

Artificial Intelligence Milieu: Implications for Corporate Performance in the Nigerian Banking Industry

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Abstract: - Artificial Intelligence (AI) is being used in the banking industry in Nigeria to scale new heights in customer relationship management. The function and popularity of Artificial Intelligence was soaring by the day and the banking industry had shown a moderate level of adaptation to AI. This study examined the implication of the usage and prospects of AI in the Nigerian banking industry. Survey research design was used for this study. The population covers members of staff of four Commercial Banks in Nigeria. The study adopted Multi stage Sampling techniques. Content validity techniques were used to validate the accuracy of the research instrument. The research findings depict that all variables are significant at 0.01 level. The results showed that adaptation of AI in the banking operation has positive implications in terms of customer satisfaction, customer retention, fraud, risk reduction and enhanced maximization. The study recommends that “enabling environment, some of which are in turn strongly influenced by larger political economic realities, especially the peculiar Artificial Intelligent setting in Nigeria is one obvious factor that need to be addressed. In conclusion, the study concluded that Artificial Intelligence in Nigeria banking industry has resulted in customer satisfaction, risk reduction and customer’s wealth maximization since Artificial Intelligence plays the role of detecting mismatch in transactions, provides personalised advisory services and developing solutions for eliminating human errors.

Keywords: Artificial Intelligence, Banking Industry, Customers Retention, Enabling Environment, Customer’s Wealth Maximization.

I. Introduction

Millennials and their changing preferences have led to a wide scale disruption of daily processes of many industries and a simultaneous growth of many more in other sectors. Physical bank may soon be a thing of the past since the industries are adopting newer methods to match the pace of changing demands. There are lots of evident that banking is digitizing as the technology spread (Akyuz, 2021). Invariably, the banking sector today is battling to reduce liabilities and increase assets. Therefore, to provide systematic compliance management and operations, a fast track strategy is required. Artificial Intelligence (AI) is a key component of banking industries by helping to deliver affordable and dependable banking services (Zhhang, Pentina and Fan, 2021).

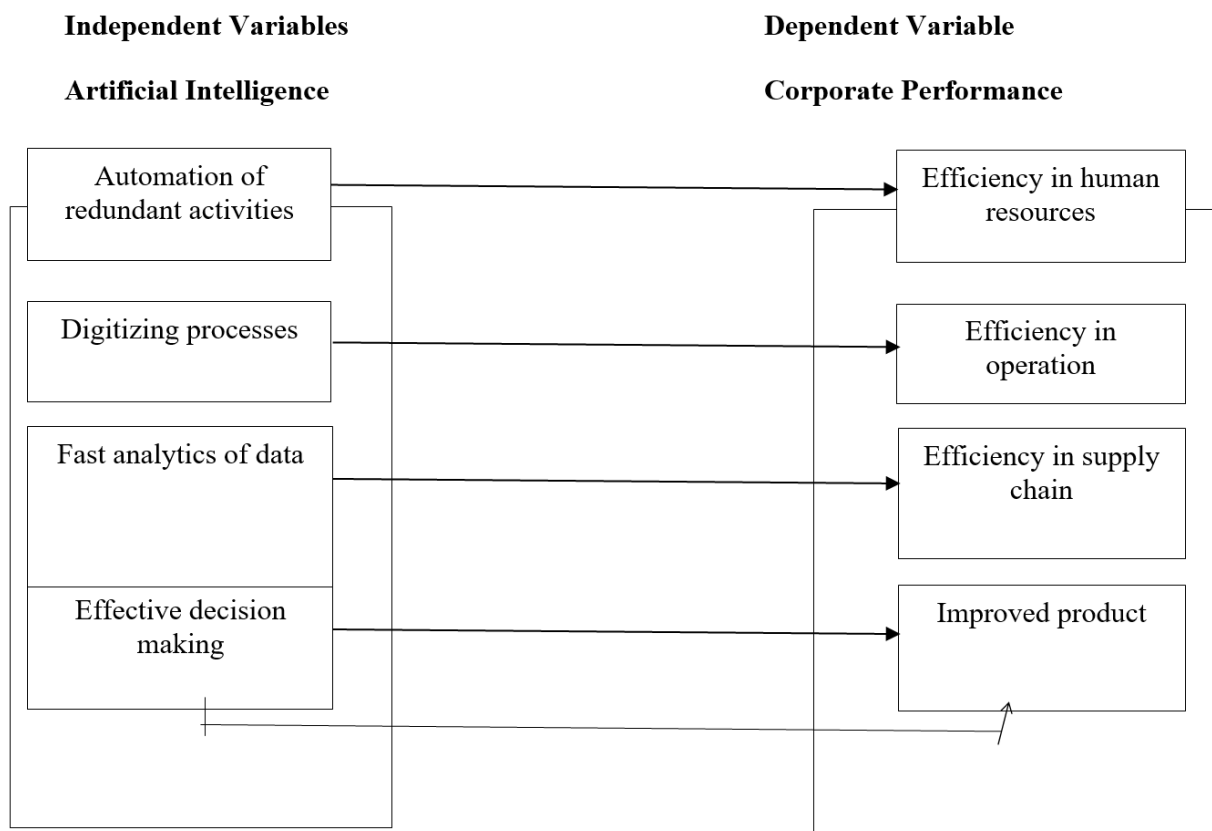
Artificial Intelligence (AI) is probably the defining technology of the present decade and perhaps the next (Orthman & Khatib, 2020). Today, the world is witnessing major developments in various areas of life, and in the light of the age of information and technology, many organizations cannot continue to carry out their activities without having the required artificial intelligence, as banks that do not adopt artificial intelligence can hardly achieve digital banking services (Aazhvaar, 2019). Hence, Artificial Intelligence (AI) techniques are being rapidly adopted for a new range of applications in the banking industry, especially now that industries are driven by efficiency and sustainability of growth, and the banking industry is not different in this regard (Artificial Intelligence, 2019). Sustainability of businesses is ideally based on proper decision making and artificial intelligence is unmatched in this process as it takes the human bias out of decision trees (Sarkar, Mohapatra & Sundarakrishnan, 2019).

According to Alkaabi and Nobanee (2019), there is a need to automate decision making processes in a multi – facets business in order to reduce the margin of error. Therefore, Banks are adopting computer programs to enhance capabilities of business by the implementation of sophisticated artificial intelligence to curb fraudulent practices, improve customer response, offer standard customer service, enable virtual assistance to offer real time solutions and digital documentation. And the technology has come to play an integral role in a range of activities, from improving customers experience to a more efficient management of compliance, empowering banks to provide individualized frictionless customer experiences, drive customer loyalty, profitability and automate processes (John & Brendan, 2018).

According to Basson and Walters (2019) the performance of businesses is very crucial in predicting, ascertaining and evaluating the level of growth and outcomes in business organizations, and AI in today’s world is progressing rapidly with new advanced innovations over where computer systems are designed to perform some tasks. For instance, facial recognition, robotic auto driving and performance of other minor duties effectively and efficiently. The evidence of such is glaring when there is cost reduction, risk mitigation, and increasing revenues through the applications of newly capable technology in analytics (Wisskirchen, 2019).

From the aforementioned, the father of Artificial Intelligence (AI), John McCarthy defined AI as “The science and engineering of making intelligence machines, especially intelligence computer programs” Cioffi (2020), posits that the goals of AI is to create expert systems which exhibit intelligent behaviour, learn, demonstrate, explain and advice the users. Therefore, Artificial Intelligence equally signifies the ability of a machine to perform cognitive functions which is associated with human minds, such as perceiving, reasoning, learning, interacting with the environment, problem solving, knowledge, planning, natural language processing, perception, manipulating the physical world and even exercising creativity, (Atherton & Peter, 2019). In other words, AI refers to systems that display intelligent behaviour by analysing their environment and taking action – with some degree of autonomy – to achieve specific goals (Jamie, 2020). These description of the concept and application of Artificial Intelligence ignite the notion that Artificial Intelligence has come to reduce human stress and errors at work place by gradually replacing hither to laborious human exercise in any business process.

Whereas, in the past few years, banking activities in Nigeria have increasingly depend on the development of Information and Communication Technology (ICT) (Arnove, 2020). This is speedily becoming a reality in developed economies with people who are far away being able to engage in formal and informal relationship, which would have required them to engage in travels that may take hours or days. Hence, leading to the rising numbers of financial institutions introducing and expanding their offerings of electronic banking products through which information flows more easily (Ashoka & Vinay, 2019).



Source: Researcher Conceptual Model (2023)

Figure 1: Conceptual Model of the Study

Research Objectives

The major objectives of the study is to examine the implications of Artificial Intelligence (AI) and Corporate Performance in the Nigerian Banking Industry. Other objectives are to;

- i. Examine the implications of the adoption of AI in the banking Industry.
- ii. Evaluate the prospects of AI in Nigeria banking Industry.

Research Questions

- i. What are the implications for the adoption of AI in the banking Industry?
- ii. Does AI portend great prospects in Nigeria banking Industry?

Nigeria Banking Industry

Nigeria is a major developing African country, and likewise its banking industry. Besides South Africa, Nigeria has the most prominent banking industry in Africa. The opportunities for the application of AI in banking industry are immense and we expect the effect to grow significantly in the next few years since Nigeria banks are dynamic in embracing it. The implication is that the journey for banks in Nigeria has started with rule-based Chatbots like GTBank Plc., Zenith Bank Plc., Stanbic IBTC, and Unity Bank Plc. which allow customers to perform basic banking transactions on the go at various levels of sophistication (Aberg & Khati, 2018).

However, banks in Nigeria can leverage on AI to unlock significant opportunities that would transform retail lending, product design, and the overall banking model to the mass market. AI will significantly reduce cost to serve each customer, allowing banks increase coverage to the unbanked and boost profitability while providing excellent customer service at a progressively reducing cost. AI and its derivatives when applied correctly will reduce error rates and can help attack the data quality monster that has haunted Nigeria banks for years. Yet, AI enabled data clean – up can significantly speed up the process of rectifying years of wrongly captured and poorly managed customer data (Alsedrah, 2019).

However, Alan Turing, 1950 changed history a second time with a simple question: “can machines think”? Turing’s paper “Computing Machinery and Intelligence and its subsequent Turing Test, established the fundamental goal and vision of artificial intelligence. At its core, AI is the branch of computer science that aims to answer Turing’s question in the affirmative. It is the endeavour to replicate or simulate human intelligence in machines (Gadam, 2018).

II. Methodology

Research Design

The study adopted a conclusive survey research design. A structural questionnaire was designed to gather information from respondents. The accuracy of the research tool was measured using content validity technique. The researcher adopted judgemental techniques to select four banks; GTBank Plc., Zenith Bank Plc., Stanbic IBTC, and Unity Bank Plc. based on her personal customer experience with these banks and many others. Bank departments, designation and job schedule were used as strata to select 235 employees as respondents for this study. 80 members of staff from 16 branches of Unity Bank and Stanbic IBTC in Lagos State were selected as sample elements while 155 members of staff were equally selected from 24 branches of GTBank Plc. and Zenith. Both zenith and GTBank Plc have more branches in Lagos than the other two. Hence, the justification for selecting more branches and members of staff from the duo. However, only 200 copies of the questionnaire were found to be valid for analysis.

A combination of both descriptive and inferential statistics were used for data analysis. Respondents demography was analysed through simple percentage, while pearson correlation and regression analysis was used to test the hypothesis.

III. Analysis and Discussion of Findings

Analysis: Inferential statistical results for the data collected from survey for this research is discussed here in.

Application of Artificial intelligence has significant positive implications on performance of banks.

Table 1

Modal summary

| Model | R. | R square | Adjusted R square | Std. Error of the estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| | .980 _a | .961 | 9.58 | .294 |

a. Predictors (Constant), R₁, R₂, R₃, R₄

Table 2

ANOVA

| Model | Sum of squares | Df | Mean square | F | Sig. |
|------------|----------------|-----|-------------|--------|-------|
| Regression | 398.504 | | 39.85 | 460.05 | .0006 |
| Residual | 16.371 | 189 | 0.87 | | |
| Total | 414.875 | 199 | | | |

Table 1 and 2 depict the results and coefficient of determination of the variables. R square value is 0.961, which means that 96.1% of variations in the dependent variable can be traced to the independent variables together. This means that application of Artificial Intelligence system in the banking industry account for 96.1% improved performance of banks used as case study. This submission aligns with the studies of Nuseibeh 2017; Elegunde and Shotunde 2020 and Alzaidi 2018. This study affirms that banking industry can provide more efficient and effective services when compared to any financial advisor.

The implication is that it will promote more efficient and smart portfolio management along with cost and service time reduction. The ANOVA analysis presented above infer that the null hypothesis can be rejected in the regression analysis, as the value of F is equal to 460.058, mean square value is 39.850 and high significance level value is 0.000. This indicates that the modal presented by the research is fit.

Implications

The responses from the survey of this study show that technological adaptation in the banking industry in Nigeria is still at a mid-point development stage. Especially, when compared with the potentialities that Artificial Intelligence portends. The application, use and acceptance of Artificial Intelligence in Nigeria Banking Industry is far from optimum among utilization among banks in Nigeria. The peculiar Artificial Intelligence setting (environment) in Nigeria is one obvious factor that need be addressed. Inconsistent power and network supply, high cyber theft and fraud, social insecurity among others are contextual mitigating factor.

However, with a coefficient value of 0.961, it's obvious that Artificial Intelligence application still account for a significant performance of banks. And this submission is comparable to the findings of some other local and foreign researchers.

IV. Discussion of Findings

This study involves a critical exploration of Artificial Intelligence AI Milieu and to some extent it's implications for corporate performance in Nigerian banking industry. Some positive manifestations that accord banks that practices AI, such as, technologies transformation in banking processes, making operation faster, money transfers safer and back-end operations more efficient were observed (Stephen, 2019). The study also recognised speech recognition learning, planning and problem solving as part of the activities that is designed for Artificial Intelligence AI.

Also, Artificial intelligence AI has made it more convenient to do daily transactions such as money transfer, payments at purchase etc. Consumers can do better financial planning, can get smart transaction advisory, can do efficient and quicker transactions with the advent of artificial intelligence in mobile banking; GTBank Plc., Zenith Bank Plc., Stanbic IBTC, and Unity Bank Plc. Findings equally showed that even though banking and financial services have been slower than other industries to adopt the latest technology into their operations, financial organizations are trying to catch up by incorporating artificial intelligence, block chain, Omni channel, smart banking and other technology to benefit their customers, remain competitive and improve business results especially in 2020's and beyond (Chakraborty & Joseph, 2019).

V. Conclusion

Being the red-hot topic, Artificial Intelligence has revolutionised our lives with its mind-boggling capabilities. The central research objective of this study is to examine the research implication of the adoption of Artificial Intelligence in Nigeria banking industry and this study submits that: Artificial Intelligence in Nigeria banking industry has resulted in customer satisfaction, customer's retention, risk reduction and customer's wealth maximization because Artificial Intelligence is used in detecting mismatch in transactions, provides personalised advisory services and developing solutions for eliminating human errors. Also, reduction of manual task and reduced need for back office operation is also achieved via application of Artificial Intelligence. Although, full actualization of the benefits of advanced Artificial Intelligence is yet to be achieved but the study affirm that the use of sophisticated algorithms of Artificial Intelligence can enhance efficient risk and assets management in the banking industry which can further optimise financial policies of banks. A further investment by banks on quick and efficient Artificial Intelligence systems can enable banks increase their revenue generation drive and increased relative market share.

However, specific efforts are required to further sensitise bank customers on the need to accept and use more of the Artificial Intelligence devices for their transactions.

VI. Recommendations

The study recommends the following;

1. A banking industry opting to adopt Artificial Intelligence in its organisation must be careful enough to examine the implications of doing so, considering the fact that many banks face the challenge of lack of data to implement operational changes leaving to the banking sector facing a disconnect between the need and response from customers.
2. Additionally, the study recommends a comprehensive examination by the users of artificial intelligence in the banking industry so as to unveil and derive from the prospects embedded in it, as the industry stands significant opportunities that would transform its organisation.

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