The Impact of Artificial Intelligence on Organizational Performance: Insights from VFD Micro Finance Bank (VBank), Lagos State Nigeria

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ABSTRACT

This study examined "The Impact of artificial intelligence on organizational performance: Insights from VFD micro finance bank". Methodology: Relevant data were drawn from selected one hundred (100) staff of VFD micro finance bank in Lagos state, using a well-structured questionnaire. The findings of the study revealed that there is an impact of artificial intelligence on organizational performance. Study conclusion and policy recommendations: The study concluded that in the twenty-first century, AI techniques have experienced a resurgence following concurrent advances in computer power, large amounts of data, and theoretical understanding; and AI techniques have become an essential part of the technology industry, helping to solve many challenging problems in business. The study recommends that businesses must take proactive measures to address the obstacles to AI adoption if they want to optimize the technology's beneficial effects on organizational performance. It is advised that businesses concentrate on making investments in the training of a knowledgeable workforce by providing courses that give staff members the skills they need to work with AI. In addition to ensuring that employees can efficiently manage and fully utilize AI technologies, this will assist close the talent gap. Additionally, in order to stay up with the rapid advancement of AI technologies and approaches, organizations need to cultivate a culture for continuous learning.

Keywords: Artificial Intelligence, Micro Finance Banks, Organizational Performance, Financial Institutions, Technological Advancement.

INTRODUCTION

Artificial intelligence (AI) has emerged as a significant research topic in the twenty-first century in almost every discipline, including engineering, science, education, medical, business, accounting, finance, marketing, economics, manufacturing, the stock market, and law, to name a few (Lohr, 2017). The subject of artificial intelligence has expanded so much that it is now challenging to keep track of the number of studies being conducted (Shabbir & Anwer, 2015). According to Gurpartap (2017), In contrast to the natural intelligence (NI) exhibited by humans and other animals, artificial intelligence (AI), also referred to as machinery intelligence (MI), is intelligence displayed by machines. It is defined as any device that senses its surroundings and acts in a way that maximizes its chances of accomplishing its objectives. Gurpartap (2017) referred to the intellectual capacity of machines to comprehend, interpret, or rationalize and react to external stimuli similarly to live beings is known as artificial intelligence. It is a relatively new area of automation

and computing that builds machines that can do tasks that previously required human abilities. Artificial intelligence is capable of mimicking human intelligence in a variety of tasks that call for learning and analytical thinking, problem-solving, and decision-making (Shabbir & Anwer, 2015). AI has a reputation for effectively completing cognitive activities, but it also significantly increases people's dependence on the technology. Large data sets can be processed by artificial intelligence (AI) systems, which can also collect and analyze data at supersonic speed. Shabbir and Anwer (2015), developed to the point where artificial intelligence is mirrored in the form of an artificial brain model that attempts to replicate the learning process in order to imitate the capabilities of the human brain.

Lohr (2017) posits that Artificial intelligence (AI) technology is being adopted by many companies in an effort to save operating costs, boost productivity, boost sales, and enhance customer satisfaction. Businesses consider integrating the entire spectrum of smart technologies—such as robots, machine learning, data mining, the Internet of Things (IoT), and natural language processing—into their operations and goods in order to reap the biggest benefits. Businesses that are fresh to AI can still benefit greatly. Businesses can save time and money by automating repetitive tasks and processes; increase productivity and improve operational effectiveness; make quicker decisions based on cognitive technology outputs; avoid mistakes and "human error" if smart systems are properly configured; use insight to predict consumer needs and provide a better, more individualized experience; mine vast amounts of data to generate quality leads and expand their customer base; reduce costs by optimizing the business, workforce, or products; boost revenue by identifying and maximizing sales opportunities; and develop expertise by enabling analysis and providing intelligent advice and support. By automating repetitive work, allocating resources optimally, and increasing overall efficiency, AI also improves organizational performance. According to PwC (2023), implementing AI can boost productivity by up to 40%, emphasizing its substantial impact on operational performance. This is especially important for Nigerian businesses that must innovate quickly to remain competitive in the global market and deal with issues like scarce resources and inadequate training. Deloitte (2022) highlights that by improving strategic skills and optimizing procedures, Nigerian businesses using AI are better able to overcome these obstacles.AI has completely changed how businesses exchange and manage knowledge. Businesses may improve their knowledge-sharing capabilities and make information more accessible and actionable by utilizing AI technologies. Better productivity, efficiency, data analysis, accuracy, round-the-clock availability, better decision-making, cost savings, innovative solutions, and safety are the outcomes of this. AI also facilitates individualized solutions, promotes diversity, and assists complex problem-solving. Artificial intelligence (AI) systems analyze vast amounts of data, derive insightful information, and enable real-time information sharing, all of which support ongoing learning and innovation. AI also improves communication and information exchange between teams and departments, which strengthens collaboration. It is to this the study centers the impact of artificial intelligence on organizational performance using VFD Microfinance bank, Nigeria as a case study.

Little is known about how the deployment of AI impacts these important outcomes, even if the goal of applying AI is to improve overall performance, productivity, and effectiveness within organizations. Even though scholars have examined a number of aspects of AI adoption (Smith and Johnson, 2018), The direct effects of AI adoption on these important organizational outcomes are largely unknown. This knowledge gap needs to be filled in order to ensure that large investments in AI provide noticeable and measurable results for businesses. AI is becoming a more competitive tool for enterprises (Kinkel et al., 2022). It is to this the study centers the impact of artificial intelligence on organizational performance using VFD Micro Finance bank, Nigeria as a case study.

METHODOLOGY

The research used descriptive survey design as the strategy or plan of action regarding events which upon implementation will enable the researcher to investigate the problem of this study. The design is suitable for this study because data was collected from respondents using structured questionnaires as research instrument to give an assessment on the impact of Artificial Intelligence on organizational performance. The

study was conducted in VFD Micro Finance Bank in Lagos State, Nigeria, and the study population consists of selected staff of VFD Microfinance bank in Lagos. The Simple Random sampling technique was used for the selection of One hundred (100) staff of VFD micro finance bank in Lagos state which formed the researcher's respondents from the entire population. The quantitative data obtained from the field were processed and analyzed using descriptive statistics such as the use of simple percentages, tables and frequency distribution. The data obtained from respondents through the administration of questionnaires was collated and analyzed using Statistical Package for Social Sciences (SPSS Version 20.0). All One hundred (100) questionnaires that were administered within the study area, were fully completed and returned by the respondents.

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Table 1: Responses on Artificial Intelligence as a potential to significantly enhance operational efficiency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	50	50.0	50.0	50.0
	Agree	25	25.0	25.0	75.0
	Undecided	5	5.0	5.0	80.0
	Disagree	10	10.0	10.0	90.0
	Strongly disagree	10	10.0	10.0	100.0
	Total	100	100	100	

Source: Field Survey, 2024.

Table 1 shows the responses of respondents that Artificial Intelligence has the potential to significantly enhance operational efficiency. 50 respondents representing 50.0 percent strongly agree that Artificial Intelligence has the potential to significantly enhance operational efficiency. 25 respondents representing 25.0 percent agree that Artificial Intelligence has the potential to significantly enhance operational efficiency. 5 respondents representing 5.0 percent were undecided. 10 respondents representing 10.0 percent disagree that Artificial Intelligence has the potential to significantly enhance operational efficiency 10 of the respondents representing 10.0 percent strongly disagrees that Artificial Intelligence has the potential to significantly enhance operational efficiency.

Table 2: Opinions of Respondents on Artificial Intelligence as a tool that facilitates the personalization of products and services, creating more tailored customer experiences to enhance efficiency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	40	40.0	40.0	40.0
	Agree	50	50.0	50.0	90.0
	Undecided	2	2.0	2.0	92.0
	Disagree	3	3.0	3.0	95.0
	strongly disagree	5	5.0	5.0	100.0
	Total	100	100	100	

Source: Field Survey, 2024.

Table 2 shows the responses of respondents that Artificial Intelligence also facilitates the personalization of products and services, creating more tailored customer experiences to enhance efficiency. 40 respondents

representing 40.0 percent strongly agree that Artificial Intelligence also facilitates the personalization of products and services, creating more tailored customer experiences to enhance efficiency. 50 respondents representing 50.0 percent agree that Artificial Intelligence also facilitates the personalization of products and services, creating more tailored customer experiences to enhance efficiency. 2 percent were undecided. 3 respondents representing 3.0 percent disagrees that Artificial Intelligence also facilitates the personalization of products and services, creating more tailored customer experiences to enhance efficiency while the remaining 5 of the respondents representing 5 percent strongly disagrees that Artificial Intelligence also facilitates the personalization of products and services, creating more tailored customer experiences to enhance efficiency.

Table 3: Opinion of Respondents on Artificial Intelligence contributes to cost reduction and resource optimization, which are essential for maintaining profitability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	40	40.0	40.0	40.0
	Agree	50	50.0	50.0	90.0
	Undecided	2	2.0	2.0	92.0
	Disagree	5	5.0	5.0	97.0
	strongly disagree	3	3.0	3.0	100.0
	Total	100	100	100	

Source: Field Survey, 2024.

Table 3 shows the responses of respondents that Artificial Intelligence contributes to cost reduction and resource optimization, which are essential for maintaining profitability. 40 respondents representing 40.0 percent strongly agree that Artificial Intelligence contributes to cost reduction and resource optimization, which are essential for maintaining profitability. 50 respondents representing 50.0 percent agree that Artificial Intelligence contributes to cost reduction and resource optimization, which are essential for maintaining profitability. 2 respondents representing 2 percent were undecided. 5 respondents representing 5.0 percent disagrees that Artificial Intelligence contributes to cost reduction and resource optimization, which are essential for maintaining profitability while the remaining 3 of the respondents representing 3 percent strongly disagree that Artificial Intelligence contributes to cost reduction and resource optimization, which are essential for maintaining profitability.

Table 4: Responses on Artificial Respondents has an impact on operational process in business organization.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	50	50.0	50.0	50.0
	Agree	30	30.0	30.0	80.0
	Undecided	5	5.0	5.0	85.0
	Disagree	10	10.0	10.0	95.0
	strongly agree	5	5.0	5.0	100.0
	Total	100	100	100	

Source: Field Survey, 2024.

Table 4 shows the responses of respondents that Artificial Intelligence has an impact on operational process in business organization. 50 respondents representing 50.0 percent strongly agree that Artificial Intelligence

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has an impact on operational process in business organization. 30 respondents representing 30.0 percent agree that Artificial Intelligence has an impact on operational process in business organization. 5 respondents representing 5 percent were undecided. 10 respondents representing 10.0 percent disagrees that Artificial Intelligence has an impact on operational process in business organization while the remaining 5 of the respondents representing 5 percent strongly disagrees that Artificial Intelligence has an impact on operational process in business organization.

Table 5: Responses on Artificial Intelligence has proven to be a catalyst for growth and innovation.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	40	40.0	40.0	40.0
	Agree	30	30.0	30.0	70.0
	Undecided	15	15.0	15.0	85.0
	Disagree	10	10.0	10.0	95.0
	strongly disagree	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

Source: Field Survey, 2024.

Table 5 shows the responses of respondents that Artificial intelligence has proven to be a catalyst for growth and innovation. 40 respondents representing 40.0 percent strongly agree that Artificial intelligence has proven to be a catalyst for growth and innovation. 30 respondents representing 30.0 percent agree that Artificial intelligence has proven to be a catalyst for growth and innovation. 15 respondents representing 15.0 percent were undecided. 10 respondents representing 10.0 percent disagrees that Artificial intelligence has proven to be a catalyst for growth and innovation while the remaining 5 of the respondents representing 5.0 percent strongly disagrees that Artificial intelligence has proven to be a catalyst for growth and innovation.

Table 6: Opinion of Respondents on Artificial Intelligence has enabled companies to become more agile, innovative and competitive.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	40	40.0	40.0	40.0
	Agree	50	50.0	50.0	90.0
	Undecided	2	2.0	2.0	92.0
	Disagree	5	5.0	5.0	97.0
	strongly disagree	3	3.0	3.0	100.0
	Total	100	100	100	

Source: Field Survey, 2024.

Table 6 shows the responses of respondents that Artificial intelligence has enabled companies to become more agile, innovative, and competitive. 40 respondents representing 40.0 percent strongly agree that Artificial intelligence has enabled companies to become more agile, innovative, and competitive. 50 respondents representing 50.0 percent agree that Artificial intelligence has enabled companies to become more agile, innovative, and competitive. 2 respondents representing 2 percent were undecided. 5 respondents representing 5.0 percent disagrees that Artificial intelligence has enabled companies to become more agile,

innovative, and competitive while the remaining 3 of the respondents representing 3 percent strongly disagree that Artificial intelligence has enabled companies to become more agile, innovative, and competitive.

Table 7: Responses on Artificial Intelligence helps to make business operations easier.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	50	50.0	50.0	50.0
	Agree	25	25.0	25.0	75.0
	Undecided	5	5.0	5.0	80.0
	Disagree	10	10.0	10.0	90.0
	Strongly disagree	10	10.0	10.0	100.0
	Total	100	100	100	

Source: Field Survey, 2024.

Table 7 shows the responses of respondents that Artificial intelligence helps to make business operations easier. 50 respondents representing 50.0 percent strongly agree that Artificial intelligence helps to make business operations easier. 25 respondents representing 25.0 percent agree that Artificial intelligence helps to make business operations easier. 5 respondents representing 5.0 percent were undecided. 10 respondents representing 10.0 percent disagree that Artificial intelligence helps to make business operations easier. 10 of the respondents representing 10.0 percent strongly disagrees that Artificial intelligence helps to make business operations easier.

DISCUSSION OF FINDINGS

From the study above, majority of the respondents agrees with the fact that there is an impact of artificial intelligence on organizational efficiency in organizations in Lagos state. This can be traced to the empirical studies of Levin (2019) that examined the impact of artificial intelligence and block chain technology on entrepreneurship performance and success in Nigeria. This study adopted a survey research method and primary and secondary sources of data. A total of 70 employee of Kassy Block chain and technology agency, Lagos, Nigeria were chosen for the study using purposive sampling with 60 returned questionnaires administered. The data was analyzed using least square to test the formulated hypothesis in line with the objective. The findings showed that, there is significant relationship between artificial intelligence and block chain technology on entrepreneurship performance and success in Nigeria. Also, the findings above show that there is an impact of adoption of artificial intelligence on organizational performance of business organizations in Lagos state. This is in line with the of study conducted by Cheung & Messom (2018) on the impact of adoption of artificial intelligence on organizational performance of business organizations in Lagos state. The objective of the study was to empirically investigate how Artificial Intelligence relates with organizational performance of Money Deposit Banks in Rivers State in terms of customer satisfaction, economic performance and effective decision making. The study revealed that Artificial Intelligence has a very strong positive correlation with customer satisfaction of Money Deposit Banks in Rivers State, Artificial Intelligence has a strong positive correlation with economic performance of Money Deposit Banks in Rivers State, and Artificial Intelligence has a very strong positive correlation with effective decision making of Money Deposit Banks in Rivers State.

CONCLUSION

In the twenty-first century, AI techniques have experienced a resurgence following concurrent advances in computer power, large amounts of data, and theoretical understanding. AI techniques have become an essential part of the technology industry, helping to solve many challenging problems in business through capable artificial beings appeared as storytelling devices in antiquity, and have been common in fiction, as in

Mary Shelley's Frankenstein or Karel Čapek's R.U.R. (Rossum's Universal Robots). In order to boost their performance in today's competitive market, a growing number of manufacturing companies, particularly in developed countries are turning to artificial intelligence (AI) to help transform their operations and services. Modern information technologies and the advent of machines powered by artificial intelligence (AI) have already influenced the world of work in this 21st century. Computers, algorithms and software simplify the work process and everyday tasks and have given a facelift to our business operations.

RECOMMENDATION

After careful observation from the data collected and analyzed based on the objectives of the study, the study wishes to recommend the following:

1. Businesses must take proactive measures to address the obstacles to AI adoption if they want to optimize the technology's beneficial effects on organizational performance. It is advised that businesses concentrate on making investments in the training of a knowledgeable workforce by providing courses that give staff members the skills they need to work with AI. In addition to ensuring that employees can efficiently manage and fully utilize AI technologies, this will assist close the talent gap. Additionally, in order to stay up with the rapid advancement of AI technologies and approaches, organizations need cultivate a culture of continuous learning.
2. In terms of infrastructure, businesses should prioritize upgrading their technological capabilities, ensuring that they have the necessary tools and resources to support AI integration. This may include investing in cloud computing, data storage, and advanced cybersecurity measures to protect sensitive information. AI solutions should be chosen carefully, with a focus on those that align with the specific needs of the organization and industry.
3. Organizations should address data privacy and security concerns by implementing robust data protection frameworks that comply with relevant regulations. Ensuring transparency and accountability in AI systems will help build trust with customers and stakeholders. To this end, businesses should adopt ethical AI practices, ensuring that AI systems are free from biases and operate in a way that is fair and just for all users.

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