



**NEAR EAST UNIVERSITY  
INSTITUTE OF GRADUATE STUDIES  
DEPARTMENT OF INNOVATION AND KNOWLEDGE MANAGEMENT**

**THE IMPACT OF KNOWLEDGE MANAGEMENT AND ARTIFICIAL  
INTELLIGENCE ON ORGANIZATIONAL PERFORMANCE OF  
MANUFACTURING FIRMS IN NIGERIA**

**M.Sc. THESIS**

**TAMARUAKILE KELVIN AMANAH**

**Nicosia  
June, 2023**

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**TAMARUAKILE KELVIN AMANAH**

**Supervisor**

**Prof Dr. Fezile Özdamlı**

**Co-Supervisor**

**Assist. Prof. Dr. Selin ÜZELALTINBULAT**

**Nicosia**

**June, 2023**

### Approval

We certify that we have read the thesis submitted by **TAMARUAKILE KELVIN AMANAH** titled **“THE IMPACT OF KNOWLEDGE MANAGEMENT AND ARTIFICIAL INTELLIGENCE ON ORGANIZATIONAL PERFORMANCE OF MANUFACTURING FIRMS IN NIGERIA** and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Social Sciences.

Examining Committee      Name-Surname

Signature

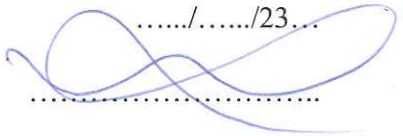
Head of the Committee: Prof. Dr. Şerife Eyüpoğlu

Supervisor\*: Prof. Dr. Fezile Özdamli

Supervisor: Assist. Prof. Dr. Ayse Hyusein

  
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Approved by the Head of the Department

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Prof. Dr. Şerife Eyüpoğlu

Head of Department

Approved by the Institute of Graduate Studies

.... /...../23...

Prof. Dr. Kemal Hüsni Can Başer

Head of the Institute


## **Declaration**

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

**TAMARUAKILE KELVIN AMANAH**

23 June 2023

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Finally, I would love to thank God, for walking with me through this life changing experience, guiding me and protecting me from all obstacles, indeed he is a Faithful God. He is the author and finisher of my life and I will keep trusting in him.

## **Abstract**

### **The impact of knowledge management and artificial intelligence on organizational performance of manufacturing firms in Nigeria**

**Tamaruakile Kelvin Amanah**

**Supervisor, Prof Dr. Fezile ÖZDAMLI, Assist. Prof. Dr. Selin  
ÜZELALTINBULAT**

**MA, Innovation and Knowledge Management Department**

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Knowledge management which has risen to prominence in the fields of organizational leadership and management thanks to the attention paid to it by academics, is essential for gaining a competitive edge based on an organization's knowledge. Also, the use of Artificial intelligent has become indispensable in modern Nigerian factories. The purpose of this study is to find out the impact of knowledge management and artificial intelligence on organizational performance of manufacturing firms in Nigeria. The research population includes all employees from (5) manufacturing firms in Nigeria namely: Dangote Ltd, HoneyWell, Nestle, Unilever and UAC. Out of 350 employees from Dangote Ltd, HoneyWell, Nestle, Unilever and UAC departments, including the operations department, human resources department, marketing department, public relations department, and finance department, were given the questionnaire. The research finding shows that artificial intelligence and knowledge management practices have a significant relationship with organizational performance. It is evident that employees gain more trust in interacting with and exchanging tacit knowledge when AI technologies are used to ensure knowledge engagement in the organization.

**Keywords:** artificial intelligence, knowledge management, organizational performance, internalization, combination, socialization, externalisation.

## ÖZ

### **Bilgi yönetimi ve yapay zekanın Nijerya'daki imalat firmalarının organizasyonel performansı üzerindeki etkisi**

**Tamaruakile Kelvin Amanah**

**Danışman, Prof Dr. Fezile ÖZDAMLI, Yard. Doç. Dr. Selin  
ÜZELALTINBULAT**

**MA, Innovation and Knowledge Management Department**

**June 2023, 92 pages**

Akademisyenlerin önem vermesiyle örgütsel liderlik ve yönetim alanlarında öne çıkan bilgi yönetimi, bir örgütün bilgisine dayalı rekabet avantajı elde etmesi için gereklidir. Ayrıca modern Nijerya fabrikalarında Yapay zeka kullanımı vazgeçilmez hale geldi. Bu çalışmanın amacı, bilgi yönetimi ve yapay zekanın Nijerya'daki imalat firmalarının örgütsel performansı üzerindeki etkisini bulmaktır. Araştırma popülasyonu Nijerya'daki (5) imalat firmasının tüm çalışanlarını içerir: Dangote Ltd, HoneyWell, Nestle, Unilever ve UAC. Operasyon departmanı, insan kaynakları departmanı, pazarlama departmanı, halkla ilişkiler departmanı ve finans departmanı dahil olmak üzere Dangote Ltd, HoneyWell, Nestle, Unilever ve UAC departmanlarından 350 çalışana anket verildi. Araştırma bulgusu, yapay zeka ve bilgi yönetimi uygulamalarının örgütsel performans ile anlamlı bir ilişkisi olduğunu göstermektedir. Yapay zeka teknolojileri kuruluşta bilgi katılımını sağlamak için kullanıldığında, çalışanların zımnî bilgiyle etkileşime girme ve bilgi alışverişinde bulunma konusunda daha fazla güven kazandığı açıktır.

**Anahtar Sözcükler:** *yapay zeka, bilgi yönetimi, örgütsel performans, içselleştirme, birleştirme, sosyalleşme, dışsallaştırma.*

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## Abbreviations

**KM** – Knowledge management

**AI** –Artificial intelligent

**SO**-Socialization,

**CO**-Combination

**EX**-Externalization

**IN**-Internalization

**OP**-Organizational Performance

## CHAPTER 1

### INTRODUCTION

#### **Background to the Study**

Knowledge, along with other physical characteristics of organizations (such as land, human resources, equipment, capital, etc.), is seen as the most essential organizational asset and the source of competitive advantage in today's knowledge-based era. Knowledge performance is viewed as fundamental to the survival of any given business (Easterby-Smith and Prieto., 2018). Many professionals consider it essential for businesses to realize their full potential and value (Karami et al., 2015). Knowledge, which is an ever-evolving amalgam of experience, value, information, and expert vision, serves as the basis for evaluating and integrating new data and information. Knowledge within an organization comes not only from the heads of its experts, but also from its laws and regulations, processes, procedures, storage facilities, and written records (Pandey and Dutta., 2013).

Knowledge management (KM), which has risen to prominence in the fields of organizational leadership and management thanks to the attention paid to it by academics, is essential for gaining a competitive edge based on an organization's knowledge. Knowledge management techniques would lead to increased adaptability and shrewdness in organizations, which in turn would help with issues like problem-solving, dynamic learning, strategic planning, decision-making, and avoiding burnout (Zollo and Winter., 2012).

The use of Artificial intelligent (AI) has become indispensable in modern Nigerian factories. The growth of computers and other forms of technology over the past few decades has unquestionably been the single most important factor influencing modern businesses. Information gathering, transmission, logging, recording, intelligent decision-making, and presenting information in the desired format and location are all part of artificial intelligence, a branch of computer science that goes beyond the traditional notions of keypunching, data storage, and report printing. It is clear from Greaves's (2015) research that AI is altering many facets of human life. It's changing how we work, play, and live. As a result of the digital revolution, humans can now precisely manipulate data mathematically, communicate it, and alter it as they see fit.

The amount of computing power available to humans, according to Marshall (2012), is growing steadily. The influence of computers and communication technologies is all-pervasive at this point. Information technology may be the most promising industry right now. There's no doubt that it modified the meaning of "convenient."

Artificial intelligence has had a profound effect on Nigeria's manufacturing sector, and "AI" has become something of a catchall in the modern lexicon. According to Long & Long (2019), the computer was the driving force behind the third major revolution in human history. Financial performance, cost efficiency, task innovation, customer satisfaction, and management control are just some of the reasons why technology applications are crucial, according to (Morton., 2018). With the help of computers, Nigeria's manufacturing sector could see significant gains in output and profitability. As Morton (2018), goes on to explain, effective AI and implementation strategies help businesses greatly improve their performance and competitiveness.

According to a growing body of academic literature, AI usage has become critically important to global productivity in recent years (AgouramangIngam., 2013). The speed and scope of the world's transformation in response to the information technology revolution are unprecedented compared to just a decade ago. Dadashzadeh (2012) claims that one million people were online in January 1996, but by the turn of the millennium, that number had increased to over four hundred million, highlighting the rapid development of technology. A growth rate of 1333 percent in fewer than five years is indicative of the Internet's continued disruptive influence on traditional modes of production and exchange as well as on the delivery of public services, the education of children, the provision of health care, and the administration of social affairs.

Nigerian manufacturers face many difficult challenges brought on by technological advancements. The introduction of AI has the potential to completely alter a company's competitive landscape. However, as the scale of technology investments grows, so does the pressure on managers to justify those expenditures. There has been much uncertainty and anxiety about the productivity and cost efficiency consequences of managerial technology on manufacturing firms in Nigeria, and one way out of this rut is to strengthen the capacities for evaluating and monitoring the impact of technology on productivity.

## **Statement of the Problem**

The importance of knowledge management in industrial organizations is widely acknowledged, whether it be in the form of informal work groups, formal project teams, or communities of practice. Companies in the manufacturing sector may exist to accomplish a common goal, such as the distribution of a certain item or service. They are conceived of or spontaneously develop since no one participant can bring about the desired result. The fragmentation, specialization, and dispersion of knowledge that occurs with the division of labor necessitates the integration of a variety of complementary knowledge in order to attain the collective results. In order to reach the desired group goal, knowledge management has emerged as an integral aspect of the required effort (Boer., 2005).

Today's Nigerian manufacturers are ill-equipped to reap the benefits of knowledge management and AI in driving high performance in part because they are unaware of the field's nature and dynamics. They try to foster a culture of knowledge management by encouraging employees to disseminate and apply their findings, as well as by fostering an atmosphere of trust and establishing the technical infrastructure required to make this a reality, but their efforts have had little discernible impact on the organisation's capacity for innovation. These companies actively seek out and hire people with high levels of self-efficacy and initiative. Without improved contingency preparations to guarantee that the company's knowledge remains sustainable even if any employee leaves, the expertise of these individuals is lost when they retire or join another organization. However, most of these businesses are unable to extract their workers' knowledge because they have a poor grasp of the nature, distinctions, and functions of tacit and explicit knowledge in the workplace; and the method in which tacit and explicit information are gained, shared, codified, and recorded.

Therefore, This research will show how knowledge management and artificial intelligence are intertwined in improving the organizational performance of Nigerian manufacturing companies. Nigerian factories use any and all means at their disposal (Including newer technologies, improved procedures, and better tools) to boost output. However, There are many barriers that must be overcome before businesses can fully embrace and benefit from technology. These roadblocks could result from inadequate planning, ineffective human resource management, poor management, A lack of

financial resources, cultural, political, social, and governmental pressures, or other organizational, structural, and environmental constraints. This study will be guided by A well-defined research question and process-related objectives and aims.

### **Purpose of the study**

The purpose of this study is to determine the impact of knowledge management and artificial intelligence on organizational performance. The following are the objectives:

1. Evaluate the impact of integration of artificial intelligence into business process of manufacturing firms in Nigeria.
2. Analyse the impact of socialization of knowledge on organizational performance of manufacturing firms in Nigeria
3. Investigate the impact of externalization of knowledge on organizational performance of manufacturing firms in Nigeria
4. Analyse the impact of combination of knowledge on organizational performance of manufacturing firms in Nigeria
5. Investigate how internalization of knowledge influence organizational performance of manufacturing firms in Nigeria
6. Evaluate attitude towards knowledge management and its influence on organizational performance of manufacturing firms in Nigeria
7. Discover employees experience with AI and its influence on organizational performance of manufacturing firms in Nigeria.
8. Evaluate problems associated with AI adoption in manufacturing firms in Nigeria..

### **Research hypotheses**

H1: There is a significant impact of artificial intelligence on organizational performance.

H2: There is a significant impact of Knowledge management on organizational performance:

H2: There is a significant impact of socialization on organizational performance



H2: There is a significant impact of externalization on organizational performance

H2: There is a significant impact of combination on organizational performance

H2: There is a significant impact of internalization on organizational performance

### **Significance of the study**

There is a practical use for this research as well; as was previously noted, managers' expertise is a valuable asset in finding solutions to challenging situations. Management of knowledge in an organization may have a significant impact on productivity levels at both the individual and company levels. The results of this research will help managers foster a culture of sharing information across their organizations by encouraging communication between different departments and teams. Managers will be able to put in place the systems and safeguards essential for a culture of sharing expertise as a result.

Employees will be encouraged to foster a culture of knowledge management and artificial intelligence as a result of the study because doing so will greatly improve their problem-solving abilities and knowledge base, as well as alter the customary behavior of employees hoarding knowledge for the sake of personal power by fostering an appreciation for the idea that authority is bestowed upon those who become trusted sources of information. The research will educate professionals on how knowledge management and artificial intelligence may boost organizational performance.

As a result, it is hoped that this research will aid academics and researchers, particularly those working in the rapidly developing subject of knowledge management, in better comprehending the effect of knowledge management and artificial intelligence on organizational performance in the banking industry.

### **Limitations of the study**

People who claim to be too busy to complete a survey are more likely to provide inaccurate answers. The variety of survey replies is typically limited by the need that respondents be assigned to a single answer group. Examinees are not allowed to elaborate on their answers in the same way that they would in an interview.

In keeping with the limitations of any study, this one is focused on only five (5) Nigerian manufacturing industries. The purpose of this study is to examine how knowledge management methods and AI have affected the productivity of Nigeria's industrial enterprises. In addition, just five manufacturing firms in a specific location were the major focus of this study. Given the presence of these limits, it is possible that future research may find ways to overcome them. More research may be needed to confirm the results of this study in other emerging economies and thereby address the problem of generalizability. Similarly, this study might benefit from a comparison analysis of the effects of knowledge management strategies and artificial intelligence (AI) on the performance of different manufacturing organizations.

In the process of carrying this research, it is anticipated that the researcher will be impeded by constraints such as:

- **Attitude of respondents:** The attitude of respondents is likely to affect this research work. Most managers find it difficult giving out information they consider secret.
- **Finance:** Inadequate finance particularly limits the expansion of this study to accommodate more manufacturing firms and to cover more states for a good representation of the Nigerian manufacturing industry. However, to ensure a detailed work only five manufacturing firms will be selected in Nigeria for the study.
- **Time:** The time frame slated for this work is insufficient. However, the researcher intends to maximize the best of the minimal time frame.

### **Dissertation structure**

The research is broken down into five sections, with the first one covering the study's context, the problem's stated purpose, and the study's overall goals and objectives. In the second section, the authors examine recent research on topics such as knowledge management, artificial intelligence, and organizational performance, with a focus on its implementation and effects in industrial organizations.

The third chapter explains the rationale for the research and the procedures used to gather and analyze the data. The philosophical underpinnings of the inquiry are discussed in the introductory section.

The effects of knowledge management and AI on Nigerian manufacturing organizations are examined in depth in the fourth chapter, along with some last thoughts on the topic.

The study's results and conclusions are summarized in the fifth and final chapter. The research outcomes and contributions are highlighted as well.

### **Operational definition of terms**

**Artificial intelligence:** The capacity of an electronic processor or software robot to carry out activities often attributed with intelligent individuals.

**Combination of knowledge:** The act of combining entails the transformation of simple sets of explicit information into even more intricate sets of such knowledge.

**Business process:** it is the operation of any kind of company in providing an item or service to a paying consumer.

**Externalization of knowledge:** Knowledge is externalized when it is made clear, or crystallized, so that it may be communicated and used as the foundation for the development of new information. Sharing what you know with the world might fall under this category.

**Internalization of knowledge:** Internalization is the mental process that turns fresh information into long-term remembrance.

**Knowledge management:** The term "knowledge management" is used to describe a group of practices concerned with the development, dissemination, application, and administration of an organization's accumulated body of information and expertise. It's an approach to problem-solving that integrates insights from other disciplines to better put that knowledge to work for a company.

**Organizational performance:** Organizational performance is defined as the degree to which an organization achieves its goals and makes the most of the results it produces. In today's modern workforce, organizational performance may be defined as an organization's ability to achieve its goals while being subject to ongoing change.

**Socialization of knowledge:** Knowledge gained as a whole via the actions and decisions of many individuals acting autonomously.

## CHAPTER 2

### LITERATURE REVIEW

#### **Introduction**

The purpose of this research is to examine how knowledge management and AI have affected the organizational performance of Nigeria's industrial sector. The literature review for the study is included in this section. The following categories' foundational works will be discussed: examining the many conceptual/theoretical frameworks and models that investigate indicators of knowledge management, AI, and difficulties relating to knowledge management and AI adoption. The effectiveness of the organization will be addressed thereafter. Integration, socialization of knowledge, combination of knowledge, and internalization of knowledge will also be examined as they pertain to this topic.

#### **Artificial Intelligence Applications (AI)**

Today's technology would not be where it is without the development of artificial intelligence. Artificial intelligence has been used to increase productivity, reduce costs across the board, and enhance quality of life in many different sectors. These days, AIs have essentially ruled the world. Artificial intelligence (AI) is something that people deal with in many different settings, one of which being manufacturing enterprises in Nigeria. The study of artificial intelligence (AI) is devoted to developing computer systems that can accomplish tasks that normally require human intellect. Managers are responsible for several things, including facilitating effective channels of communication, coordinating activities, developing plans, and making sound decisions (Lacity and Reynolds., 2014). In this age of pervasive AI usage, managerial functions have been bolstered by the use of AI tools.

Managers in Nigerian factories need clear lines of communication to get their messages and rules through to their employees. As a result of advancements in AI technology, spam filters have emerged. Emails that pose a threat to a company's data security, such as phishing emails, may be detected and blocked with the use of spam filters. Spam filters have improved information safety by classifying inbound email messages. Managers, employees, and other stakeholders in Nigeria's industrial sector

rely on email as a primary means of communicating and sharing information. AI has helped management create effective data security measures by facilitating the use of automated spam filtering systems.

Workers, on the other hand, utilize AI helpers and pre-programmed replies to deliver online customer service. Most Nigerian manufacturing companies' online presences feature automated responders to address frequently asked questions from customers. To better serve their customers in this digital age, many companies are turning to digital marketing, and the use of intelligent assistants and responders has helped them do so (Zuhdi et al., 2019). Intelligent assistants help consumers interact with companies by answering commonly asked inquiries and facilitating human assistance if necessary. Managers at Nigerian manufacturing companies have used AI systems to boost interactions with and satisfaction among their clientele (Zuhdi et al., 2019). One way that businesses may stand out in today's information technology-driven markets is by improving their contact with customers.

Managers of Nigerian manufacturing companies monitor customer reactions to their wares on the companies' digital properties, including websites, social media profiles, and any other online communities to which they may be connected. Useful metrics for a business's online success include the percentage of site visitors who become new customers, the proportion of consumers who buy from the company again, the accuracy of rating systems, and the tone of customer feedback (Lee et al., 2017). Managers at Nigerian manufacturing companies may get insight into client opinions of their products and services by integrating data mining, sentiment analysis, and visualization. AI technology allows the essential analysis for a manager to make crucial judgments when the proper decision-making processes are in place. Management focuses on improving products and software, fixing consumer device systems, and developing customer-centric designs.

### **Integration of artificial intelligence into business process of manufacturing firms**

However, since 2010, AI has been flourishing once again, partly because to significant advancements in the computational capacity of computers and the availability of vast quantities of data (CIGREF., 2018). The emergence of a far more complex series of

algorithms, the development of low-cost graphics processing units (suitable of doing massive quantities of computations in a few moments, and the existence of extremely big, accurately annotated datasets have all added to this revolution in AI (Pwc., 2019).

Machine learning, deep learning, chatbots, neural networks, virtual assistants, and other AI-enabled technologies are having far-reaching effects on how businesses operate and are structured (CIGREF., 2018; Kuzey et al., 2014; Pwc., 2019). As a matter of fact, AI has already changed the way businesses operate and interact with their surroundings. With AI's introduction of a new paradigm for information management comes both a formidable problem and a tremendous opportunity for businesses, but realizing this potential will need a shift in perspective, approach, and training (Di Francescomarino and Maggi., 2020; Lee et al., 2018; Sikdar., 2018).

The Watson Health service is one of its many uses; it allows doctors to pool existing medical data with their own patient data to provide more individualized treatment, taking into account factors like the patient's preferences and any potential health risks (Kohn et al., 2014). The progress achieved in the field of AI research over the last decade has made it an unavoidable subject of conversation when discussing current developments. AI's significant advancements, which had been predicted since the 1960s, were confirmed in the 2000s with the advent of "Machine Learning" (automatic learning: machines "learn" from the datasets offered to them), the most recent development of which is "Deep Learning," which is based on neural networks (YoavShoham., 2018).

Machine learning trains neural network deep layers. Instead of modeling massive amounts of data (e.g., calculating all the potential chess moves or replacing scenes in films), neural networks learn by consuming millions of test data (medical diagnoses and efficacy of novel therapies, estimations of energy reserves, price forecasts) (Pwc., 2019; Zemouri, et al., 2019). With enough data, this AI can exceed humans in speed and accuracy.

Transportation (Falcone et al., 2007), Health (disease detection programs (cancers and other diseases) through Machine Learning and Deep Learning (Jiang et al., 2017), Customer Relationship Management (CRM) using conversational agents (Rubin et al., 2010), and NLP are just a few examples (Srivastava, et al., 2017). AI's inventiveness

and prowess may be used throughout the organization's value chain, combining R&D, maintenance (Pwc., 2019).

Considered a major driver of development, AI may help any manufacturing company accomplish the following goals:

- Improve goods and services (by adding new features) and enhance product and service recommendation processes; optimize and enhance the customer experience; increase the effectiveness of operations, maintenance, and supply chain operations; (retail and other industries (Pwc., 2019).
- Better forecasting and planning capabilities will allow for more quick and automated response to shifting market circumstances, the development of novel business models, and the optimization of the balance between supply and demand (Pwc., 2019)
- Automate threat intelligence and information systems; streamline IT function (IT system and processes); enhance sales process efficiency; detect fraud (banking and other industries); (Pwc., 2019)
- Prevent illness by predicting epidemics and acting on pharmaceutical vigilance; diagnose and treat pathologies (Koh and Tan., 2011); advocate for the prescription of tailored therapies; advise on diagnostic to aid in decision-making; (Johnson et al., 2018)
- Manage supply chains, logistics, and fleet assets across industries (especially useful in the logistics and transportation sectors) (Sikdar., 2018).

In reality, by 2025, three areas of AI will have the highest potential:

- Aware of, able to recognize, and able to avoid moving obstacles
- Medical records processing
- Recognizing and labelling static images

Between 2016 and 2025, these industries have the potential to bring in a total revenue of roughly twenty-one (21) billion euros (Tractica, 2018).



## **The impact of artificial intelligence on organizational performance**

According to Laudon and Laudon (2005), A.I. may be considered a commodity like capital and labor. Automation of tasks that formerly required a lot of human labor and drove up prices is becoming more common as artificial intelligence becomes more widely available. Information technology, especially network utilization, may help organizations reduce their cost of market entrance by enabling them to contract with external providers rather than relying on internal resources (Transaction costs). According to transaction cost theory, businesses and individuals have a similar incentive to reduce transaction costs as they have to reduce production costs, making this an important achievement of artificial intelligence. In the past, businesses have tried to lower their transaction costs by growing in size, increasing headcount, or acquiring their own suppliers and distributors. However, thanks to AI, companies can now reduce their overhead by becoming smaller while still benefiting from lower transaction costs through the use of networks. In addition, AI has the potential to cut down on administrative costs inside an organization (Agency Costs) by facilitating more efficient data collection and analysis, hence allowing for more human oversight (Laudon and Laudon., 2005). Therefore, the hypothesis formulated as follow:

H1: There is a significant impact of artificial intelligence on organizational performance.

## **Knowledge Management**

Knowledge management is a method by which an organization fosters the development and transmission of new concepts and knowledge among its personnel. This is a relatively recent notion that may have a broad number of implications (Oxford, dictionary management and business, 2019, 320). The term "knowledge management" is used to describe a set of methods that a company might use to extract the most useful information from the data it collects. Knowledge management is the process by which an organization's data, information, and experiences, as well as the attitudes and capabilities of its products, are gathered, organized, disseminated, and transformed so that they can be applied to strategic planning, problem solving, and decision making (khuraif., 2009)

Knowledge management, as described by Gupta (2000: 17), "helps organizations to identify, select, organize, and communicate the knowledge transfer needed for actions and experiences." According to research, the term "knowledge management" has come to refer to a broad process that aims to find, store, share, and use relevant information and expertise inside an organization (Filemon and Uriarte., 2018). Knowledge management is the practice of systematically generating, amassing, cataloging, storing, sharing, and using knowledge for the benefit of an organization and its ability to compete (Pandey and Dutta., 2013). Knowledge management strategies have been proved to have a positive impact on organizational performance by a broad range of local and international studies. Knowledge management has a favorable effect on organizational performance (Yang et al., 2014). They realized that a company's ability to innovate, delight its customers, and provide high-quality goods and services are all intertwined, and that the independent variable in this equation is consumers' command of relevant information.

Knowledge management's effect on the success of small and medium-sized firms was studied by (Gholami et al., 2013). Knowledge acquisition, information storage, information sharing, knowledge development, and knowledge application were all identified as crucial elements of knowledge management. They also noted that the most important characteristics of an organization's success were productivity, financial success, employee performance, innovation, professional contacts, and satisfied customers. In the end, they concluded that knowledge management would have a noticeable impact on the efficiency of micro, small, and medium enterprises.

### **Types of knowledge**

Any company hoping to better manage its stockpile of information will need to take a close look at its history of knowledge accumulation, in order to determine its strengths and weaknesses, refine its methods of categorization and use, and ultimately convert, exchange, transfer, and invest that information. For example, Najim (2018, 27) said, "knowledge No it's not a sort one similar." These are usually true because knowledge lacks a definite shape and cannot be contained in any one container. However, when a company creates a product or service requiring specialized knowledge, it typically draws on a wider pool of information than just that one area.

## **Explicit Knowledge**

Explicit knowledge is information that is not only accessible to others but also directly related to the organization's policies, procedures, programs, budgets, documents, and guiding principles and criteria that are all found in the organization's archives and records. Timetables, workings, communications, and other operational functions (Jain., 2019)

Information that can be represented graphically or numerically, such as scientific data, equations, visualizations, or product specifications, may be communicated more easily and widely. As a result, it is easy to disseminate this kind of information to others. With the use of IT, it may also transmit overt messages of knowledge sharing or transfer. The rapid transformation of the information and communication environment was facilitated by the widespread use of technology in distributing explicit knowledge. (Wiig, 2003, p. 207) That which can be checked and utilized immediately is what he calls "explicit knowledge," and he thinks it may be found in the form of either freely accessible common sense or organized documentation, processes, and computer programs.

Jacobs and Roodt (2007, p. 229) argue that only explicit knowledge may be recorded, communicated, or formulated in the language of authority. The distinction between "science" and "art" may be seen as a manner of categorizing the many types of knowledge that exist ( Luen and Al-Hawamdeh, 2001, 311-318).

## **Tacit knowledge**

The experiences of an organization and the information held in the brains of its employees constitute tacit knowledge (Rowley., 2013). The tacit knowledge Irick (2007) defines as "knowing what is already known about oneself in one's own home or one's own mind" "The technical knowledge of cognitive and behavioral knowledge that lies in the same individual but cannot be easily transferred to others, including the individual's experiences and ideas, norms, values, and emotions. So, it's fair to say that different people have different kinds of tacit knowledge stored in their heads, and that if an organization can find a way to incorporate even one of these people into its team, it will gain efficiency and a competitive edge in its line of work. Because tacit

knowledge is dependent on experience, it provides a distinct advantage in the marketplace. Nonaka and Takeuchi (1995) argue that tacit knowledge can be transmitted through social interactions between individuals, such as element socialization of cooperation model initiative, whereas Jain (2011) argues that tacit knowledge cannot be archived through meetings, face-to-face conferences, or electronic discussions.

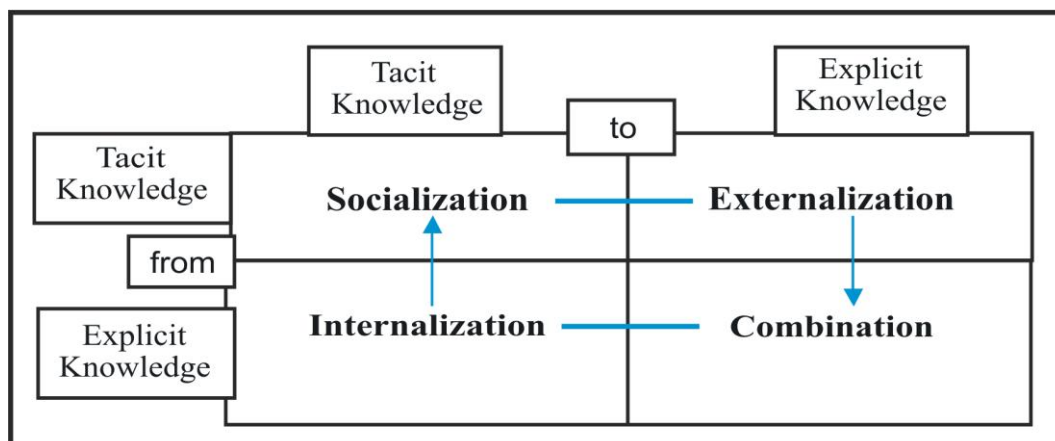
Tacit information is more valuable than explicit knowledge, according to Fombad (2009), since it may predict how well a company would do in a volatile market. According to the literature, experts concur that tacit knowledge is the most valuable kind of knowledge in organizations (McAdam and McCreedy, 1999, 101-113), since it may be put to use in the innovation and creative processes that increase the value of products and services. Employees' competences, expertise, and skills are examples of tacit knowledge (Li and Zhu, 2019, 291).

Organizational knowledge management methods have a significant impact on the manufacturing industry's ability to create, share, capture, and preserve tacit and explicit knowledge and competitive advantages (Li and Zhu, 2009, 8-291). In spite of their differences, explicit and tacit information are mutually beneficial, and any industrial organization would be wise to devote resources toward discovering effective ways to transfer and transform tacit knowledge into explicit knowledge.

It is the manager's responsibility to be aware of the knowledge at their disposal, to know how to identify the underlying tacit knowledge in the minds of its members, and to try to transform it into knowledge that is more visible in order to help the firm succeed.

### **The interaction between knowledge management practice in organization**

Knowledge management in organizations is represented by the SECI model's four interaction modes. Knowledge (both tacit and explicit) is transformed in the SECI paradigm, allowing for its transmission, sharing, and storage within the organization.

**Figure 1 SECI Model**

**Source: Nonaka& Takeuchi (1995)**

Since the premise of the SECI model Initiative is that tacit knowledge can be communicated and formalized, it follows that the initiative will likely succeed. According to Nonaka (1991, 6-69), the SECI model was widely implemented in the first generation of knowledge management (KM) initiatives and was a major factor in his subsequent success "In the realm of knowledge management, the fact that there are more references to substances shows how well they work (Grant and Grant., 2018).

#### **Socialization: Tacit to Tacit**

An example of socializing would be taking part in practical experience and learning tacit information such as mental models and common technical abilities. This is primarily a process that occurs between individuals, and it is possible to acquire tacit knowledge directly through interaction with customers and suppliers outside the organization as well as with people working within the organization. This will result in an increase in the amount of social capital an organization has per employee as well as an increase in the organization's overall levels of social capital (Nonaka, 2009, 635–652).

#### **Externalization: Tacit to Explicit**

Which includes the process of converting tacit knowledge into an understanding of the explicit, known as externalization, but which also entails the selection of statements describing the implied nature of concepts derived from the explicit, a method for discovering the most foundational understandings of relevant symbolism and theory,

and an approach to eliciting and translating the tacit knowledge of a large group of people, such as a customer base or a group of professionals, into a form that is readily understood. Dialogue is a powerful tool for both, but due to inequalities and gaps in people's mental representations and language, the resulting transformations are frequently insufficient and inconsistent (Nonaka and Takeuchi., 1995)

### **Combination: Explicit to Explicit**

Knowledge systems that incorporate this pattern for transferring knowledge to combination in a different set of knowledge of this explicit are particularly useful in the field of information technology, as explicit knowledge can be the transfer of documents and e-mail, databases, etc (Nonaka, 2009, 635- 652).

### **Internalization: Explicit to Tacit**

Learning by doing, connecting, and having information in the form of a tacit non-executable by the owner all contribute to the process of internalization, which entails the transfer or processing of explicit knowledge in order to comprehend and assimilate it

### **The Importance of Knowledge Management**

Organizations' knowledge is their true wealth, just as it is for individuals, populations, and communities; it guides their day-to-day operations and helps them realize their stated missions. As the only resource that is not subject to the law of contradiction yield and that does not suffer from the problem of scarcity as the only supplier that grows abundant accumulation, do not use decreases, knowledge is both power and wealth in the twenty-first century's secular society (Al-Ali et al., 2019). Currently, there are four main business sectors where KM is being increasingly used, and they are:

- Business organizations nowadays are often multi-national, multilingual, and multi-cultural as a result of globalization.
- Since the speed and workload of knowledge workers have grown, businesses that prioritize learning have had to accomplish more with less.

- Company amnesia, the increasingly transient nature of the modern workforce poses challenges to the continuity of the company's accumulated knowledge, necessitating constant education on the part of the knowledge worker, and the fact that few of us now envision spending our entire working lives at a single company.
- Through IT advancements, we now have more global connectivity

Here are some of knowledge management's benefits, as outlined by Baker and Badamshina (2004):

- Streamline operations and save expenses by eliminating inefficient or time-consuming practices; this will help to better serve customers by decreasing the amount of time it takes to provide the services they need.
- Maximized product sales and improved material output via better research, development, and application of current knowledge.
- Promote the open exchange of ideas as a means of encouraging innovation. The administrative device used to inspire businesses to unleash the ingenuity of their personnel, by providing an in-depth understanding of previously hidden connections and voids in their expectations.
- Ensure that the organization's varied efforts are coordinated to achieve its objectives. Increase the company's capacity to maintain a performance structure based on acquired knowledge and experience.
- Figure out what you need to know to properly record existing resources, create new ones, and take part in their deployment and assessment.
- Invest in the organization's intellectual capital by streamlining the process through which information created by others regarding the poor may be accessed.
- Inspire businesses to refresh it and adapt to a changing environment.
- Organizations may gain a lasting competitive edge if they are able to quickly and successfully implement innovative products and services that have been created by their employees.
- The availability of a framework for bolstering the organization's accumulated body of knowledge is an additional reason to support the team's efforts and reap the benefits of their possession of both material and immaterial resources.

## **Impact of knowledge Management on organizational performance**

Manufacturing companies have significant challenges, and knowledge management strategy is a policy instrument for economic progress (Shehu & Mahmood, 2014). Some findings support the considerable relationship between knowledge management practices and (Wang et al., 2007; Brachos et al., 2012; Nuruzy et al., 2013). While some research has shown a positive correlation between KM and business success, other studies have found conflicting results. In order to make the most of the chances presented by the manufacturing industry today, businesses in this sector need to reevaluate their current approaches. They need adaptable skills that allow them to recognize and capitalize on emerging possibilities while also refreshing their current bodies of knowledge. It is argued that a manufacturing company's knowledge management skills may serve as a competitive advantage and critical success component.

Findings on the connection between knowledge management and performance are equivocal. Al-Hakim and Hassan's (2011) research on knowledge management implementation in the Iraqi mobile telecommunications industry focused on the part played by middle managers in boosting company output. They found a good correlation between the constructs because middle managers play an important role in KM implementation. Knowledge management and the efficiency of businesses were the subject of research by Annette and Trevor in 2011. The researchers used survey responses from 189 upper and middle management employees and structural equation modeling to analyze the data. They concluded, from the perspective of a resource-based view (RBV), that some forms of knowledge capital—including organizational structure and the ability to put that structure to use—are causally linked to improved business outcomes, while others—including technological advancements and the ability to convert information—are less predictive of success.

However et al., (2011) found that knowledge management and productivity had a robust positive correlation. According to research by Kharabsheh, Magableh, I., and Sawadha, S., (2012), pharmaceutical companies in Jordan who use knowledge management strategies saw improvements in their company's bottom line. They debate the merits of knowledge management as a tool for enhancing productivity. In addition, they stress that a company's competitive advantage is built and maintained based on



its efficiency and aptitude in implementing knowledge-based operations. Data collection and analysis in this research are accomplished via the use of a questionnaire survey and the multiple regression technique. Thirteen drug companies were selected as an example. The study's findings indicated a favorable and statistically significant correlation between KM practices and business results.

Fattahiyan et al. (2012), used faculty members from the University of Isfahan in Iran as a sample frame for a research that sought to assess the effect of knowledge management resources (KM enablers and procedures) on organizational performance. There were two different questionnaires employed in this purely correlational investigation. The results suggested that there was some connection between the two variables. Ubeda and Garcia (2012) used data from 62 Spanish businesses in the region of Alicante to find a strong correlation between knowledge management and training and organizational performance. Nejatian et al. (2013) also found a strong correlation between knowledge management enablers and the knowledge generation process. Multiple linear regressions were used by Haris – Aslam (2013) to analyze the impact of knowledge sharing on students' grades. Students from four different Lahore universities were selected as a convenience sample for this study, with 148 total participants. The results showed a favorable correlation between information sharing and academic success. Abiola (2013) used survey questionnaires, correlation, and regression to analyze the effects of organizational learning, innovation, and financial performance on SMEs in Nigeria. The research found some evidence of correlation between the variables. As a result, it seems like the research had conflicting results.

Noruzi et al. (2013) surveyed 280 factories out of 126 that employ above 50 people in manufacturing. Data research using structural equation modeling revealed that knowledge management has an indirect effect on organizational performance through organizational innovation. With regression as their method of research, Slavkovic and Babic (2013) concluded that companies with more than fifty people had a better grasp on knowledge management and organizational performance. Knowledge management was shown to have a favorable and statistically significant effect on business outcomes. Streiger et al. (2014) looked at the impact of organizational structure and management level on how knowledge management is seen and implemented. A web-based survey yielded data from 155 participants, which was analyzed using analysis of variance. The results seemed to be contradictory; although organizational structure

type did have a favorable effect on knowledge management practices of information transfer, the impact of management level had the opposite effect.

Knowledge may be passed from one person to another by observation, imitation, and practice, as suggested by (Nickols., 2010). Within the context of a professional work setting, Shih et al. (2010) claim that tacit knowledge may be controlled by watching the human information process and shared by using the social information process mechanism.

During the process of socialization, people impart their tacit knowledge onto one another. Nonaka and Takeuchi's concept of "shared mental models" as "knowledge structures" possessed by team members forms the basis for this (Nonaka and Takeuchi., 1995). The team may then coordinate its activities and adjust its behavior to the needs of the work and the other members of the team based on the appropriate explanations and expectations they've formed. Traditional apprenticeships are great places to make friends and learn to work together. Apprentices acquire the tacit expertise required for their profession via observation and hands-on experience rather than formal education. The members of the organization, as well as the members of the organization's clients, suppliers, and linked enterprises, gain sympathized knowledge assets via socialization, such as the tacit knowledge gained through collaborative practical experience.

In order to succeed, businesses must rely on their own experiences to develop their own knowledge assets. Sympathized knowledge assets of the company are firm-specific, difficult-to-copy resources that provide a significant advantage to the business due to their tacit character (Nonaka et al., 2000). The parties involved may be inside to the company (sharing information) or external (dealing with clients and vendors) (involving knowledge coming from outside the firm). Meeting new people, learning by doing, and observing others are all effective socialization strategies (Nonaka and Takeuchi., 2004; Shih, Chang, and Lin., 2010).

Sharing of tacit information occurs via socialization, which might take the form of observation, practice, conversation, or the exchange of notes (Nonaka., 1994). There is never any clear shape attached to this kind of knowledge generation. According to Nonaka et al., (2000), this method of knowledge development is insufficient since

neither the educator nor the student gains an understanding of the knowledge's systematic structure. Given that socializing entails exchanging ideas, Marwick (2001) and Linderman et al. (2010), argue that the use of information technology helps foster group work and communities. Knowledge exchange may be facilitated by using online tools such as e-meetings and chat. During this time, individuals of the organization will exchange tacit knowledge via various forms of social contact (communications and interactions) such as conversations, the exchange of experiences, role-playing, simulated practice, direct observation, and the like.

Integrating all kinds of tacit and explicit knowledge, both from within and outside the organization, and discovering new relationships between them through a variety of activities, in order to better deal with problems and situations and increase the organization's effectiveness, is what we mean when we talk about an organization's capacity for innovation (Sousa and Hendricks, 2007, 273).

The term "knowledge management" is used to describe the process of disseminating and retaining information and knowledge inside an organization, as well as discovering connections between concepts in order to forge new alliances and improve efficiency in areas previously thought to be unrelated. That's according to (Muhammad, 2009, p. 800). The team's institution plays a key role in this process by generating new knowledge based on financial investment in emerging challenges and practices, which is then used to confront and solve those issues and practices. Everyone in an organization, not only those in designated "knowledge creation" roles, is accountable for the knowledge-generation process. As a result, each person is responsible for cultivating an atmosphere that encourages and facilitates their own knowledge-generation efforts. Therefore, the organization should strive to provide a conducive atmosphere for knowledge development by lowering barriers to communication and collaboration among staff members and encouraging them to share ideas and insights.

Instead of focusing solely on the most optimal solutions, knowledge management practices have allowed businesses to shift their attention back to the use of existing knowledge and thereby foster an environment conducive to innovation (Laudon and Laudon., 2012). What we mean when we talk about "knowledge sharing" is the act of passing along information learned by one person to another, whether that person is part of a group or an organization. It's also known as "knowledge sharing" or "knowledge

distribution," and its goal is to ensure that everyone has a chance to benefit from and contribute to the body of human knowledge by establishing a set of rules and procedures for its distribution to anyone who might be interested. In order to "deliver knowledge distribution (appropriate), to the right person at the right time, in an appropriate format, and cost-effectively," it is necessary to first share what has been learned about the process (Coakes, 2003, 42).

Knowledge sharing is highlighted by Turban, Mclean, and Wetherbe (2014), including the use of deliberate and the transfer of one or more ideas and visions, solutions, and knowledge to another person directly or through an intermediary, such as a computer-based system. Such information is usually exchanged either during the induction process (for new hires) or after an employee has left the company. Knowledgeable staff members are required to prepare for the post accordingly. Whether through formal means like reports, manuals, training, and official meetings, or through less formal means like meetings and informal discussions, which may be more effective but could result in the loss of some knowledge, this position supports effective means of sharing and transferring knowledge. A combination of structured and informal mechanisms may lead to greater efficiency in the transfer of knowledge and sharing, as there is no guarantee and transportation properly, the formal mechanisms have to ensure the safety and effectiveness of transmitted knowledge, but this may hinder the innovation process (Husain, 2011, 145).

Technology that facilitates communication among workers is a boon to both learning and innovation. Knowledge sharing plays a critical role in preserving an organization's body of know-how after a key employee has left. Seminars, conferences, team-building activities, written reports, performance evaluation programs, and the proposal of permanent employees are all possible ways to disseminate and discuss the acquired information. The process of knowledge transfer may encounter difficulties. These include factors like a lack of time, a lack of experience, and a lack of rewards and a lack of a clear mechanism for sharing what has been learned.

Organizations are in jeopardy as a result of the loss of many of the knowledge held by individuals who are leaving for whatever reason, and knowledge storage operations refers to those operations that include retention tool and search, access and retrieval, place, and show the importance of the storage of organizational memory. Therefore,

knowledge storage and retention are crucial, especially for organizations whose action depends on the recruitment and use of format and temporary advisory contracts to generate knowledge where high rates are present, as employees leaving the organization often take their tacit knowledge, which is not documented, with them (Zyadat, 2008, 99). Prior to an employee's departure, the company should make every effort to preserve their knowledge and experience. When employees leave for other companies or for other reasons, businesses risk losing their tacit knowledge unless they have a plan in place to keep it. As long as they remain on staff, employees will play an important role in the university's competitiveness through their strategic thinking, clear communication, and valuable contributions. Whenever an employee leaves an organization, they take their expertise with them.

Knowledge within an organization can be stored in one of three primary ways: The first step is to determine which important knowledge should be archived. Second, storing information by means of preserving, documenting, and archiving. Finally, periodically reload this memory (Almaadida, 2013, 64). Not only is it crucial to have a place to store and organize one's knowledge in order to make good use of it, but it's also crucial to be able to refer back to that information when it's needed, making it so that it truly belongs to the organization rather than to any one individual within it (Nemati, 2012, 1-11).

According to Tiwana (2018), organizations can make better use of tacit knowledge if they can find a way to transfer it directly to each other, thus making it explicit so that it can be shared across the organization. The organization's intangible assets are largely made up of people who are rich in tacit knowledge (such as long-serving employees, retired employees, and other talented experts) (Nonaka and Takeuchi., 1995). The study's author thinks universities' ability to produce high-quality goods and services could suffer if they were to lose access to 24 categories of tacit knowledge. The university's core competitive advantage relies on its ability to collect and store the knowledge of its knowledgeable staff.

The organization's expertise should be reflected in the quality of its outputs (services, processes, and products). It is worth noting that knowledge management studies and research have largely ignored this phase of the process, presuming instead that knowledge management begins with the storage of information and ends with the

creation of methods for retrieving and transferring that information to employees (yahyaw, 2011, 77-193).

It is recommended that only the applied knowledge be taken first, as it is more important than the same knowledge, and will lead to improved performance in areas such as innovation, storage, and distribution within an organization. Knowledge is gained through experience and teaching others, which necessitates learning detailed annotation, and education is gained through experimentation and application, which increases both the level and depth of knowledge. Knowledge management's overarching goal is to make better use of the organization's existing store of information and expertise so that employees can more efficiently carry out their duties and contribute to the organization's success. Knowledge management is based on the assumption that an organization will reap the most rewards from its efforts to apply information gained through research, analysis, and experimentation. The main goal of knowledge management is to "invest in knowledge to solve problems and improve the work of institutions that fit with the aim of achieving the objectives which achieve its growth and adjustment" (yahyaw, 2011, pp. 77-193); accordingly, it is imperative that you make use of the knowledge that is primarily of interest to you during this process. In order to achieve excellence and maintain a competitive edge, a company needs to do more than simply have access to superior knowledge; it must also apply that information in the most effective ways possible across all of its operations (khurayf and Nadya, 2009, 231-262).

Because of this, the ability to put one's knowledge into practice is more crucial than having the knowledge itself. To ensure that the institution makes greater use of knowledge management, appropriate steps should be taken to make it simple and convenient for its employees to find the information they need when they need it, and for that information to be suitable for the tasks at hand (Hashim, 2005, 37). Knowledge management is not reflected in the application, and the success of universities in knowledge programs is dependent on the size of the institution relative to the resources at their disposal. The challenge facing universities is not in the knowledge of the same discovery, but in how they are used to activate the knowledge generated and reflected in the application to add value. Therefore, we must not allow our daily routines to prevent us from reaping the benefits of the knowledge the University has acquired

through their research, teaching, and service. Therefore, the hypothesis formulated as follow:

H2: There is a significant impact of Knowledge management on organizational performance:

H2: There is a significant impact of socialization on organizational performance

H2b: There is a significant impact of externalization on organizational performance

H2c: There is a significant impact of combination on organizational performance

H2d: There is a significant impact of internalization on organizational performance

### **Theoretical Framework**

The research is predicated on three theoretical frameworks: the SECI Model, the new growth theory, and the notion of innovation dissemination.

#### **SECI Model**

The research that led to the establishment of Nonaka and colleagues' (Nonaka and Toyama., 2003) theory of organizational knowledge generation was conducted on information creation in innovative businesses. At first, a theory of knowledge generation was suggested that only included two dimensions. Knowledge is transformed from one form to another and new knowledge is generated by "social interaction" between tacit and explicit knowledge in the first, or "epistemological," level. Knowledge may be transferred in four distinct ways, as shown in Figure 1: from tacit to tacit (Socialization), from tacit to explicit (Externalization), from explicit to explicit (Combination), and from explicit to tacit (Internalization). In other words, the metaphor of a "spiral" of knowledge formation (Nonaka and Takeuchi 1995 and 71-2, 89) is derived from the fact that the process continues at a new "level" after Internalization.

#### **The New Growth Theory**

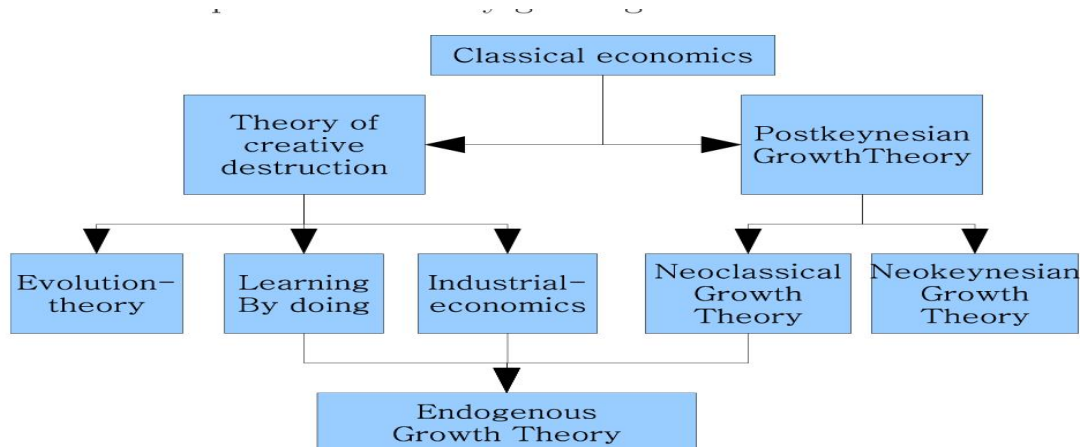
The New Growth idea may be traced back to Romer (2004) and his study (Endogenous growth theory).

The enhanced returns associated with new knowledge or technology contribute to the economic development of Nigerian manufacturing enterprises. The new growth theory supports transitioning to a knowledge-based economy rather than one based on natural resources. It emphasizes the significance of economic processes in the creation and dissemination of new information and in the management and growth of commercial enterprises. One of the main ideas behind the new growth theory is that "knowledge encourages development." These are the cornerstones of the new growth theory:

- It views technological progress as an outcome of economic activity rather than as a result of non-market forces, and it argues that, unlike material goods, technology and knowledge are characterized by growing returns that drive the development process.

We shall use this idea to our study because we believe that the incorporation of managerial technology goods like artificial intelligence into Nigeria's manufacturing sector would have a positive impact on the economic success of local businesses if done correctly.

**Figure 2 The New Growth Theory**

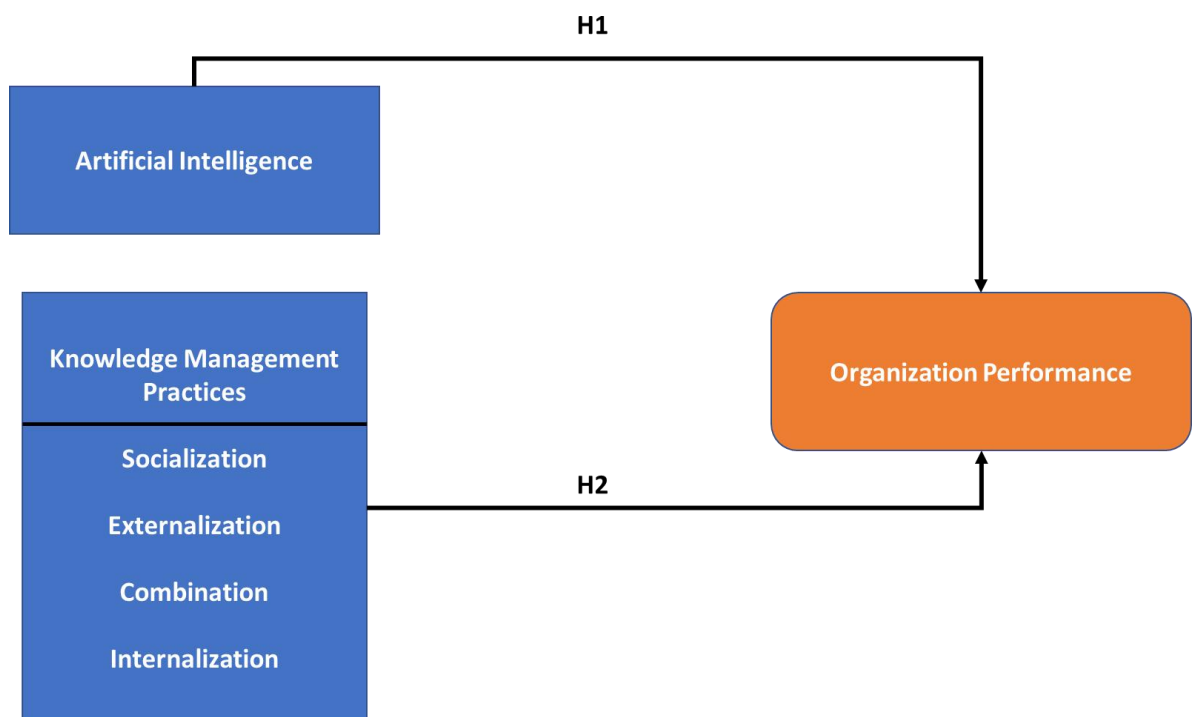


### **The Theory of Diffusion of Innovation**

The flexibility of Rogers' theory makes it useful in many settings, but it also makes it difficult to employ as a process model for preparing for the transformation of an organization brought on by new forms of thinking and doing (Straub., 2009). The study of how technologies are adopted by organizations within the industrial sector lends itself especially well to Rogers' theory of innovation diffusion (Medlin., 2001). Rogers



(2003) often used the words "technology" and "innovation" interchangeably since technical accomplishments are the primary focus of diffusion study. Specifically, technology is "a design for instrumental action that reduces the uncertainty associated with the cause-effect connections essential to attain a particular purpose," as defined by Rogers (2013, p. 13). In this setup, the hardware and the software are treated as two separate entities. Software is "the tool's knowledge base," whereas hardware is "a physical or real-world component carrying technology" (Rogers, 2003, p. 259). Slow progress toward widespread use may be attributed, in part, to the fact that software (as a technological improvement) is difficult to see. Adoption, as defined by Rogers (2003, p. 177), is "opting to make extensive use of an invention as the best possible course of action," whereas rejection involves "making a conscious decision to ignore an innovation. Using preexisting channels and networks, Rogers defines diffusion as "the process by which an innovation is transmitted through time among members of a social system" (p. 5). This concept highlights the importance of inventing, communication routes, time, and social systems as key factors in the spread of innovations. There are four main parts to Rogers' theory of diffusion: the innovation, the means of spreading the word about it, the context in which the innovators' potential adopters and detractors live, and the length of time it takes for people to make up their minds about whether or not to adopt the innovation. All of these aspects work together to determine whether or not a person will accept an idea (Straub., 2009).

**Figure 3 Theory of Diffusion of Innovation****Figure 2 Conceptual Framework**

## **CHAPTER 3**

### **Research Model**

## **METHODOLOGY**

### **Research Design**

A descriptive study method was used for this investigation. Calderon (2006), defined descriptive study as a purposive process of gathering, analyzing, classifying, and tabulating data about prevailing conditions, practices, processes, trends, and cause-effect relationships and then making adequate and accurate interpretation about such data with or without or sometimes minimal aid of statistical methods. The research was conducted to determine the effect of knowledge management and AI on the productivity of Nigerian manufacturing companies. Conclusions were taken from a case that was indicative of the overall company using a representative or typical case study approach.

### **Sample Selection & Data Collection**

All surveys fitting a certain criterion will be included in the analysis. Five (5) Nigerian manufacturers (Dangote Ltd, Honey Well, Nestle, Unilever, and UAC) with 35560 employees. The researcher made sure that responders were well-informed about the questionnaire's content and method. Time was given to the respondents to respond to each item in the questionnaire

For this study, the identified target population consists of all 3570 managerial employees from Human Resource, finance, operations, marketing, public relations and more of the departments selected in these manufacturing companies in Nigeria. This thesis work research used the simple random sampling method to gather data. These divisions were selected on purpose because of their crucial role in the organization. As a result, simple Random sampling method was used to select only 351 managerial employees at a confidence level of 95% and 5% margin of error to participate in this study as the sample size for this study.

Participants opt to be a part of the study rather than being chosen in this respondent-driven sampling method (Saunders et al., 2019). The participants will not be paid for

their responses. Copies of the questionnaire will be sent to the administrative offices of the organizations and will be retrieved back after filling the questionnaires. The responses from the participants will be secured and used majorly for research purposes. Data was gathered using a standardized questionnaire developed from prior study and aimed to gather information from respondents. Section 1 of the questionnaire asked respondents to submit their demographic information as well as qualification. Section 2 unveils questions of experience with artificial intelligence. Section 3 unveils attitudes towards knowledge management. Section 4 unveils the practice of knowledge management socialization (SO), externalization (EX), combination (CO), Internalization (IN). Section 5 unveils organizational performance. The information was gathered during August and October 2022. Collection of data took a number of days to be done even after constant reminder. A total number of 350 questionnaires were obtained back from participants. Their responses were collected and coded into the excel worksheet which was later uploaded into SPSS software for analysis:

- The usage of t-tests, chi-square tests, the Spearman rank correlation method, and SPSS tools fall under inferential statistical techniques, whereas descriptive statistical processes include things like mean and standard deviation, frequency and percentage graphs, and normality test methods.

Conclusions concerning the effect of knowledge management methods and AI on the performance of Nigerian manufacturing enterprises required the collection of survey answers with statistically significant frequencies and patterns. Key leading indications (mean, median, mode, frequencies and standard deviation). SPSS 25, for its part, was utilized to analyze the data in this research. A 5-point Likert scale was used to develop the questionnaire, with Strongly Agree = 5 and Strongly Disagree = 1.

### **Study Variables and Instrument**

The research is both quantitative and cross-sectional. The Artificial intelligent Scale (AIS), the Knowledge Management Scale (KMS), the Socialization Scale (SOS), Externalization Scale (EXS), Combination Scale (CS), Internalization Scale (INS) and Organizational Performance Scale (OPS) are among the four elements of the questionnaire, which total 45 items.

## **Demographic Information**

In addition, the study evaluates some demographic characteristics mentioned in Part 1 of the questionnaire (see Appendix). Gender, age, educational level. There are three demographic questions.

### **AI Scale**

The AIS that was used in this research was created by Md Sabri, Sabiroh (2012). This scale consists of 14 items in a normal Five-Point Likert Scale format ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). According to Hair, Black, Babin, and Anderson (2014), Cronbach's alpha must be at least 0.7 to obtain dependability and be considered an acceptable study. The scale was measured through 14 items with Cronbach's alpha score of 0.838.

### **KM Scale**

The KMS used in this study was developed by Biasutti, M. & EL-Deghaidy, H. (2012). This scale has 8 items with a typical Five-Point Likert Scale format ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) (Strongly Agree). this scale was measured through 8 items with a Cronbach's alpha score of 0.720.

### **SO Scale**

The SOS that were used in this research was created by Biasutti, M. & EL-Deghaidy, H. (2012). This scale has 4 items in a conventional Five-Point Likert Scale format ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) (Strongly Agree). The Cronbach's alpha value for the SO was calculated as 0.823.

### **EX Scale**

The EXS that were used in this research was created by Biasutti, M. & EL-Deghaidy, H. (2012). This scale has 3 items in a conventional Five-Point Likert Scale format ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) (Strongly Agree). The Cronbach's alpha value for the EX was calculated as 0.755.

### **CO Scale**

The COS that were used in this research was created by Biasutti, M. & EL-Deghaidy, H. (2012). This scale has 3 items in a conventional Five-Point Likert Scale format ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) (Strongly Agree). The Cronbach's alpha value for the CO was calculated as 0.709.

### IN Scale

The INS that were used in this research was created by Biasutti, M. & EL-Deghaidy, H. (2012). This scale has 4 items in a conventional Five-Point Likert Scale format ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) (Strongly Agree). The Cronbach's alpha value for the IN was calculated as 0.838.

### OP Scale

The OPS that were used in this research was created by Biasutti, M. & EL-Deghaidy, H. (2012). This scale has 9 items in a conventional Five-Point Likert Scale format ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) (Strongly Agree). The Cronbach's alpha value for the OP was calculated as 0.946. This value is also considered to be reliable. The Cronbach's alpha value for the present research of 45 items was calculated as 0.808 which this value considered to be reliable.

**Table 1**

#### The Cronbach's Alpha for Research

Variables

Variable Name	Number of Items	Cronbach's alpha
Artificial intelligent		0.838
Knowledge Management	14	0.720
Socialization	8	0.823
Externalization	4	0.755
Combination	3	0.709
Internalization	3	0.838
	4	0.946
Organizational Performance	9	

## **Data Analysis Procedures**

Data analysis's goal is to develop, from the survey's overall findings, a summary that successfully highlights major patterns and contrasts (Naoum., 2013). The following are a few examples that were provided:

- The usage of t-tests, chi-square tests, the Spearman rank correlation method, and SPSS tools fall under inferential statistical techniques, whereas descriptive statistical processes include things like mean and standard deviation, frequency and percentage graphs, and normality test methods.

Conclusions concerning the effect of knowledge management methods and AI on the performance of Nigerian manufacturing enterprises required the collection of survey answers with statistically significant frequencies and patterns. Key leading indications (mean, median, mode, frequencies and standard deviation). SPSS 25, for its part, was utilized to analyze the data in this research.

## **Ethical factors**

Conclusions and ethical considerations in social research shouldn't depend on the researcher's own preferences for efficiency, comfort, or vanity (Barnes., 1979). Recently, Fellows and Lui (2008) stated that a study's ethical concerns should ensure that the research is risk- and injury-free and that participants are not pressured into taking part.

All of the University's ethical standards were met. All participants gave their informed consent before the study began; no personally identifying information was sought or needed from them; and all data collected, analyzed, and presented would be done so anonymously. In accordance with the data protection laws of Cyprus, the data has been processed and will be deleted.

## CHAPTER 4

### RESULTS

#### Demographic Analysis

The demographic data were evaluated based on gender, educational achievement and age.

**Table 2.**

#### Gender Distribution

	Frequency	Percentage
Male	247	70.6
Female	103	29.4

#### Gender Distribution

According to Table 2 and Figure 5, almost twice as many men as females participated in the survey, although the difference was not statistically significant. For this study, 247 males or 70.6% of the total population participated; 103 females or 29.4% of the total population participated.



**Table 3.****Education Distribution**

	Frequency	Percent
Undergraduate	307	87.7
Postgraduate or above	43	12.3

Information in tables 3 and figures 6 indicate the individuals' educational backgrounds. The chart reveals that the majority of participants (87.7%) have a bachelor's degree, and a postgraduate

**Table 4****Age of the respondents**

	Frequency	Percent
From 25 – 29	43	12.3
From 30 – 34	12 9	36.9
From 35 – 39	88	25.1
From 40 – 44	37	10.6
From 45 – 49	30	8.6
More than 50s	23	6.6

## Age Distribution

The respondents' ages are broken down into a range that is shown in both Table 4. Those respondents who are between the ages of 30 and 34 make up the largest age group (36.9%), followed by those respondents who are between the ages of 35 and 39 (25.1%), those respondents who are from 25 to 29 (12.3%), those respondents who are between the ages of 40 and 44 (10.6%), and those respondents who 45 to 49 (8.6%) and over 50 years (6.6%). The vast majority of respondents are of an appropriate age and have sufficient levels of experience to reply to the questions posed in the research.

## Descriptive Statistics

After collecting the questionnaire from the sample, the questionnaire response scale which contains 34 items was translated to a quantitative scale by giving the answer category 5 = Strongly Agree, 4 = Agree, 3 = Neither Agree nor Disagree, 2 = Disagree, 1 = Strongly Disagree. The total scores of the sample respondents for each paragraph were classified as shown in Table 5.

**Table 5**

**The Degree of Approval of the Questionnaire Paragraphs**

Likert-Scale	Classification	Description
1	1 – 1.79	Strongly Disagree
2	1.8 – 2.59	Disagree
3	2.6 – 3.39	Neither Agree nor Disagree
4	3.4 – 4.19	Agree
5	4.2 – 5	Strongly Agree

The researcher relied on the degree of approval of the questionnaire paragraphs according to (Idek et al., 2014) the rule specified in Table 4 that the approval for the paragraph is strongly disagreed if the average mean of the paragraph between 1 – 1.79 disagree if the average mean of the paragraph falls between 1.8 – 2.59, neither agree mean of the paragraph between 3.4 – 4.19, and strongly agree if the average mean of nor disagree if the average mean of the paragraph is between 2.6 – 3.39, agree if the the paragraph between 4.2 – 5. Average.

**Table 6****The Mean Scores for The Questionnaire Items**

	Statistics			Degree of Approval
	Mean	Std. Deviation	N	
OP1	3.33	1.036	350	Neutral
OP2	4.09	1.111	350	Agree
OP3	3.74	1.061	350	Agree
OP4	4.03	1.051	350	Agree
OP5	3.34	1.041	350	Agree
OP6	4.11	1.110	350	Agree
OP7	3.75	1.061	350	Agree
OP8	4.04	1.112	350	Agree
OP9	4.23	1.076	350	Agree
<b>OP Means Score</b>	<b>3.85</b>			<b>Agree</b>
AI1	4.33	.779	350	Agree
AI2	4.33	.803	350	Agree
AI3	4.19	.772	350	Agree
AI4	4.48	.667	350	Agree
AI5	2.90	1.162	350	Neutral
AI6	2.59	1.044	350	Disagree
AI7	2.34	1.111	350	Disagree
AI8	2.54	1.056	350	Disagree
AI9	2.79	1.217	350	Neutral
AI10	2.97	1.111	350	Neutral
AI11	2.35	1.054	350	Disagree
AI12	2.85	1.306	350	Neutral
AI13	3.07	1.243	350	Neutral
AI14	2.38	1.074	350	Disagree
<b>AI Means Score</b>	<b>3.15</b>			<b>Neutral</b>
KM1	4.69	.562	350	Strongly Agree
KM2	4.67	.569	350	Strongly Agree
KM3	3.67	.856	350	Agree

KM4	4.65	.671	350	Strongly Agree
KM5	3.72	1.039	350	Agree
KM6	3.55	1.047	350	Agree
KM7	3.72	1.028	350	Agree
KM8	3.65	.987	350	Agree
<b>KM Means Score</b>	<b>4.04</b>			<b>Agree</b>
SO1	3.63	1.031	350	Agree
SO2	3.91	1.006	350	Agree
SO3	3.77	.959	350	Agree
SO4	3.81	.968	350	Agree
<b>SO Means Score</b>	<b>3.78</b>			<b>Agree</b>
EX1	3.07	1.269	350	Neutral
EX2	3.53	1.487	350	Agree
EX3	3.78	1.223	350	Agree
<b>EX Means Score</b>	<b>3.46</b>			<b>Agree</b>
CO1	3.69	1.430	350	Agree
CO2	3.69	1.475	350	Agree
CO3	3.50	1.266	350	Agree
<b>CO Means Score</b>	<b>3.62</b>			<b>Agree</b>
IN1	2.80	1.492	350	Neutral
IN2	2.91	1.597	350	Neutral
IN3	3.18	1.283	350	Neutral
IN4	2.85	1.591	350	Neutral
<b>IN Means Score</b>	<b>2.93</b>			<b>Neutral</b>

Table 6 shows the mean scores which indicate that the employees' perceptions of the OP, KM, SO, EX and CO are agreed and satisfactory. Also, The respondents' mean scores for IN and AI indicate that the employees perceptions are natural.

### Correlation Analysis

The goal of any correlation study is to establish the nature and magnitude of relationships between sets of data that share significant characteristics (Pallant., 2013).

Correlation coefficients are used to make this determination, and they may be used to draw both positive and negative conclusions. The Pearson product-moment correlation coefficient may also be used to evaluate the closeness of a pair of data points ( $r$ ). Normal range for  $r$  is +1 to -1. The closer the  $r$  value is to one, the stronger the positive connection, and the closer it is to one, the stronger the negative link. When  $r$  is zero, there is no connection to probe.

There are prerequisites for using  $r$  to probe the associations between study variables, as stated by Hair et al. (2010). One of these presumptions is that the data must be in the form of an interval or ratio. The experiment's interval data, gathered using a Liker scale, backs up this idea. Additionally, the connection being analyzed has to be linear. Given that we are interested in examining a causal link between independent and dependent variables, this assumption is also correct. The last need for conducting a correlation study is that the data be normally distributed. Data used for analysis in this research seems to be regularly distributed, therefore it appears that this assumption has also been satisfied.

In this study, the Pearson Product Moment Connection Coefficient was employed to examine the degree of correlation between two variables. Table 7 displays Cohen's guideline for correlation strength, which may be used to determine the relative importance of the association in the present investigation.

**Table 7****Cohen's Guideline of Correlation Strength**

R-values	Strength of Relationship
$r = + .10$ to $.29$ or $r = -.10$ to $-.29$	Low
$r = + .30$ to $.49$ or $r = -.30$ to $-.49$	Moderate
$r = + .50$ to $1.0$ or $r = -.50$ to $-1.0$	High

Source: Cohen (1988)

The correlations between the different factors are shown below in Table 8. This contains both the independent components and the variable that is being investigated. In Table 8, the importance of both the independent and dependent variables is broken down individually.

**Note:** AI= artificial intelligence

KM= knowledge management

SO= socialization

EX= externalization

CO= combination

IN= internalization

OP= organizational performance

**Table 8****Correlation of Research Variables**


---

Correlations							
	TAI	TKM	TSO	TEX	TCO	TIN	TOP
TAI	1						
TKM	.651**	1					
TSO	.577**	.770**	1				
TEX	.140**	.210**	.187**	1			
TCO	.425**	.686**	.772**	.116*	1		
TIN	.450**	.763**	.749**	.134*	.752**	1	
TOP	.460**	.810**	.765**	.206**	.737**	.923**	1

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

\* . Correlation is significant at the 0.05 level (2-tailed).

**Regression Analysis**

The testing of the hypothesis developed in this section explains the inquiry. The significance of this cannot be overstated, since the above analysis guarantees that the premise of this study has been thoroughly evaluated. To determine whether the given hypothesis should be accepted in the current investigation, a standard multiple regression was performed. A discussion of the various regression findings and how they relate to the study's aims is provided. Hair et al. (2010) developed a three-stage process to examine the findings of multiple regressions. The P value is the starting point for determining the model's statistical significance. The next step is to determine the value of R<sup>2</sup>. Hair et al. (2010) classifies the R<sup>2</sup> value that is considered acceptable depending on the number of independent variables and the size of the sample. As a last step in a multiple regression analysis, significance of statistically significant independent variable coefficients is determined by comparing the regression coefficients to their corresponding Beta coefficients (b).

## Hypotheses One

There is a significant impact of artificial intelligence on organizational performance

**Table 9**

### Regression Analysis for AI And OP

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					dp1	dp2	Sig. P Change
1	.460 <sup>a</sup>	0.211	0.209	8.877	1	348	0.000

a. Predictors: (Constant), TAI

### ANOVA<sup>a</sup>

Model		Sum of Squares	dp	Mean Square	P	Sig.
1	Regression	7345.745	1	7345.745	93.228	.000 <sup>b</sup>
	Residual	27420.144	348	78.794		
	Total	34765.889	349			

a. Dependent Variable: TOP

b. Predictors: (Constant), TAI

### Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	60.774	1.385		43.890	0.000
	TAI	0.196	0.020	0.460	9.655	0.000

a. Dependent Variable: TOP

According to Hair et al. (2010), the regression analysis in Table 9 shows a significant level of  $P < 0.05$  and an R-squared value of 0.211 between artificial intelligence and organizational performance. The p-value of 0.000 is less than the threshold of 0.05, which means that the relationship between artificial intelligence and organizational performance is statistically significant. The R-squared value of 0.211 indicates that 21.1% of the variation in organizational performance can be explained by artificial intelligence. This may suggest that artificial intelligence has a weak, but still significant, impact on organizational performance. Therefore, based on the results of



the analysis, the research hypothesis (H1) that there is a relationship between artificial intelligence and organizational performance that can be accepted. However, it is important to note that the relationship is low, which means that other factors may have a greater impact on organizational performance.

### **Hypotheses Two**

There is a significant impact of Knowledge management on organizational performance.

According to Hair et al. (2010), the regression analysis in Table 10 shows a significant level of  $p < 0.05$  and an R-squared value of 0.657 between knowledge management and organizational performance. The p-value of 0.003 is less than the threshold of 0.05, which means that the relationship between knowledge management and organizational performance is statistically significant. The R-squared value of 0.657 indicates that 65.7% of the variation in organizational performance can be explained by knowledge management. This suggests that knowledge management has a moderate, but still significant, impact on organizational performance. Therefore, based on the results of the analysis, the research hypothesis (H2) that there is a relationship between knowledge management and organizational performance can be accepted. The moderate level of significance suggests that improving knowledge management practices can lead to meaningful improvements in organizational performance.

### **Hypotheses Two**

There is a significant impact of socialization on organizational performance. Based on the result of the analysis in Table 11 according to Hair et al. (2010), there is a moderate significant relationship between socialization and organizational performance, with a significant level of  $p < 0.05$  ( $0.000 < 0.05$ ) and an  $r^2$  value of 0.585. This means that the variable of socialization has a moderate positive impact on organizational performance, and the null hypothesis (H2a) is rejected. Therefore, it can be concluded that socialization is an important factor that contributes to the success of organizational performance.

### **Hypotheses Two B**

There is a significant impact of externalization on organizational performance.

According to Hair et al. (2010), there is a statistically significant relationship between externalization and organizational performance at a level of significance of  $p < 0.05$  ( $0.000 < 0.05$ ). However, the relationship between externalization and organizational performance is very low ( $r^2 = 0.043$ ). Therefore, the hypothesis H2b was accepted, indicating that externalization has a weak relationship with organizational performance.

There is a significant impact of combination on organizational performance.

According to the analysis in Table 13 by Hair et al. (2010), there is a significant relationship between combination and organizational performance as evidenced by a significant level of  $p < 0.05$  ( $0.000 < 0.05$ ) and an  $r^2$  value of 0.543. This means that there is a moderately significant relationship between the combination of knowledge management processes (socialization, externalization, and combination) and organizational performance. Therefore, H2c was accepted.

**Hypotheses Two D**

There is a significant impact of internalization on organizational performance. The result of the analysis in Table 14 shows a significant level  $p < 0.05$  ( $0.000 < 0.05$ ). The regression analysis shows that the level of significance is less than 0.05, which means that the relationship between internalization and organizational performance is statistically significant. The  $r^2$  value of 0.852 indicates that 85.2% of the variability in organizational performance can be explained by internalization. The interpretation of a strong positive relationship between internalization and organizational performance is supported by the high  $r^2$  value. Finally, the acceptance of H2d indicates that internalization has a significant impact on organizational performance.

## CHAPTER 5

### DISCUSSION AND CONCLUSION

#### **Discussion of findings**

Strategic decisions are made by organizations based on the financial, product market, and shareholder returns outcomes (Ho., 2008). A shift in how organizational assets is defined has occurred as a result of the organization's recognition of knowledge as a resource-based entity. The need to put resources into frameworks that advance scholarly capital or hierarchical information exercises shows the significant job of representatives in working on authoritative execution. The AI-KM system's goal is to integrate business processes and knowledge priority lists, resulting in robust productivity and efficiency. The findings of the study emphasized that AI-KM integration is necessary for both the creation of new knowledge and the promotion of existing knowledge. Moreover, the computer-based intelligence KM framework influences emphatically the three execution points of view (monetary, item market, and investors return) by upgrading representatives' productivity, ability, and know-when.

The findings also support the strategic value of the AI-KM system for supporting knowledge activities in an organization. In practice, employees' acceptance of the AI-KM system's engagement suggests that other benefits, such as the creation of organizational knowledge networks, are added to the business processes of the organization. As a result, the AI-KM system improves performance by bringing together untapped resources and strengthening the partnership between employees and the organization through shared ownership of knowledge resources.

With comparisons in research results that support the majority of the associations, the result of robust associations demonstrates accurate interpretations of the relations between KM, AI, and OP. As a result, the integration of KM and AI into an organization's structure has the potential to boost productivity and innovation. The outcomes support KM exercises as well as show an extremely high extent of fluctuation and best expectation for Overpowered - an obvious sign that an association can carry out a KM framework lined up with existing business processes, stay serious, and accomplish put forth objectives.

The creation of an AI-KM framework that links KM activities with AI components (IA and IS) and OP bridges the gap between KM activities and organizational business processes, which are difficult to integrate. This is another implication that this study suggests. According to the findings, the majority of the associations that were evaluated emphasize the significance of KM and AI for organizational competitiveness (Lombardi., 2019). By incorporating AI-enabled KM activities into the business processes, this result can assist decision-makers in the organization in maximizing the potential opportunities that can drive productivity and innovation.

The finding also demonstrates the significant role that employees' attitudes play in integrating an AI-KM system into the existing organizational context. As a result, businesses must concentrate on ensuring that employees' responses to the new KM system will be analyzed. Argote (2015) backs this up by arguing that even though knowledge is important for competitive advancement, the company should also nurture the workforce's knowledge assets. To remain operational and productive, organizations can gradually shift from a more conventional mindset and evolve through knowledge activities. Emerging innovations that are secured through knowledge engagements guarantee continuous contributions to performance and comprehensive advantages, even though an organization's future may be uncertain.

In the resource-based view of knowledge, this study emphasized the social construct, context, and dynamic character. Employee interactions within the organization have converged on the implementation of collective knowledge. Nonetheless, the level of mechanical development in associations is continually changing as a result of progressions in plan and execution. In addition, the remarkable and transversal evolution of technologies—including AI—changes the priorities of organizations. According to Tsui, Garner, and Staab (2000), advanced technologies like AI are needed to encourage the integration of knowledge outcomes with business procedures in organizational knowledge activities.

The finding indicates that the application of AI technologies facilitates the processing of complex knowledge interactions like tacit-to-tacit knowledge activities by suggesting a support consistency association between AI and KM activities. Olaisen and Revang (2018) say that AI technologies help with knowledge activities in organizations by managing complex collective knowledge that employees have trouble

applying and integrating into business processes. In order to boost organizational knowledge activities, AI technologies play a crucial role in enhancing organizational performance and gaining competitive advantages. This led to the investigation of the connections that exist between three theoretical fields supported by existing research, which in turn made it possible for this paper to construct a comprehensive conceptual framework based on resource-based theory. This research, therefore, fits into the particular context of knowledge application, comprehending the significance of AI technologies, and the emergence of this phenomenon's contribution to the existing literature. As a valuable contribution to the alignment of the AI-KM conceptual framework, this study provides important specific insights into how the AI-KM system contributes to organizational performance, particularly the various data analysis steps.

Business processes are a significant division that frames the center fringe of an association with workers completing everyday exercises utilizing processes that examine their capabilities and assignments. In order to develop strategies that maintain a competitive advantage, businesses rely on the knowledge and expertise of their employees. The literature reviewed in this study lends further support to the AI-KM system's practical application. so far. This study identifies three stages that further enhance practice. To begin, there are three theoretical foundations: organizational performance, AI technologies, and the sharing of organizational knowledge. Based on our conceptual framework, we developed constructs that show that organizations gain from implementing the AI-KM system.

Second, it is evident that employees gain more trust in interacting with and exchanging tacit knowledge when AI technologies are used to ensure knowledge engagement in the organization. Lastly, in order to adapt an AI-KM system, organizational strategies necessitate brand-new knowledge. The new system's introduction of solutions makes the organization's business processes more efficient after complex processes are identified. Using a resource-based approach, this study suggests that employees' interactions with AI technologies used to manage organizational knowledge activities advance knowledge extraction.

Initially, Hypothesis 1 made the assumption that having experience with artificial intelligence would have a significant effect on the organizational performance of manufacturing businesses. The majority of respondents stated that they are familiar

with artificial intelligence and have also completed a course on AI that was offered online. This has helped them improve their knowledge as well as their communication skills when utilizing AI tools and has made them more successful when it comes to completing their tasks. This is consistent with the findings of Zuhdi et al. (2019), who reported that managers of manufacturing enterprises in Nigeria have used artificial intelligence to enhance communication between their company and its consumers and to enhance the overall quality of the customer experience. This finding is consistent with the findings of Zuhdi et al. (2019). In addition, Yahyawi (2011) said that having a knowledge of artificial intelligence is helpful in finding solutions to problems and improving the performance of institutions in a manner that is congruent with the objectives of development and adjustment.

According to the second hypothesis, an organization's level of performance is significantly impacted by its mentality about its approach to knowledge management. The respondents said that they believed knowledge management to be crucial to their own knowledge growth and effectiveness. This was done so that they might increase their effectiveness. The results of gaining this knowledge management have resulted in an improvement in the overall knowledge development of their firm. According to Linderman et al. (2010), who think that knowledge management is concerned with the exchange of ideas, this assertion is consistent with their beliefs. As a result, the use of information technology may foster greater levels of cooperation and productivity inside an organization. This may be accomplished by using online technologies such as meetings and chat rooms, which make it easier to exchange information and ideas with one another.

In addition to this, the respondents noted that they are willing to manage and share the information that they have with their colleagues, as well as the fact that their colleagues are eager to manage and share information with them. They feel that if they communicate information with one another, not only will it enhance their knowledge management, but it will also improve the performance of the organization. According to Turban, Mclean, and Wetherbe (2014), who emphasized that the utilization of deliberate and the exchange of one or more "s ideologies and viewpoints, strategies, and insight to somebody else either explicitly or through a mediator, like a software system, will keep improving the performance of the company.

On the other hand, Husain (2011) said that there is no assurance that a good outcome would be guaranteed even when information is transferred in an appropriate manner. Although the formal methods could be necessary to guarantee the security and efficiency of the information that is communicated, they might make the process of invention more difficult. Because of this, workers have a responsibility to guarantee that an optimal mix of formal and informal methods and knowledge is in place. If they do so, the process of transferring and exchanging information may become more effective.

Hypothesis 2a to 2d indicated that the KM practices of information had a significant influence on the functioning of the organization. According to the respondents, the performance of their organizations has been enhanced as a result of their involvement in knowledge sharing activities that were carried out outside of their organizations. This is consistent with the findings of Shih et al. (2010), who said that socialization may take place outside of the individual's immediate environment via the use of informal interactions, observation, imitation, and practice. The dissemination of information to many parties via the use of various technical tools has also accelerated the process of communication, which has contributed to an increase in the organization's overall level of productivity. According to Nonaka and Takeuchi (1995), who noted that the implementation of knowledge transfer and socialization of knowledge will help team members form accurate explanations and expectations for any given task, and in turn, will help team members coordinate their actions and adapt their behavior to the demands of the task and to other team members. This is in line with what we have seen here.

The respondents said that they record their knowledge and expertise so that their colleagues might benefit from it and increase their technical competence. This was expressed by the respondents. The efficiency of the organization will increase as a result of this. This is in accordance with the findings of Turban et al. (2014), He emphasized the concept that a person's overall productivity and efficacy may be enhanced via the implementation of purposeful and the passing of one or more "s notions and views, solution, and information to someone else, either directly or through a mediator, such as a software system.

According to the seventh set of hypotheses, the incorporation of artificial intelligence into business processes would have an important effect on the performance of a company. The respondents believe that their overall business objective, which is to improve the performance of their organizations, is aligned with their AI plan. In addition, cross-functional teams, which consist of AI professionals and people working in the business, collaborate on specific problems by integrating a variety of AI techniques and processes into their business models, which has resulted in an improved and transformed business model for the company. This is consistent with the findings of Di Francesco Marino and Magg (2020), who said that the incorporation of AI into business has already altered the fundamental composition of companies and the way in which they interact with their surroundings. AI has resulted in a new approach to managing information, which offers businesses with a difficulty as well as an enormous potential; however, in order to take advantage of this opportunity, businesses will need to undergo a shift in their culture, philosophy, and skill sets. Also, Kuzey et al. (2014) mentioned that artificial intelligence can be implemented throughout the entirety of an organization's value chain, thereby integrating virtually all aspects, including research and development, maintenance, operation, sales and marketing, planning and production, demand forecasting, and services. This is possible due to the many benefits that AI offers in terms of innovation and prowess.

## **Conclusion**

The purpose of this research was to investigate the relationship between the implementation of knowledge management methods and artificial intelligence (AI) and the level of organizational performance seen in Nigerian manufacturing companies. The study, which was based on agreement, found that effective information management had significant implications for manufacturing and significant promise for the manufacturing industries. Our hypothesis guided the development of a model that examines the connection between KM and organizational performance. However, there are several determinants of how firms socialize information, how knowledge is externalized, how employees feel about knowledge management, and how knowledge is internalized. Workers, organizational culture, organizational structure, people, and surroundings all have a role. The way people feel about knowledge management may also affect how much of it they internalize.



The high-performance company would benefit from a more advanced knowledge management strategy. Using theoretical and empirical discussion, the researcher established that knowledge management techniques (socialization of knowledge, externalization of knowledge, attitude towards knowledge management, and internalization of knowledge) significantly affect the performance of businesses. This study's results suggest that knowledge management is a useful tool that might significantly contribute to the development and improvement of regulation, as well as to its efficiency and effectiveness. Knowledge management is defined, distinct forms of knowledge management are discussed, and different knowledge management techniques are identified in this research. Knowledge management encompasses many distinct approaches, including sharing information with others, gaining feedback on one's work, publishing one's findings, and learning from one's mistakes.

The findings suggest that manufacturing firms' organizational performance is impacted by the use of knowledge management and artificial intelligence methods. Governments throughout the world are facing a growing need to enhance their capacity for research and the development of information as a direct consequence of the profound effects of knowledge management, especially in the industrial sector. In conclusion, the research has shown the significance of knowledge management and artificial intelligence in the procedure of developing and enhancing the effectiveness of the company.

### **Recommendations**

The following is a selection of the suggestions that were provided by the researcher: • The possibility for the manufacturing organization to be successful over the course of time is afforded to the organization as a result of the incorporation of knowledge management and artificial intelligence into business strategy.

1. The industrial company now has the opportunity to achieve long-term success by incorporating knowledge management and artificial intelligence into their business plan.
2. The firm receives a greater number of benefits as a result of the manufacturing organization's integration of the processes and technologies associated with knowledge management.

3. The manufacturing firm will accomplish its aims in improving corporate communication if it raises awareness of artificial intelligence and implements AI.
4. Managers have a responsibility to help workers who have knowledge and to develop conditions that are favourable to the production and exchange of information.
5. The majority of organizations do not suffer from a lack of creative ideas. What they are missing is the dedication and weight of others, which is necessary in order to overcome the challenges. People that think in unique ways are essential to the innovation process.
6. The management of information and knowledge is everyone's duty. It is important to foster an environment in which employees feel comfortable sharing their knowledge with one another and to ensure that the work they do in terms of knowledge management is clearly connected to the goals of the manufacturing organization.
7. In order to enhance the performance of the organizations and the long-term productivity of the industrial organization, you need recruit skilled managers.
8. Educate all of your team on knowledge management and related procedures by giving them access to a wide variety of educational opportunities.

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## APPENDIX A

### Participant Information Sheet and Informed Consent Form

Dear Participant,

I am conducting a research on the “impact of knowledge management practices and artificial intelligence (AI) and organization performance of manufacturing firms in Nigeria” and you have been carefully selected to participate as a respondent.

The research work is purely an academic exercise and we hereby assure you that all information supplied will be treated with utmost confidentiality. Your co-operation will be highly appreciated.

The data collected during the course of this study will be used for academic research purposes only and may be presented at national/international academic meetings and/or publications. You may quit participating in this study at any time by contacting us. If you opt out of the study, your data will be deleted from our database and will not be included in any further steps of the study. In case you have any questions or concerns, please contact us using the information below

Thank you

Yours faithfully

Researcher

Email: [amanah\\_kelvin@yahoo.com](mailto:amanah_kelvin@yahoo.com)

**QUESTIONNAIRE SECTION 1:****DEMOGRAPHIC DATA**

1. What is your Gender?
  - Male
  - Female
2. How old are you?
  - Below 20 years
  - 20-29 years old
  - 30-39 years old
  - 40-49 years old
  - 50 years and above
3. What is your highest qualification?
  - Diploma
  - BSC
  - MSC
  - PHD
  - OTHERS

**SECTION 2: EXPERIENCE WITH ARTIFICIAL INTELLIGENCE**

4. Have you used AI or receive course online before?
  - Yes
  - No

If you answered yes to Question 4, please indicate how strongly you agree or disagree with the statements below

5. I am able to enhance my knowledge and skills using AI tool
  - Strongly agree
  - Agree
  - Neither agree nor disagree
  - Disagree
  - Strongly disagree
6. The knowledge that I acquire from AI tools is effective in helping me complete tasks

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

7. I believe that the organization of lesson and content on an AI system must be clear to help me learn

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

8. I can learn more using AI software than reading books or other online resources

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

9. I can learn more using AI software than with traditional classroom and instructor techniques

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

**SECTION 3: ATTITUDE TOWARDS KNOWLEDGE MANAGEMENT**

10. I consider knowledge management as important to my personal knowledge development.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

11. I consider knowledge management as important to my organization knowledge growth

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

12. I am willing to manage information that I have with my colleagues.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

13. I am willing to manage my lecture notes, power point slides and other resources with my colleagues

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

14. My colleagues are willing to manage information they have with me

- Strongly agree
- Agree
- Neither agree nor disagree



- Disagree
- Strongly disagree

15. I am willing to participate in knowledge management activities

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

16. Knowledge management activities will cause me to lose my knowledge

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

17. Many activities are organized in my organization to facilitate knowledge management activities

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

#### **SECTION 4: THE PRACTICE OF KNOWLEDGE MANAGEMENT**

##### **SOCIALIZATION OF KNOWLEDGE**

18. I keep my Knowledge and Experience only for my personal use

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

19. I participate in knowledge sharing activities conducted outside my organization

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

20. I share information with my peers

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

21. I support sharing information with others by the use of technological tools

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

### **EXTERNALIZATION OF KNOWLEDGE**

22. I document my knowledge and experience so that my colleagues can learn from it

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

23. I record my ideas so that my colleagues can learn from it

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

24. I document all my best practices and share them with my colleagues

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

### **COMBINATION OF KNOWLEDGE**

25. I categorize new information in an organized way

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

26. I am able to relate new information to previous knowledge

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

27. I update my knowledge repertoire consistently

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

### **INTERNALIZATION OF KNOWLEDGE**

28. I learnt from other people's experience when I talk to and listen to their stories

- Strongly agree

- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

29. I develop new ideas

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

30. I developed new concepts

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

31. I apply knowledge learnt to my tasks

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

## **SECTION 5**

### **ORGANIZATIONAL PERFORMANCE**

32. I understand how my work impacts the organization's business goals

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree

Strongly disagree

33. Communication between senior leaders and employees is good in my organization

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

34. Innovative thinking is a part of my organizations DNA

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

35. Building high performing cohesive teams are a top priority in my organization

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

36. My organization is dedicated to diversity and inclusiveness

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

37. One on one time with management is a part of my organizations culture

- Strongly agree

- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

38. Timely and effective feedback is critical to the success of my organization

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

39. Accountability is a part of my organizations DNA

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

40. My organization performs at the highest level in its industry

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

**ETHICAL COMMITTEE APPROVAL****BİLİMSEL ARAŞTIRMALAR ETİK KURULU**

27.10.2022

Dear Tamaruakile Kelvin Awanah

Your application titled **“Impact Of Knowledge Management Practices And Artificial Intelligence (AI) On Organization Performance Of Manufacturing Firms In Nigeria”** with the application number NEU/SS/2022/1362 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Prof.Dr.Aşkın KİRAZ

Rapporteur of the Scientific Research Ethics Committee

## TURNITIN REPORT

THE IMPACT OF KNOWLEDGE MANAGEMENT AND ARTIFICIAL INTELLIGENCE ON ORGANIZATIONAL PERFORMANCE OF MANUFACTURING FIRMS IN NIGERIA

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