suggest more of full acceptance (Very good –3) on the internal stakeholders affirmed that management information system significantly impacts organizational effectiveness of the Nigerian Institute of Management through the aid of information technology.

In addition, the external stakeholders also suggest more of full acceptance (Very good -3) and affirm that there exist differences in the penetration of management information systems in human resource development between the pre and post chartered era. There were a lot of penetrations of management information system in human resource development in post chartered era than in the pre chartered era. This was attributed to the introduction of advance or new technologies in management information system which led to increased organizational effectiveness.

Thereby, the result was expected as the other two research objectives (research objective 4 and research objective 5);

RO4). To determine if the boost in information technology is meant for improving management information systems in human resources development for organizational effectiveness at the post-chartered era of the organization.

RO5). To identify and establish the roles of advanced technological infrastructures meant for executive decision making and business services impacting management information systems' effectiveness in the post-chartered era of the institute's human resources development.

This aligns with the three existing literatures (Gap Analysis Model -GAM, Diffusion of Innovation Theory -DOI and Technological Acceptance Model -TAM) for the gap created by not including them in the qualitative design for the research questions was overturn and bridged as their inclusion was eventually filled with the research participant responses especially at the discussion sector where the responses significantly acknowledged the acceptance of management information systems' impact on organizational effectiveness and the need to build on this momentum through the investment in technologies infrastructures for information technology development in the Nigerian Institute of Management. This is in line with Spicer (2004) who duly noted that a good researcher should allow the data to speak for itself and research to evolve organically from the ongoing result. This is further demonstrated by the alignment with the existing literature from TAM known as the Theory of Reasoned Action (TRA) which is tailored to meet up with new or advances technologies.

Notably in a qualitative study, the interest is more on feelings, thoughts, beliefs and behaviors thus, this also aligns with another existing literature known as the Theory of Planned Behavior where there is a general understanding that peoples behavior can changed.

This perceived change from the findings, is also in line with the qualitative rate of diffusion also known as Diffusion of Innovation Theory and is affected by the desire of the respondents on innovation's of new technology through the boost or emergence in information technology on management information systems processes. Therefore based on the interview and group data, by implication, it is satisfactory safe to interpret that this results aids in bridging some of the aforementioned research gaps by properly acknowledging with the need for improved technology and new technological investment which impacts on the MIS processes and thus significantly affects organizational effectiveness of the Nigerian Institute of Management.



**Table 27*****Qualitative Data Hypothesis Result Implications***

<b>Parameters</b>	<b>Decision Criteria</b>	<b>Total</b>	<b>Decision</b>
Focus Group Discussion	Greater than or equal to 20.00	25.03	Reject Ho1,2,3,4,5 and Accept Ha1,2,3,4,5.
Interview	Greater than or equal to 14.00	17.42	Reject Ho1,2,3,4,5 and Accept Ha1,2,3,4,5.

*Source: Field Work 2022.***Qualitative Data Hypothesis Result Implications**

From the above table 27, the qualitative analysis implies that the focus group discussion and interviews had totals of 25.03 and 17.42 respectively which fell within 20.00 for focus group discussion and 14.00 for interviews. Thus, the focus group discussion and interview results rejects all the null hypothesis (Ho1 – Ho5) as the decision indicates that management information systems significantly impacts organizational effectiveness of the Nigerian Institute of Management. Thus, accepts all the alternate hypothesis (Ha1 – Ha5) in the process.

**Recommendations for Application**

Furthermore by extended implications of this dissertation, it recommends application for theoretical and managerial use when triangulation is achieved by merging both the quantitative data and the qualitative data as a solid block decision/result.

$$\text{Qualitative data} + \text{Quantitative data} = \text{Solid block decision/result}$$

(Triangulation)

**Table 28*****Application of the Results as a Solid Block and Implication of the Decision***

Quantitative Data Result	Result fall within Durbin Watson acceptable range, fall within 5% level of significance and fall within acceptable R model.
Qualitative Data Result	Result fall within acceptable total score.
Decision	Implies that at 5% level of significance, Management information system significantly impacts the Organizational effectiveness with respect to human resources development in the Nigerian Institute of Management.

Therefore by recommendation on its application, it is safe to say that management information systems should be designed to achieve the following;

RO1/RQ1/ELT1: First, to reduce expenses to labour intensive manual activities.

RO2/RQ2/ELT2: Second, to deliver flexible processes throughout the institution.

RO3/RQ3/ELT3: Third, to provide an object sytle for recording & analyzing information.

RO4/RQ4/ELT4: Fourth, to enhance better communication technology among employees

RO5/RQ5/ELT5: Fifth, to support the organization's direction to advanced/strategic goals.

Hence, the researcher further recommends that the use of management information system management information system should also be used to recognize (RO1&RQ1), monitor (RO2&RQ2), measure (RO3&RQ3), limit (RO4&RQ4), and manage (RO5&RQ5) risks for achieving organizational effectiveness in human resources development. MIS should be highly encouraged and maintained in order to attain a competitive advantage and enhance service delivery to its stakeholders, automate all critical processes to accomplish better efficiency,

reliability and control for the effectiveness of the Nigerian Institute of Management (which served as the organization studied).

### **Contribution to Theory and Knowledge (Theoretical and Managerial Implications)**

This dissertation is also expected to contribute to the academia, institutions and other existing body of knowledge either theoretically or managerial. Just as Chapter one's significance of study emphasizes on the importance of the study, this section however is mainly concerned with the prospects of which professional and academic organization might be interested in the study due to the contribution to theory and knowledge. It extends our knowledge on management information system effectiveness as the researcher heavily adapted the use of research questions on closed –ended and opened ended questions with the multi perspective intention and expectation to find new information's.

Thus apart from the study's explanatory nature, it was also able to exhibit some exploratory nature by modifying some loose ends in DeLone and McLean's model (of 1992 and 2003) of Information System success to incorporate new management information system variables from recent research. The findings contribute to the Management Information Systems -MIS effectiveness research as the previous DeLone's six variables of information systems -IS success were replaced by the researcher's five variables of MIS effectiveness on organizations. As previously mentioned this was also applicable when the researcher replaced Beaumaster's four MIS implementation variables to the study five. The research questions were well structured in such a way that the five dimensional variables of management information system shows how they impact on organizational effectiveness (which is the dependent variable). This way of looking at Management Information System effectiveness can help companies realize how MIS contribute/affect positively on several organizational variables.

From the research findings, this study provides statistically significant results that can contribute to the financial and/or non-financial performance of a firm such as entrepreneurs, banking institutions, educational institutions, government agencies and non-profit organizations. Hence, adding up the existing literature in relations to management information systems, information systems and information technology, the study's variables will further leads to advancement in business operations, enhanced change management, boost performance of businesses through improved operations, leads to efficient and effective leadership style and leads to automated operations in organizations looking to move from their traditional way of doing things to modern ways of doing things.

While noting that this mixed-method study provides more evidence for the statistical relationship between the variables however the researcher believes that future research should focus on this specific construct when exploring its impact on organizational variables using control variables such as company size and industry (to be discussed in the recommendation for future studies). The findings from the fourth and fifth research questions also have relevance for technology adoption and diffusion research. As further seen on the fifth research variable on the advancement of technological infrastructures where the continuous acceptance of new technologies and innovations leads to Venkatesh et al. (2003), Unified Theory of Acceptance and Use of Technology (UTAUT) theory and Roger's (1995) Diffusion of Innovation Theory. Noting that, the standardization of business operations due to new technologies promotes organizational effectiveness.

Furthermore by managerial implications suggests that, this study promote the advanced use of information technology with automation of business processes and acknowledge that effectiveness management of these technologies is a critical success factor in business

transactions. Through the investment in advanced technologies digital transformation is encouraged thus, organizations can also work remotely or virtual which is safer during a pandemic (as recently witnessed by the outbreak of covid-19 virus). Thereby, creating a safer, and healthy, working environment for effectiveness of NIM.

Finally, yet importantly, the results of the research findings, literature and data from this study will add to the knowledge bank in human resource development aided through the research “identified” favorable impact of management information system in the effectiveness of the Nigerian Institute of Management. Furthermore by theoretical implications and in order to facilitate the integration of management information system on the NIM effectiveness, the researcher constructed a proposed framework and recommends its application as an additional (new) guide for improving the Information technology infrastructural developments through the adoption and acceptance of the continuous use of technology (see Figure 7).

Therefore if the study is fully authorized (approval for publication) and subsequently published, it would be helpful to students, academia, entrepreneurs, and government and also law enforcement or regulatory agencies to appreciate management information system as a necessary effective organizational human resource development tool.

### **Recommendations for Future Research**

Here all recommendations was further supported with the research findings and framed into the existing literature from the Chapter 2 (two). However, before any recommendation for future research was done, it was imperative for the researcher to critical look into the limitations of the study for some limitations may also provide opportunities for future study.

### **Limitations of the Study**

The first limitation was the timing of the research for the data collection occurred during the covid-19 pandemic era. Despite the researcher using a single population of study at the administrative head office building (also known as Management House) of the Nigerian Institute of Management where the target population was stratified into group of internal (staff and members) and external stakeholders (government officials and other professionals in the medical, media, engineering and legal field whose chapter is domiciled at the head office), the advantage of the having the targeted sample together in one big location was slightly affected with the strict covid-19 social distancing protocols.

Thereby, affecting the initial plan to conduct the research physically by, face to face interviews, hand distribution and retrieval of questionnaires. This affected the slow response rate of the physical retrieved data (Porter and Whitcomb, 2003a). Hence, the researcher had to seek to the alternate approved plan of electronic coverage of interview and online distribution by using zoom meeting application for the interview and focus group discussion then using google form for the questionnaires respectively. Despite the alternative plans and their justifications, during the discussion of findings from the collated data, the zoom application crashed due to its low memory or storage capacity but this did not affect the full information retrieved as the researcher was able to fully retrieve the response sheet through the back up file on the google drive but the same luck did not apply on the videos and voices as seen by a video conferencing software application.

While noting that although physical distribution and collation is prone to human error, it can be double checked easily by re-counting (Reips, 2000) and issues such as "crashing" is not related here. Also physical distribution and collation was seen as an advantage due to the ease of

information access by the same location of the target population involved in the study. The second limitation is that of the nature of the study which inclined towards being cross-sectional and this makes it difficult to easily draw conclusions about the effect and their relationships. This is unlike a longitudinal design which can examine the answers from the same sample population using the same model. This is also noted by Reio (2010), who stated that the cross-sectional design tends to introduce prolonging time lag between the measurement of the independent variables (acting as the predictors) and the dependent variable.

Going forward, future researches can be directed towards a confirmatory analysis to establish the validity of the scales and shed more light on the factors that easily affect the management information systems impact. The third limitation, stem from the single case study which can lead to common source bias. However, the researcher minimized this limitation by employing all the possible suggestions from the literature and ensuring that the study corresponds with the research objectives and questions corresponds with the research design (framework) to achieve reliability. Also, the use of multiple respondents (internal and external stakeholders) was adopted to validate the result of the findings.

Despite the limitations and having already mentioned or identified the three limitations and the contributions to theory and knowledge discussed, the researcher was able draw the following recommendations for future studies/research.

### **Recommendations (Based on Findings)**

As previously hinted in the limitations, a replica of this study can be carried out with a further scope to include other organizations such as manufacturing firms and see whether the findings are consistently in agreement for there is need for more clarity on organizational effectiveness and performance. This is supported by Gartner and Ramnarayan (1983) who had

earlier emphasized that organizational effectiveness measurement is a massive undertaking as suggested but the need for it is clear and definite. Cameron (1986) had also suggested that the focus should center first on identifying effectiveness domains.

However, prior to this effort, the process for identifying those domains and for measuring the organization's performance on those domains must be developed. This is evident from the findings of the research second question which recognized the effectiveness domain by positively supporting that the structure of an organization has impact on human resource development and this was also noted in the existing literature called the Open System Theory, where organizations are highly influenced by their environment.

Thus, this study supports the future recommendations that many organizations will have to focus more on effectiveness measurement within the organization level in order to specifically attain the organization performance. This was evident from the findings of the research third question which focused more on the performance of human resources to boost organizational performance by significantly agreeing that the Involvement of human resource management in change management and administration is remarkable and this was also noted in the existing literature called the Theory of Planned Behaviour, where the character of human resources administrator in change management situations assist us to understand how people behavior can also change.

However, while also noting that organizational performance assist in measuring organizational effectiveness but the elements or factor may be different and the emergence of information technology is key to measuring performance in the 21<sup>st</sup> century (Kevin, 2006). Hence, this also leads to the future recommendation on the need to study the prospective ways that could be adopted to ensure full awareness of information technology. This is also evident



from the findings of the fourth research questions which respondents' significantly agreed that the use of information technology boosts management information systems (MIS) based facilities and strengthens the business operations and this was also noted in the existing literature called the Theory of Innovation which advocated for new innovations and better awareness in information technology.

For there is further need to have the necessary knowledge and skills to fully exploit the new technologies used for business operations. This is supported by Galliers et al. (1994) who recommended that organizations must strategically and critically assess how they manage their information and technology resources to achieve their strategic goals due to the fast pace of technological advancements and the influence of information technology on the evolving competitive landscape. This suggestion by Galliers *et al.* is also evident from the findings of the interview question which fully accepted (a thematic scale of 3 which also indicates Very Good) that management information system is functional in an organization like the Nigerian Institute of Management due to the activities witnessed the post-chartered era where the birth of the internet occurred. This was also noted in the existing literature called the Gap Analysis Model where the need assessment of the organization supports the information technology drive for its sustainable developments.

The study also recommends that there may need to base future studies on larger samples of employees drawn from a broad range of organizations. This is evident from the findings of the third group discussion was fully acceptance that there are very good (scale of 3) differences in the penetration of Management Information Systems in human resource development between the pre and post chartered era this was also noted in the existing literature called the Technological Acceptance Model (TAM) which support the perceived usage of technological

facilities. As the technological infrastructure in the sector emerges, it provides an institutionalized framework in which technological change can occur as a routine, cooperative process among stakeholders within and outside the organizations. The infrastructure defines the boundaries of technological problems, provides an accepted technological approach, and establishes the criteria for evaluating the findings or results. This is applied by the researcher by recommending a proposed framework for the research result (see Figure 7).

Likewise, more study should be done on challenges facing management information systems use in organizations as this was noticeable by the researcher while attempting to bridge the methodological knowledge gaps (see Chapter Three) that existed. Hence, the researcher structured the research challenges or statement of problems from the first chapter one (1) by tagging them as research problems (RP) grouped into 5 factors, which are;

**RP1-** Administrative Inefficiency,

**RP2-** Lack of Technical ability,

**RP3-** Poor Implementation of Policy Framework,

**RP4-** Lack of Management Information system (MIS) integration and

**RP5-** Poor technological Infrastructure

Regardless of boundary and research problems, the researcher sought to use this study to assess the impact of management information systems on organizational effectiveness (dependent variable) in the Nigerian Institute of Management to fill the existing gaps. The researcher was able to link these problems with the five independent variables (IV) and the research questions (RQ) namely;

**RQ1** = what were the levels of business operation? (**IV1**)

**RQ2** = what are the leadership style, structure and re-engineering? (**IV2**)

**RQ3**= what are the interactive effects of Change management? (**IV3**)

**RQ4**= How did the boost (or Emergence) in Information technology affect MIS? (**IV4**)

**RQ5**= How did the role of advanced technological infrastructures affect MIS? (**IV5**).

For the clarity of the readers, the research problems (RP) grouped into five was discussed more as seen;

**RP1** – Administrative /Leadership Inefficiency: As leaders, part of their role is providing support to its members or teams or followers just to meet their needs. Meanwhile, the leaders need to also have a support that will attend to the needs of their leader to keep them working efficiently.

This leads to poor communication when leaders or managers do not have detailed syllabi and auxiliary announcements of critical milestones, lack opportunities for questions and answers either about completed task or incomplete task, or simply do not provide clear directions and examples of a group of members to follow.

Also, miscommunication can occur with the leaders/managers who try to lighten the tone with the types of jokes that would be used in face-to-face settings, but whose humor is misunderstood and whose irony is not grasped. Further leads to chaos communications within the organization. This is an application of chaos theory that aims to guarantee security in information transfer using telecommunications systems. Secure communications implies that the contents of the message being delivered are unavailable to potential listeners.

**RP2** - Lack of Technical Ability: In face-to-face office settings, even when staff and members do not take attendance, the visual presence often still provides an incentive. According to many managers, if one really wants to encourage participation, they must ensure that they use numerous, easily available online tools to track participation and that staff are aware of this

tracking. In team settings, if instructors/managers or team leaders assign individual remarks, it assumes that the instructor or leader has devised a method to determine relative contribution. If the manager assigns a team remark based on accomplished task, it assumes that the leader has devised methods for detecting and penalizing inefficient staff with particularly low or non-performance. Also, lack of technical know-how to drive technological processes can hinder the progress or success of the organization.

**RP3 - Poor Implementation to Policy Framework:** This is attributed to poor implementation to management change or change in administration as the use of new technology requires planning for smooth transitions. In today's dynamic business environment, adequate knowledge of IT tools for effective business operations is crucial. The scale and complexity of organizational decision making processes are continuously growing, creating unprecedented challenges in controlling, monitoring and managing business services. Even at the individual level the manager or leader must apply basic change management skills to ensure a smooth transition.

**RP4 - Lack of Management Information Technology Integration:** The challenges of integrating Management information technology or ICT solutions into the organization in order to improve service delivery, transparency and accountability is worrisome to organizational effectiveness. There is need to have the necessary knowledge and skills to understand and fully exploit technology potentials. Technology issues in online meetings and dashboards for tasks are common and good instructors must be able to prevent some common problems and diagnose others. Technology management implies figuring out minor problems by reading a manual and doing your own troubleshooting, and reaching out to technology specialists when problems are unresolved, timely, and/or may have a systemic source (e.g. a glitch on the online system or a

system outage). It also means having the ability to work around rare, but important, system outages.

**RP5 - Poor of Technology Infrastructure:** The downside of this rapid acceptance of computer technology is the lack of cultural context that it provides. The Internet as a mass media mechanism has grown significantly over the past few years. According to the World Fact Book, there are approximately 12 Internet Service Providers (ISP) as they show the ability of developing countries to partake in technological development that is going on around the world, provided they are given access to the networks and necessary infrastructure that is needed for technological development to take place. For technology has improved, different companies have figured out a way to make it financially feasible for the average Nigerian institute of management stakeholders. There is need to change to perspective and invest in technological infrastructures to ease business transactions.

Therefore, *in obtaining the research solutions (RS)*, from the boundary and research problems, in order to tackle the research questions distributed, an analysis was made in chapter four (4) and from the findings, the implications of the research was also discussed. Also being motivated by the lacuna in the literature and suggestions from chapter two (2), the findings were further assessed or interpreted. Hence, at the end of the arduous research process in order to facilitate the implementation of the research findings, the recommendations were re-emphasized further for possible research solutions (RS);

**RS1 –** The Nigerian Institute of Management must future promote the image of its leaders and administrators in the human resources development world by providing qualitative,

education and informative journals, publications and magazines on periodic bases of either monthly or annually. Such management items will further educate the public the professional management ethics, culture, policies and applications relevant with modern practices in line with international standards.

This is evident from the research finding which significantly agrees that Human Resource development was not very effective in the pre chartered era due to the use of outdated services as seen in the pre-chartered era of the Nigerian Institute of Management which supports the existing literature of Human Relations Theory. As this promotional quest is highly achievable in the modern post-chartered era but the right human resource administration must be in place to ensure that the right people are placed in the right positions in order to ensure organizational effectiveness.

**RS2** - The Nigerian Institute of Management must further show more seriousness on developing, re-engineering, re-activating of the institutes operational policies as well as on its professional certification courses in human resource development. By ensuring that this is done, it will further promote the image of the organization as truly the source and symbol of management excellence which is the organization mission statement. This is also evidence from the research findings which significantly agrees that the reengineering of an organization has impact on the human resource development in the effectiveness of the Nigerian Institute of Management and it supports the existing literature of Resource Based Theory where the need to ensure adequate finance for sustainable development is carried.

This further request, if fully implemented will ensure that NIM certificates and technical operations abilities are international recognized through the increased flow of its businesses and

general acceptance to modern business operations. In order to properly achieve this, the human resource administration will need to engage in a full training and development for its stakeholders.

**RS3** – By re-engineering its structure and administrative policies for better business operations, the Nigerian Institute of Management should further engage its top management to create a more practical framework where the channels or line of authority is functional and not unobtrusive. By implementing this, it will build up the workers/employees/staff management skills, talents, education, training and development on management information systems such that the system will be more robust and crucial for making effective decisions for business operations.

This is also evidence from the qualitative research findings which fully accepted (a thematic scale of 3 also indicates “very good”) that the leadership style, structure& reengineering is very impactful on the effectiveness of management information system in human resource development and it supports the existing literature of Theory of Planned Behaviour. This unobtrusive behaviour enables us identify and understand the changes in peoples’ behavior needed towards affecting organizational effectiveness.

**RS4** – Having realized that the traditional decision making tools cannot suffice in this globalize world, the Nigerian Institute of Management should further ensure adequate and up-to-date skills are necessary to efficiently manage business procedures and processes. By implementing this, it will improve the skills of the stakeholders (especially the internal stakeholders –Staff and Members) in the use of modern information technology tools in the generation and maintenance of management information systems in human resource development (HRD).

This is also evidence from both the quantitative and qualitative research findings which significantly agrees that Information technology leads to MIS integration for organizational effectiveness (quantitative question) and fully accepts that there is a very good impact of management information system in human resource development in the effectiveness of the Nigerian Institute of Management (qualitative focus group discussion). This also supports both the Gap Analysis Model and the Diffusion of Innovation theory. Where the Gap Analysis Model inclines towards the quantitative need assessment of where the organization was before, where they are now and where they intend to be in future while the Diffusion of innovation theory inclines towards the qualitative thoughts and actions on new technologies.

**RS5** – The Nigerian Institute of Management should further appreciate the computer as an indispensable tool for effective performance. With the increasing competitive and demanding business environment, all cadre of staff should be involved in this information technology tool which is essential for driving management information system of the organization in human resource development (HRD).

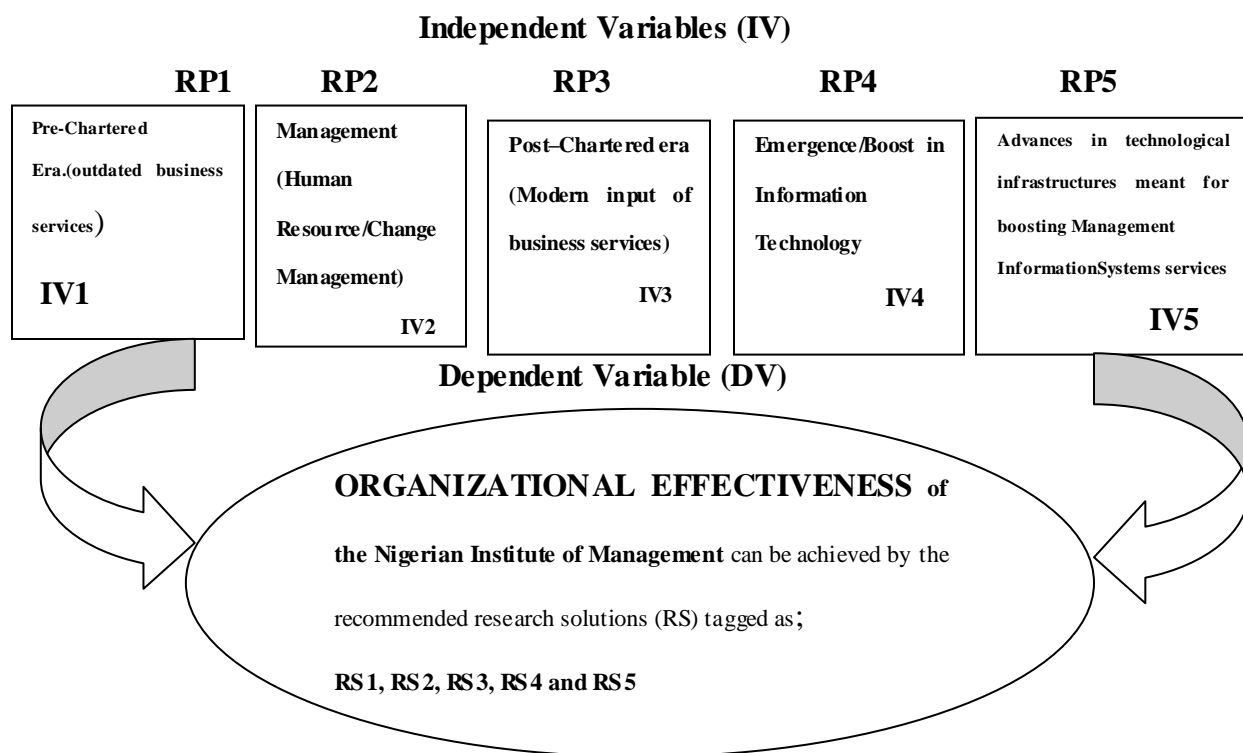
By this awareness and acceptance, participants or all stakeholders are acquainted with several advanced information technology -IT features that are meant to enable users automate routine tasks/functions beyond just typing and printing. Hence, investment in advanced technological infrastructures should be highly encouraged in the organization. Subsequently, it supports the evidence from the research findings which significantly agrees that the Advanced Technological Infrastructure places a major role in decision making and business services impacting management information systems effectiveness in the post chartered era of the institute's human resources development. Therefore, its acceptance for perceived usage and full adoption is in line with the existing literature known as Technological Acceptance Model which



impacts favourably and significantly on management information systems by promoting organization effectiveness. Hence, the researcher constructed a new framework and named it **Ebere's Remedial Technological Business Model (ERTBM)** as an additional/new business operational guide in leveraging new and advanced technologies for organizational effectiveness.

**Figure 7**

***Research Result Recommended Framework (Researcher's contribution to Theory – ERTBM)***



Where RP1 resolves the problem in RS1 by recommending improving the administration of NIM,

RP2 resolves the problem in RS2 by Improving IT skills required to integrate MIS,

RP3 resolves in RS3 by Developing Practicable Policies or Framework for MIS growth,

RP4 resolves in RS4 by fully integrating MIS in NIM,

RP5 resolves in RS5 by Acceptance / adoption in technology through its usage, enabling more investments in advanced technological infrastructures for MIS effectiveness in NIM.

Together the Research Solution (RS) interconnects to enhance organizational effectiveness. (*This framework could also be applied on other studies to achieve organizational effectiveness*).

### **Conclusions of Research Study**

Having done the recommendations, therefore as an overview, this study was sorted in an attempt to identify and appreciate the impact of management information systems on organizational effectiveness in human resources development. Bearing in mind Avgerou (2000), noted that it is the responsibility of human resources in an organization to make sure the operations are taking place smoothly and things are going well hence, this study used the Nigerian institute of Management as a case study due to its multidisciplinary nature and the need to get different perspectives of views as against a single view.

Therefore this mixed-method study majorly aimed to employ multi-factor models to investigate and explain organizational effectiveness by further accepting the adherence to the Technology Acceptance Model in the advancement of technological infrastructures responsible for the growth of management information systems. However, in order to properly arrive at the research conclusion(s) from the result analyzed, it is essential to note that the researcher concludes that with the continuous and strategic deployment of advanced technological tools (Galliers et al, 2020). The impact of management information systems on the institute's effectiveness and also in-line with the best practice recommendations (2023&2013) subsequently lead to the following principles or attributes of organizational effectiveness; effective leadership, information and communication investments, accountability and transparency, enhance discipline and motivation, improve measurement, productivity and risks, fairness and equity, digitalized workforce engagement, encourage independence and ethically responsibility,

promote management excellence, integrity and stakeholders engagement, secured timely transactions and improved technical user ability.

These principles were previously mentioned in the literature review at the conceptual application process stage and the study further aligns with them at the implementation deployment process (methodological review) stage for the conclusion. In other to properly understand the dissertation and its stages on the impact of management information systems, the researcher feels it is worthy to do a thorough overview of the entire thesis (Chapter One to Five) then follow up by drawing up summaries or conclusions emanating from the result findings.

### **Overview of Chapter One**

This chapter had given a background of the study by introduction and observed that the level of business operations within the pre-chartered era (the period of affairs when the organization was established) was primitive and traditional compared to its post-chartered era (the period of affairs when the organization was given the legal backing to certified management professional and acts as the management profession regulator of business practices in Nigeria) which experience some modern changes in technological inputs used for its business operations. Notably, the researcher admitted that there were several relevant theories and models well documented on management information systems effectiveness on organizations, despite this however; the Nigerian Institute of Management demanding mandate, the approaches and logical model(s) for management information systems to achieve organizational effectiveness have been a challenge.

Hence, the researcher described the problems and duly noted that the challenges of this research were aimed at bridging the existing gaps through the integration of management information system in NIM operations in-order to enhance organizational effectiveness. Thereby,

the focus or purpose was emphasized; which is to determine the use of Management Information systems at the Nigerian Institute of Management for organizational effectiveness. To successfully achieve this, the researcher presented five research questions in inline the mentioned research focus. In further attempt to understand the research purpose, the research problems were guided and formulated into five research questions. Also five null hypothesis and alternate hypothesis were formulated aligning with the research questions, objectives and purpose of study with the aim of either validating or rejecting the question.

Therefore, a brief nature of the study's methodology was discussed and the location of the study was mentioned (which is the administrative head office of the Nigerian Institute of Management also known as Management House in the commercial nerve of Nigeria, Lagos), thereafter discusses on some demilations (exclusions of the study such as under age individuals and people outside the administrative quarters of the location or case study) of the study and potential significance of the research effort.

## **Overview of Chapter Two**

To tackle the research questions, a conceptual framework was developed in support of the underpinning theoretical framework. Doing this motivated the need to properly review the pertinent literature of the study and the researcher conducted a thorough literature on the field or industry description of the study. Where the necessary research components such as leadership style and their level of operations, re-engineering and their level of operation, information technology, management information systems and organizational effectiveness was discussed conceptually as first aspect of the field/industry description.

While the second aspect of the field/industry description was also discussed using the underpinning models or theories to elaborate further by assisting in appreciating how the use of

management information systems affects organizational effectiveness. These theories or models (Human Relations Theory - Elton Mayo, 1924; Resources Based Theory - Wade and Hulland, 2004; Theory of Planned Behaviour - Ajzen, 1991; Open Systems Theory - Bastedo, 2004; Gap Analysis Model - Channon and Sammut-Bonnici, 2015; Diffusion of Innovation Theory - Rogers, 1995; Technology Acceptance Model – Davis *et. al*, 1989) were recognized as theories that show their relevance to the study, as they relates to the problems, purpose and explains how most of the Research Objectives (RO) arise and how they further develop/links into Research Questions (RQ).

In further attempt to identify the gap that motivated this study, a conceptual discourse was highlighted showing the relationship among the study's variables and the theories. In the process five independent variables (IV) which represents management information system was identified and one dependent variable (DV) which is the organizational effectiveness. In addition, an empirical review was conducted where past studies of both global and local were reviewed. Thereby identifying the research gaps and critically reviewing them as suggestion(s) and evaluations were made for appraisal to the literature(s) reviewed.

### **Overview of Chapter Three**

To conduct this research, the researcher was tasked with the responsibility of how to go about carrying this research. Hence, this chapter was devoted to the process of gathering information (also known as “methodology of the study”) using research onion layout to properly arrange the methodologies. This chapter also gave a detailed discussion on the research settings such as the design and approach of the study. Thereby, identifying potential gaps in methodology of the study and sorted on how to dig deep philosophically in attempt to bridge those gaps.

Hence, the researcher also outlined the philosophical approach to the study then discussed the type of study which is a sequential explanatory (mixed method) approach while giving valuable justifications for the descriptive (quantitative approach) and case study (qualitative approach). Based on the concept of collating the quantitative data first then, support it later with the qualitative data (sequential explanatory). From the over one million members and none members of the case study (the Nigerian Institute of Management), a decision was made on the targeted population to comprise of the stakeholders of the organization. This decision was taken in order to get a proper representation of the sample size. Therefore, the researcher adopted the use of Probability Sampling method where the stakeholders were divided into groups (internal stakeholders and external stakeholders) known as Strata.

Subsequently, the groups were sub-divided into other groups and the sampling technique use from the probability sampling is the stratified random sampling. Therefore, the research tools/instruments were identified as questionnaires (for the quantitative data), interviews and focus group discussion (for the qualitative data). Steps were also taken to ensure reliability and validity of the research instruments and the researcher constructed an operationalisation of variable for more clarity of the research intention when data is collected and retrieved.

However, before data was distributed and as a standard procedure for conducting a research, the researcher also gave standard ethical assurances to be taken during the research. The development of the research tools/instrument and the process of data collection was discussed thereafter, a brief summary on the plans on data analysis was also mentioned.

#### **Overview of Chapter Four**

Here statistical techniques were discussed on how to test the research questions. In this regard, the descriptive statistics were presented and the sample demograph were discussed. The

descriptive findings from the questionnaires were subsequently linked to the existing literature theories (ELT) and aligning the research objectives (RO) in order to corroborate the research findings.

Thereafter steps in testing the research questions (RQ) were discussed as the analysis for the quantitative data was done using SPSS version 22 (through Multiple linear regression analysis) while that of qualitative data was done using thematic (themes) analysis. Further steps were taken to ensure the trustworthiness of data, reliability and validity of the data as well as to ensure that the confidentiality of the respondents was properly coded. Hence, the response data was backed up in a reliable cloud storage (google drive) and a validated google link (where the entire data response was recorded) was attached to the chapter for more clarity and referencing.

Pilot, data cleaning and checks were carried out and the result revealed that out of the 1000 questionnaires distributed, 500 (50%) were retrieved and satisfactory for research while 250 (above 50%) were retrieved out of the 300 participants for interview and 36 were retrieved out of 36 (100%) participants for group discussions and was also confirmed satisfactory for research. A total of 600 consent forms were retrieved from the distributions of quantitative and qualitative data. Here the design of the questionnaires, interview sheets and group discussions were done in such a way that it follows an orderly sequence of proceedings where the quantitative data gotten from their questionnaire responses were used to analyse the qualitative responses later gotten from the Interview and group discussions.

The Big Q data acquired first from the quantitative was descriptive and exploratory in nature and then used to complement the corresponding Small Q data from the qualitative data which constitutes the format or design of the sequential explanatory mixed methods. The coded questionnaires were done using the 5points likert scale (Strongly agree -5, agree -4, Neutral -3,

disagree -2 and strongly disagree -1) while the interview and focus group were coded using a 3 point theme scale (Very good -3 signifies - Full acceptance, satisfactory- 2 signifies –neutrality and quite fair -1 signifies – less convincing).

For further interpretation of the findings, in the questionnaire responses, the cut off mark or point is 3 while noting that any point above 3 suggests that management information system significantly impacts on organizational effectiveness. This also applies to any point below 3 which suggests that management information system do not impact on organizational effectiveness. While in the qualitative response, the cut off mark or point is 2. Noting that any point above 2 shows that there is significant relationship between the two variables (that is, that management information systems impacts on organizational effectiveness). This also applies to any point below 2 as it will indicate that there is no significant relationship between management information system and organizational effectiveness.

Also, it is important to note that before carrying out the regression analysis processes, the researcher saw valid reasons to initial begin with correlation testing using the hypothesis test of Pearson where significant test indicates that there was a strong linear relationship between more than two variables. Thereby signalling the confirmed adopted of multiple regression for analytical procedures. Thereafter, the details/information of the SPSS findings obtained from the multiple regression analysis model used for testing the various research questions (RQ) were presented and the analysis were done to corroborate with the existing literatures theories (ELT) and research objectives (RO). Based on the analysis carried out through multiple regression analysis with the aid of SPSS version 22 technique, the researcher evaluated the findings and from the P- value, interpreted that management information system have a positive significant relationship with the organizational effectiveness. This rejected the null hypothesis ( $H_0$ ) and



accepted the alternate hypothesis ( $H_a$ ). Thus, the continuous deployment of management information systems tools will immensely lead to the effectiveness of the NIM.

### **Overview of Chapter Five**

Conclusively, an implication of the research findings was addressed by filling the gaps via answering the research questions with the research variables and objectives. From the implications of the findings, the research limitations were discussed while recommendations were made for its possible applications and as well as for relevant possible future use and directions. In answering the research questions, the research problems were brought back into the context and formulated into five research problems (RP). These RPs were analyzed in response to the research findings or results for possible research solutions (RS). From the research findings, the researcher identified five possible boundary research solutions (RS) which also corroborates with the existing theories and research independent variables (IV) and constructed a proposed framework (see Figure 7). Therefore in order to facilitate the implementation of management information system on the NIM effectiveness, the researcher further recommended the application of the proposed framework (ERTBM) as an additional knowledge guide to fill the gaps. Thereafter, in an attempt to summarize the study, the researcher drew conclusions from the research findings and wrapped with a take home message of the entire study in the next section.

### **Summary of Findings and Conclusion of the Research Questions**

In alignment with sequential mixed method adopted, the five research questions formulated by the researcher for this study were further evaluated through quantitative survey (questionnaires distributed) with that of the results from the qualitative (of interviews and group discussions) data respectively. Therefore, table 29 gives a summary and conclusion emanating from the research findings from the research questions (RQ), the research objectives (RO), the

underpinning existing literature theories (ELT) and how the results responds to the study problems. Thereafter, the summary and conclusions were reached after the analysis of findings.

**Table 29**

*Summary of findings and conclusions*

Research Objective (RO)	Summary and Conclusions
<b>Level of Business Operations (RO1)</b>	The literature review here is the <b>Human Relation Theory (ELT1)</b> used to identify the type of traditional method of operations
<b>RQ1</b> = what were the levels of business operation during the pre-chartered? ( <b>IV1</b> )  <b>RP1</b> - Administrative Inefficiency,	<p>Both Quantitative and Qualitative results and findings shows a low relationship between management information system and organizational effective during the pre-chartered era due to the administrative use of outdated facilities for.</p> <p><b>RS1</b> :Hence, it can be concluded that the level of operations can improve with a modern change in administration of NIM,</p>
<b>RQ1</b> = what were the levels of business operation within the post-chartered? ( <b>IV3</b> )  <b>Action Point:</b> Develop a plan for sustainable development of MIS integration and application	<p>The literature review here is the <b>Theory of Planned Behaviour (ELT3)</b> used to explore how people behaviour can change.</p> <p>Quantitative and Qualitative results and findings shows that level of operations during the post-chartered era showed a high relationship between management information system (MIS) and organizational effectiveness due to the use of modern use of technology. For the quantitative score is above 3 while the qualitative score is above 2 which indicate significant impact on management information system on NIM effectiveness.</p>
<b>Re-engineering (RO2)</b>	The literature review here is the <b>Resource Based Theory (ELT2)</b> which advocates for competitive advantage over other organizations



	MIS developments.
<b>Emergence of information technology boost (RO4)</b>	The Literature review here is the <b>Diffusion of Innovation Theory (ELT4)</b> because of the influx of new technologies to boost MIS integration
<p><b>RQ4=</b> How did the emergence of information technology boost management information systems on organizational effectiveness? (IV4)</p> <p><b>RP4-</b> Lack of Management Information system (MIS) integration</p>	<p>Both Quantitative and Qualitative results and findings agree and show that there is a high relationship between emergence of information technology and Organizational effectiveness in the post-chartered era.</p> <p><b>RS4:</b> is resolved by fully integrating MIS in NIM. An improvement in the integration of information technology tools will significant impact on the MIS integration of NIM and thus lead to its organizational effectiveness.</p> <p>To successfully drive the integration of MIS by the boost in information technology a man power plan is developed using the existing literature theory known as <b>Gap Analysis Model</b>.</p>
<b>Role of advanced technological infrastructures on MIS (RO5)</b>	The literature review here is the <b>Technological Acceptance Model - TAM (ELT5)</b> which identifies whether a theory should be accepted or not.
<p><b>RQ5=</b> How did the role of advanced technological infrastructures affect MIS? (IV5).</p>	Both Quantitative & Qualitative results and findings agree that advanced technological infrastructure enhanced management information systems, which increases

<b>RP5-</b> Poor technological Infrastructure	<p>organizational effectiveness in human resource development in the post chartered era of the Nigerian Institute of Management.</p> <p><b>RS5</b> by Acceptance &amp; adoption in technology through its usage and enabling of more investments in advanced technological infrastructures for MIS effectiveness in NIM.</p>
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*Source:Fieldwork. Note: RP stands for the research problem, RS stands for research solutions.*

In the process of answering the above research questions of the quantitative and qualitative data, the research problems were addressed and converted as research solutions from the respondents result of the study. These mixed data solutions which were merge as a solid block having significant impacts of management information systems on NIM were discovered.

**Table 30**

***Quantitative and Qualitative Data Results Compiled to Form a Solid Block***

Quantitative Data Result	Result fall within Durbin Watson acceptable range, fall within 5% level of significance and fall within acceptable R model.
Qualitative Data Result	Result fall within acceptable total score.
Decision	At 5% ( $> 0.05$ ) level of significance, Management information system significantly impacts the Organizational effectiveness with respect to human resources development in the Nigerian Institute of Management. Hence, the $H_a$ (alternate hypothesis) is supported and acceptable for this study while the $H_o$ (null hypothesis) is rejected.

Therefore based on the findings/result of this study, it indicates that the Advanced Technological Infrastructure places a major role in decision making and business services impacting management information systems effectiveness in the post chartered era of the institute's human resources development. Hence, the conclusion from this research is that organizations such as the Nigerian Institute of Management should accept and adopt technologies for its organizational effectiveness by investing in new technology or the full utilization of the new and existing technologies. Through the perceived usage and adoption of technology, it supports the existing fifth literature (**ELT5**) which emanated from Technological Acceptance Model and is known as Unified Theory of Acceptance and use of Technology (**UTUAT**).

This study further recommends that organizations should focus on investing in advanced information technology facilities to improve their competitive advantage by making better decisions (as seen in the fifth independent variable and the fifth research question and objectives **IV5, RQ5 and RO5**). As the study confirms that there is significant relationship between management information system and organizational effectiveness and this was evident in all the independent variables (IV) used (see Fig. 5.1). Together they show significant influence on organizational effective (which acts as the dependent variable - DV).

While also concluding that the significance of the study is expected to contribute to the existing body of knowledge on professional organizations such as the educational and financial institutions by highly encouraging the adoption of the proposed recommended research framework as a guide for similar or previous works. As the study's implementation will not only contribute to the existing body of knowledge as an archive but it will practically add new knowledge and support the existing body of knowledge with the continuous deployment of

advanced technological infrastructures meant to boost organization effectiveness through the impact management information systems in human resources development.

Significantly, the study's expected new knowledge will hopefully extend knowledge for the human resources development when deployed robustly. For the outcome of this study is expected to help not only the human resource officials but other managers at all levels in order to appreciate management information system as a necessary effective organizational development tool. Also organizations can be able to work remotely and avoid office health hazards by improving their Information technology infrastructural developments. Bearing in mind that the quest for new knowledge initiated the desire for this research work, the researcher carefully focused on using the Nigerian Institute of Management which is a multi disciplinary professional regulatory institution with over a million stakeholders to arrive at a multi perspective complexity of data from the sampling method used in the data analysis and also focused on how to successfully integrate the mixed methods data (using sequential explanatory mixed method).

Subsequently, it bridges or closes the the research and methodological gaps by the application and integrating of the identified research management information systems variables. However, the researcher also recommended the optional use of more than one industry (several other industries) for an area of further research studies to compare with the multi-perspective mixed method data of the case study used here. Therefore, the conclusion is in line with the research objectives, answers the research questions and support the alternate hypothesis (by implication section) and also supports the existing literatures by specifying that with the continuous deployment, application and investments in advanced infrastructural technologies, management information systems will be maximized to ensure the sustainability of organizational effectiveness in the Nigerian Institute of Management (Chartered).

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## APPENDICES

### Appendix A: Introductory/Confirmation Letter For Research



25<sup>th</sup> November, 2020

**To Whom It May Concern**

This letter serves as confirmation that Ulonnam David Ehere with student ID number R1809D6163267 is currently enrolled in the Doctorate of Philosophy (PhD) programme of Unicaf University in Zambia.

The student is currently undertaking research for the Dissertation, on the below topic:

'The Impact of management information systems on organizational effectiveness in Human Resources Development'.

If you require any additional information or clarification please do not hesitate to contact us in the first instance.

Best regards,


A handwritten signature in black ink, appearing to read "Selia Masoura".

Ms. Selia Masoura

Registrar

## Appendix B: Letter of Authorization to Conduct Research

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# NIGERIAN INSTITUTE OF MANAGEMENT (CHARTERED)

Plot 22, Idowu Taylor Street, Victoria Island,  
P. O. Box 2557, Lagos, Nigeria.  
0811 700 0753

registrar@nim.ng; membership@nim.ng; training@nim.ng  
www.nim.ng

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24th September, 2021.

**TO WHOM IT MAY CONCERN**

Dear Sir/Madam,

**LETTER OF AUTHORISATION TO CONDUCT RESEARCH**

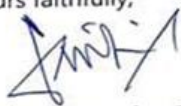
This serves as an authorisation to **MR. EBERE ULONNAM DAVID** to conduct the research project titled *"The Impact of Management Information Systems on Organisational Effectiveness in Human Resources Development"*.

Upon a review of the request by the student, we are glad to offer him an opportunity to conduct the study in our Institute. All interviews, filed surveys, observations around the business and the distribution of questionnaires are approved and will be duly supervised by the researcher.

If you have any further concerns or require additional assistance, kindly feel free to contact the undersigned.

Thank you.

Yours faithfully,



**Emma Emeasoba, MNIM**  
Assistant Director, Membership Services

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<b>Principal Officers:</b> <b>Mrs. Patience E. Anabor, FNIM</b> President & Chairman of Council	<b>Major General Abdullahi I. Muraina (rtd.) FNIM, mni</b> Deputy President	<b>Dr. (Mrs.) Christiana Vincent Atako, FNIM</b> National Treasurer	<b>Mr. Tony Fadaka, FNIM</b> Registrar/Secretary to Council
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**Past Presidents:** Dr. C. E. Abioye, FNIM, CNIM; Mr. G. W. Bawa, FNIM (J); Dr. M. O. Omosoleye, FNIM, CNIM; Chief A. A. Adedigbo, FNIM (J); Mr. G. O. Omosoleye, FNIM, CNIM, CFR (J); Chief F. O. Ogunlana, FNIM, CNIM, HE (J); C. O. Kolade, FNIM, CNIM, CON; Engr. Teju Oyeleke, FNIM, CNIM, OON (J);  
Surge Adeniranle Kuforo, FNIM (J); Mrs. M. R. A. Adeniran, FNIM, CNIM, OON; Mr. A. A. Adeniran, FNIM, CNIM, Chief (Dr.) M. O. Akintola, FNIM, CNIM (J); Mr. A. Ogburn, FNIM, CNIM, Chief L. E. A. Akinola, FNIM, CNIM, OON (J); Alhaji Mohammed Abubakar, FNIM, CNIM, MFR;  
Sir Peter O. Edbergsson, FNIM, CNIM (J); Dr. (Mrs.) Sally N. Adulwa-Bolajoko, FNIM, OON, Assanjo (Dr.) Michael Olowale-Cole, FNIM, CON; Dr. Nelson U. O. Uwagbo, FNIM, mni, FPSN; Emeritus Professor Munzali Jibot, FNIM, CFR, Prof. Oluokunle Iyanda, FNIM

**NIM Vision - To be the Source and Symbol of Management Excellence**

## Appendix C: UREC Approvals (REAF – DS3 and DS1)


UREC Desision, Version 2.0 ☐

**Unicaf University Research Ethics Committee  
Decision**

**Student's Name:** Ulonnam David Ebere

**Student's ID #:** R1809D6163267

**Supervisor's Name:** Dr Mary Mutete Mwanzia

**Program of Study:** UU-DOC-900-3-ZM ▼

**Offer ID /Group ID:** O30638G31852

**Dissertation Stage:** DS 3 ▼

**Research Project Title:** The Impact of Management Information System on Organizational Effectiveness by Human Resources Management: A Case Study of Nigerian Institute of Management (Chartered)

**Comments:**

**Decision\*:** B. Approved with comments for minor revision ▼


**Date:** 17-Feb-2022

\*Provisional approval provided at the Dissertation Stage 1, whereas the final approval is provided at the Dissertation stage 3. The student is allowed to proceed to data collection following the final approval.

**UREC's Decision****Student's Name:** Ulonnam David EBERE**Student's ID #:** R1809D6163267**Supervisor's Name:** Dr. Mary Mutete MWANZIA**Program of Study:** UUZ: PhD Doctorate of Philosophy ▼**Offer ID /Group ID:** O20267G20174**Dissertation Stage:** 1 ▼**Research Project Title:** THE IMPACT OF MANAGEMENT INFORMATION SYSTEMS ON ORGANIZATIONAL EFFECTIVENESS IN HUMAN RESOURCES DEVELOPMENT.**Comments:****Decision:** A. Approved without revision or comments ▼**Date:** 08-Oct-2020



## Appendix D: Template of Informed Consent Form Used


UU\_IC - Version 2.1

**Informed Consent Form**  
**Part 2: Certificate of Consent**

**This section is mandatory and should to be signed by the participant(s)**

<b>Student's Name:</b>	Ulonnam David EBERE
<b>Student's E-mail Address:</b>	udebere2000@gmail.com
<b>Student ID #:</b>	R1809D6163267
<b>Supervisor's Name:</b>	Dr. Mary Mutete MWANZIA
<b>University Campus:</b>	Unicaf University Zambia (UUZ) ▼
<b>Program of Study:</b>	Doctor of Philosophy, UUZ
<b>Research Project Title:</b>	The impact of Management information systems on organizational effectiveness in human resources development using the Nigerian Institute of Management as a case study.

I have read the foregoing information about this study, or it has been read to me. I have had the opportunity to ask questions and discuss about it. I have received satisfactory answers to all my questions and I have received enough information about this study. I understand that I am free to withdraw from this study at any time without giving a reason for withdrawing and without negative consequences. I consent to the use of multimedia (e.g. audio recordings, video recordings) for the purposes of my participation to this study. I understand that my data will remain anonymous and confidential, unless stated otherwise. I consent voluntarily to be a participant in this study.

Participant's Print name:

Participant's Signature:

Date:  17-Feb-2022

**If the Participant is illiterate:**

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had an opportunity to ask questions. I confirm that the aforementioned individual has given consent freely.

Witness's Print name:

Witness's Signature:

Date:



## **Appendix E: Research Tools (Questionnaires, Interview and Group Discussions)**

### **Distribution of Questionnaires**

This questionnaire is meant to gather information regarding the impact of management information systems on organizational effectiveness in human resources development using the Nigerian Institute of Management as a study.

### **CONFIDENTIALITY CLAUSE:**

The responses you provide will be used for academic research purposes and will be strictly confidential.

### **SECTION A: BIODATA**

- 1. What is your age (For all)?**
- 2. What is your gender (For all)?** Male [    ], Female [    ].
- 3. How many years of working experience do you have (For Staff only)?**
- 4. What is your educational qualification (For all)?** NCE/OND [    ], HND/BSc [    ], MSc/ MBA, PhD [    ], NIM/ACA/ICAN/CNA [    ], Others [    ].
- 5. What is your level in organization (For Staff Only)?** Top Management [    ], Mid Management [    ], Operational Team [    ].
- 6. How long have you been a member of the institute (For Members Only)?**
- 7. What is your professional grade (For Internal Stakeholders)?** Graduate [    ], Associates [    ], Member [    ], Fellow [    ].
- 8. Role Carried Out (For External Stakeholders only)?** Government Officials/staff [    ], Media Practitioner [    ], Medical Practitioner [    ], Legal Practitioner [    ], Engineers [    ].

### **SECTION B: THE IMPACT OF MANAGEMENT INFORMATION SYSTEMS ON ORGANIZATIONAL EFFECTIVENESS IN HUMAN RESOURCES DEVELOPMENT**

This section aims at investigating the impact of management information systems using the research questions via independent variables (framework); Levels of business operations (Pre-Chartered)<sup>1</sup>, Reengineering the Structure/Extent of Human Resource Penetration<sup>2</sup>,

Leadership style and administration (Post-Chartered)<sup>3</sup>, Emergence of information technology<sup>4</sup> & Advanced technological infrastructure<sup>5</sup> on the dependent variable (Framework); Organizational effectiveness of the Nigerian Institute of Management in human resources development.

**Instructions:** Using the following likert scale in a multiple-choice questionnaire format,

<b>SA</b>	Strongly Agree option	5
<b>A</b>	Agree option	4
<b>N</b>	Neutral option	3
<b>D</b>	Disagree option	2
<b>SD</b>	Strongly Disagree option	1

Kindly, tick **one of option** in the spaces provided below.

<b>Research Frame work and Questions</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
<b>Management Information System impact on organizational effectiveness in human resource development.</b>					
1. There are pre and post chartered eras in the Nigerian Institute of Management which lead to human resources and change management strategies.					
2. Human resource development was not very effective in the pre chartered era due to the use of outdated services.					
3. During the Post-chartered era, the provision of modern information technology services was channeled through change management structures (such gap analysis and diffusion of innovation theory).					
4. The boosts in technology lead to the use of management information systems (MIS) facilities which enabled ease of business operations.					
5. The advance in technological infrastructures cemented the					

relevance of MIS in Human Resource Development during the post-chartered era & its acceptability (Technology Acceptance Model-TAM) is a major drive for NIM effectiveness.					
<b>Levels of Business Operation (Research Question One)</b>					
1. The levels of business operation in the pre-chartered era lead to change management strategies.					
2. Levels of business operation are different with regards to management information systems drive in human resources development during the pre & post chartered era of the organization.					
3. The level of business operation in the post-chartered era is one major MIS drive that helps the Human resources development.					
<b>Re-engineering and Structure/Extent of Human Resource Penetration (Research Question Two)</b>					
1. The re-engineering of an organization has impact on the Human resources development					
2. There is a major difference in the extent of Management Information Systems penetration in human resources development within the pre & post chartered eras of the organization.					
3. The Structure of an organization has impact on the Human resources development					
<b>Leadership Style/Interactive Effects of Human Resource and Change Management (Research Question Three)</b>					
1. The leadership style of an organization has impact on the Human Resources Development					
2. Involvement of Human Resources management in change management and administration is remarkable.					

3. Human Resources Management involvement in change management and administration is effective in the human resources development of the organization within the pre & post chartered era of the organization.					
<b>Emergence of Information Technology (Research Question Four)</b>					
1. The use of Information technology boosts management information system (MIS) based facilities and strengthens the business operations.					
2. Information technology improves management information systems in human resources development for organizational effectiveness at the post-chartered era.					
3. Information Technology leads to MIS integration for organizational effectiveness					
<b>Advanced Technological Infrastructure (Research Question Five)</b>					
1. Advanced technological infrastructure places a major role for executive decision making					
2. Advanced technological infrastructure places a major role in business services.					
3. Advanced technological infrastructure places a major role in decision making and business services impacting management information systems' effectiveness in the post-chartered era of the institute's human resources development					

### Electronic Distribution of Questionnaires

Using google forms, log on to: <https://forms.gle/ysijBQFqwaewqjEU8>

**Thank you for your participation**

## **Interview and Group Discussions**

### **Section A: Demographics**

- 1. What is your age (For all)?**
- 2. What is your gender (For all)?** Male [    ], Female [    ].
- 3. How many years of working experience do you have (For Top Management Staff only)?**
- 4. What is your educational qualification (For all)?** NCE/OND [    ], HND/BSc [    ]  
MSc/ MBA, PhD [    ], NIM/ACA/ICAN/CNA [    ], Others [    ].
- 5. What is your position/role in the organization (For Top Management Staff Only)?**
- 6. How long have you been a member of the institute (For Members Only)?**
- 7. What is your professional grade (For Internal Stakeholders)?** Member [    ], Fellow [    ].
- 8. Role Carried Out (For External Stakeholders only)?** Government Officials/staff [    ],  
Media Practitioner [    ], Medical Practitioner [    ], Legal Practitioner [    ], Engineers [    ].

### **Section B: Interview questions.**

1. Do you have any knowledge about management information system (MIS) before?
2. What do you understand by Human Resources development (HRD)?
3. Is Human Resources development practiced in the organization?
4. Is Management Information System functional in an organization like NIM?
5. What can you say about the pre and post chartered era of NIM?
6. What impact or effect do MIS have on Human Resources development (HRD)?
7. Is the leadership style, structure and reengineering impactful on the effectiveness of

Human Resources Development?

### **Section C: Focus Group Discussions**

1. Have you also heard about Human Resources development? (If Yes, discuss...)
  2. Are you aware that there are pre and post chartered era of NIM? (If Yes, discuss...)
  3. Do you think there are any differences in the penetration of MIS in Human Resources development between the pre and post chartered era?
- Thank you for your time.**