

**ARTIFICIAL INTELLIGENCE (AI) AND BUSINESS
PRACTICES: INSIGHTS FROM MARKETING FIRMS IN
OWERRI**

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ABSTRACT: The study assesses how artificial intelligence (AI) influences business practices of marketing firms in Owerri. Key areas which the study examines include the connection between AI and reduction of human error in financial data analysis; AI and decision making, business process automation and customer engagement. The research adopts the survey research design. The study uses primary sources of data. The study uses a structured questionnaire as the major instrument for data collection. The study adopts the purposive sampling technique. Cronbach Alpha statistic was used to obtain a value of 0.88 as the instrument reliability ratio. The research employs descriptive and inferential statistics for data analysis. The findings revealed a positive and significant level of correlation between artificial intelligence (AI) and reduction in human error in the financial data analysis of marketing firms in Owerri; artificial intelligence (AI) and enhanced decision making of marketing firms in Owerri; artificial intelligence (AI) and automation of business processes of marketing firms in Owerri; artificial intelligence (AI) and improved customer engagement of marketing firms in Owerri. The study concludes that artificial intelligence (AI) significantly correlates with the business practices of marketing firms in Owerri. The study recommends among others that management should always ensure that those who are directly involved in using artificial intelligence (AI) in solving business problems are periodically trained and retrained to always ensure that the reduction in human error in financial data analysis in the enterprises continues to improve; marketing firms need to always make good use of artificial intelligence (AI) in making those decisions that have the capacity to add value to the quality of decision making in organizations and to overall corporate wellbeing.

Keywords: Artificial Intelligence, Business Practices, Marketing Firms

INTRODUCTION

Any 21st century business enterprise that desires for continuous improvement in its activities, operations and processes ought to undoubtedly, religiously embrace artificial intelligence (AI) in order to achieve its dreams. AI can be defined as a conglomeration of technologies which help computers to carry out a litany and various aspects of functions which are advanced including the capacity of seeing, understanding and even translating spoken language as well as written language plus the capacity of analyzing numerical and non-numerical information which offers recommendations among others. Stryker and Kavlakoglu (2024) opine that AI represents a technology that helps computers as well as machines to “simulate human learning, comprehension, problem solving, decision making, creativity and autonomy. Copeland (2024) maintains that the term AI is often applied in developing systems empowered with the “intellectual process characteristic” of human beings including the

capacity for reasoning, discovering meanings, generalizing or even learning from past experiences.

Smith (2006) reveals that AI as a term was first used by John McCarthy in the year 1956. However, Coursera (2024) maintains that Alan Turing, a British Mathematician had imagined a machine with the ability to advance far past its original programming hence Turing believed that a computing machine could at first be coded in such a way as to function in alignment with that programme but could also expand far above its initial functions. Turing however did not have the technology for proving this theory of his for the reason that machines for computing were yet to advance to that level. However, Turing is credited with the conceptualization of AI prior to it being called AI. Turing in addition, innovated a means for examining whether a machine could think at the same level with human beings and this he called ‘the imitation game’, which is presently popularly known as ‘the Turing test’.

AI has various advantages in business. Pratt (2024) opines that AI helps for better business decisions; it boosts efficiency and productivity; it enhances business speed; it triggers new business capabilities and expansion of business model; it encourages personalized customer services and experiences; it adds value to services; it increases the quality of monitoring and it guarantees better quality and reduction of human error. It also improves better talent management; it leads to more innovations; it increases profitability and it ensures industry-specific improvements (Pratt, 2024).

This study focuses on how AI may influence reduction of human error in financial data analysis, enhanced decision making, automation of business processes and improved customer engagement. Vijayanarayanan (2024) maintains that AI improves accuracy; it reduces human error and it enables the users of financial data to comply with regulatory standards. AI streamlines repetitive tasks while reducing human errors. Antusi, Adelakun and Eziefule (2024) maintains that AI has the ability to fish out irregularities in financial transactions, indicate possible risks and boost deflection of fraud thereby enhancing the integrity and reliability of financial reports.

For enhanced decision making, Purdy and Williams (2023) assert that AI has the capabilities to cause business leaders to take better decisions even under pressure. They posit that many enterprises now turn to AI-enabled technologies to bridge data-insight gaps and enhance corporate decision making abilities in critical times and high-pressure circumstances. This agrees with the view of Barber (2024) who asserts that decision making automated with AI enables enterprises to take faster decisions that are accurate and reliable as the firms capitalize on AI-powered datasets. AI can analyze large datasets error-freely.

As it relates to automation of business processes, AI creates systems which harmonize operations, cause reduction in manual labour and beef the abilities to handle information. Leeway (2024) reveals that automation is now a cornerstone of business success for modern businesses as it enhances business efficiency, productivity and result quality. Ademola (2023) describes AI and automation of business process as two buzzwords that drive the world of business recently as they improve revenue, reduce costs, satisfy customers, cause improved brand recognition, increase market shares and boost innovation.

Improved customer engagement is yet another business practice which this study assesses. AI has the capacity to predict customer product interests by way of carrying out purchase history

analysis, customers' online behavior and other appropriate customer information. This triggers proactiveness in the offering of products to customers thereby boosting the satisfaction of the customers as well as customer engagement. Kovalskiy (2024) opines that the AI technologies that impact on customer engagement are machine learning (ML), natural language processing (NLP) and data analytics. AI can be used to automate customer service with the instrumentality of AI-powered chatbots and virtual assistants; by way of enhancing response times and quality and by boosting customer interaction, customer feedback, and improvement. This agrees with the view of Jaby (2024) who posits that the strategies include personalized recommendations, chatbots and virtual assistants, voice assistants and natural language processing, predictive customer service, advanced text analytics, sentiment analysis, real-time personalization, seamless omnichannel experience, customer segmentation, and AI-powered customer relationship management.

The research fills a gap by examining AI's relevance on marketing firms in a developing economy context. This study on the Artificial Intelligence (AI) and business practices of marketing firms: Insights from marketing firms in Owerri is conducted to investigate how AI influences business practices. This is with a view to bridging research gaps while contributing to knowledge on the link between AI and business practices of marketing firms in Owerri.

Statement of the Problem

The researcher has observed that many business enterprises in Owerri are yet to employ AI in their business practices. This is certainly not to the best interest of both the corporate entities and their stakeholders. It is ideal that any business organization that desires to have pleasant business experiences in the 21st Century ought to embrace AI in its operations, activities and practices. It is however worrisome that a good number of firms do not budget for AI neither have they taken any calculated steps to deploy AI technologies in their organizations. This ugly situation has the capacity to increase human errors in financial data analysis; it has the ability to impede or even delay quality decision making in business; it can deny enterprises the opportunity to enjoy the key benefits of AI-aided business process automation and it can cause decline in and weakening of customer engagement. All these have no tendencies of ushering any business to the next higher level.

In fact, empirical studies accessed by the researcher on AI and business practices did not show how AI influenced reduction of human error in financial data analysis in marketing firms in Owerri neither did they indicate the correlation between AI and enhanced decision making in the marketing firms. Also, those studies accessed by the researchers did not show the correlation between AI and automation of business processes in marketing firms in Owerri neither did they examine how AI influenced improved customer engagement in the firms. These show that wide research gaps exist on the link between AI and business practices of marketing firms in Owerri. It is as a result of the observed research gaps that this study is conducted to fill the gaps with a view to contributing to knowledge.

Objectives of the Study

The main objective of this study is to investigate artificial intelligence and business practices of marketing firms in Owerri. The study specifically intends to:

- i. assess the level of correlation between artificial intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri.
- ii. unearth the extent to which artificial intelligence (AI) correlates with enhanced decision making of marketing firms in Owerri.
- iii. examine the level of correlation between artificial intelligence (AI) and automation of business processes of marketing firms in Owerri.
- iv. determine the extent to which artificial intelligence (AI) correlates with improved customer engagement of marketing firms in Owerri.

Research Questions

On the basis of the objectives of the study, the researcher develops the following research questions:

- i. What is the level of correlation between artificial intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri?
- ii. To what extent does artificial intelligence (AI) correlate with enhanced decision making of marketing firms in Owerri?
- iii. What is the level of correlation between artificial intelligence (AI) and automation of business processes of marketing firms in Owerri?
- iv. To what extent does artificial intelligence (AI) correlate with improved customer engagement of marketing firms in Owerri?

Hypotheses

In alignment with the research questions, the researcher develops the following null hypotheses:

- H01:** There is no significant level of correlation between artificial intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri.
- H02:** There is no significant extent to which artificial intelligence (AI) correlates with enhanced decision making of marketing firms in Owerri.
- H03:** There is no significant level of correlation between artificial intelligence (AI) and automation of business processes of marketing firms in Owerri.
- H04:** There is no significant extent to which artificial intelligence (AI) correlates with improved customer engagement of marketing firms in Owerri.

Scope of the Study

Geographically, the study focuses on Owerri Municipal, the Seat of the Government of Imo State. The content scope shows the relationship between artificial intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri; artificial intelligence (AI) and enhanced decision making of marketing firms in Owerri; artificial intelligence (AI) and automation of business processes of marketing firms in Owerri; artificial intelligence (AI) and improved customer engagement of marketing firms in Owerri. The unit scope comprises of the Chief Executives and Unit Heads of Accounting/Finance,

Human Resources, Information Technology(IT), Operations and Marketing in the marketing firms. This is in agreement with the objectives of the study.

REVIEW OF THE RELATED LITERATURE

The review of the related literatures consists of conceptual, theoretical and empirical reviews. The gap in literature is also identified.

Conceptual Review

This sections examines the major concepts which this study investigates.

Human Error in Financial Data Analysis

AI may influence human error in financial data analysis. Human error describes a situation whereby ‘a planned sequence of mental or physical activities fail to achieve its intended outcome and when these failures cannot be attributed to outside intervention’. Human error shows mistakes, actions that were not intentioned, omissions that were not intentioned by people but which cause failures in tasks or systems. Smajic (2024) posits that AI has come to become a formidable tool for reducing human error and improve efficiency. Eser (2024) reveals that human error is a major cause of 95% of cybersecurity incidents; 80% of workplace accidents; 90% of all aviation accidents among so many other instances.

Human error does not lack in financial data analysis. Tuovila, Kindness and Kvilhaug (2024) define financial analysis as the process used to assess businesses, plans, projects and other financial transactions to find out if they are performing as expected and if they are suitable. It investigates the degree of stability, solvency, liquidity or profitability of a going concern so as to ascertain its state of warranting monetary investment. Jadia and Luna (2024) opine that it is through human errors that there may be variations in financial data. Such mistakes can take the form of data entry errors, misinterpretation or even the failure to get records updated. The errors adversely influence business financial statements, tax filings and corporate decisions. AI helps to eliminate these errors.

Decision Making

AI may be instrumental to enhanced decision making in businesses. Laoyan (2024) opines that decision making involves the process of information gathering, evaluating alternative courses of action, and arriving at a final choice with a view to making the most optimal decision. In decision making, it is pertinent to identify or define the required decision; obtain appropriate information; do the identification of alternative solutions; weighing the evidence via the pros and cons analysis, SWOT analysis and decision matrix; making a choice among the alternatives; the taking of necessary action; and the review of decision and its positive or negative impact (Laoyan, 2024).

Ibe, Asuu, Olorunsogo, Elufioye, Ndubuisi and Daraojimba (2024) assert that AI and Machine Learning (ML) technologies are transforming strategic decision-making by way of automating complex tasks and providing real-time insights. Natural Language Processing (NLP) algorithms analyse unstructured data sources like customer reviews and social media

posts with a view to extracting useful information as well as sentiment analysis so as to gauge customer satisfaction levels and identify promptly, areas of improvement.

Automation of Business Process

With the instrumentality of AI, the automation of business processes may be seamless. Javaid (2024) describes business process automation as a way of ensuring seamless flow of business operations in such a way that repetitive assignments are executed with precision while the team concentrates on very important issues. It is a replica of having a digital workforce that does not get tired of implementing tasks that are repetitive in a business. It replaces manual efforts with technology. It increases efficiency, accuracy, scalability and saving of costs. AI is a great feature of business process automation as it can learn and adapt while providing greater efficiency over time (Ibeh et al, 2024).

Customer Engagement

AI may be a great boost to customer engagement. Danao (2024) believes that customer engagement has to do with the act of growing relationships with the customers at each point in time. It encompasses the understanding of customer needs, customer preferences and customer points of pain. The process of engaging a customer commences at the point a potential customer becomes aware of a product and it continues even up to the post-purchase stage.

Kovalskiy (2024) opines that time is gone when AI was assumed to be an abstract concept hence it remains a strong tool for reshaping the way enterprises interact with customers. It makes the interactions to be more impactful and even personalized. This gives room for transforming every interaction into a golden opportunity to achieve growth as well as connection. The AI technologies that influence customer engagement include Machine Learning (ML), Natural Language Processing (NLP) and data analytics (Kovalskiy, 2024).

Theoretical Review

The study employs the Diffusion of Innovation theory in handling the nexus between AI and business practices of marketing firms in Owerri

Diffusion of Innovation Theory

The theory was developed by E.M Rogers in 1962. Halton, Kelly and Pere (2023) describe the theory as a hypothesis which shows the way new developments in technology as well as other advancements spread across societies and cultural settings beginning from introduction to a level of adoption that is widespread. The theory explains the reason behind the adoption of ideas that are new, new practices and the reason why adopting new ideas spreads out over a long time frame.

Rogers who was a communication theorist at the University of New Mexico maintains that the core persons in the theory include the innovators, early majority, late majority and laggards. Innovators are the persons who are not risk averse but are very open to taking risks and in fact, they are the first set of people to attempt new ideas. The early adopters are persons who have interest in the trying of new technologies so as to show their utility among

societal members. Early majority refers to people who create the avenue for an innovation to be used with the society's mainstream. They are also members of the general population. The late majority are those who emulate the early majority by way of adoption of the innovation as an integral part of their day-to-day life and they are of course, part of the general population. The laggards are the people who lag or stay behind the general population in the adoption of innovative products and new ideas.

Artificial Intelligence is a technology which many businesses adopt at various stages of their corporate existence. While some represent the innovators, early adopters and early majority, many others may certainly become the late majority and laggards.

Empirical Review

The following empirical studies were used to boost the study:

Abdulhamid and Abubakar (2024) did an overview of the role of AI on the performance of small and medium scale enterprises in Nigeria. The major objective of the study was to examine how AI could be employed in advancing business operations in Nigerian SMEs. Extant literature method was used in the study. It was found that AI is necessary for keeping a safe distance from others while doing business from a secure location and improving customer loyalty and bringing in business for organizations and at the same time giving a competitive edge to the SMEs. It was concluded that SMEs stand to benefit from the application of AI in the organizations.

Essien, Odejide, Okoronkwo and Afolabi (2024) did 'a paradigmatic discourse on the correlation between investing in AI, effective communication and national transformation'. The objectives of their study were to investigate the extent of the adoption of AI technology and communication in the transformation of Nigeria; to identify the potential benefits and drawbacks of incorporating AI and communications into Nigeria's transformation efforts; and to examine the ethical, legal and social implications of AI on Nigeria's transformation as it relates with data privacy, transparency and accountability. The extant literature approach was adopted by the researchers. The study finds that AI in communication has the capacity to transform business and Nigeria's economy. Investing in technology and infrastructure may reduce AI's negative effects on the employment market. Government regulation and investment in AI, if properly done, have the capacities to accelerate Nigeria's digital transformation. The researchers concluded that AI application to the communication process could lead to faster, more accurate and more efficient exchanges of information while improving user experience and communication quality based on the ability to send customized messages.

David (2024) did a research to investigate the impact of AI on cybersecurity in Nigeria. The study adopted the desk research method. It was found that AI's impact on cybersecurity has been profound, as it transforms organizations, prevents and responds to cyber threats.

Izugboekwe, Joshua, Gambo, Olubodun and Ameh (2024) assessed 'AI and business security among SMEs in Abuja Metropolis. The study was conducted to: determine the impact of AI security protocols on business security among SMEs in Abuja FCT; evaluate the impact of employee AI training on business security; assess the impact of customer data privacy measures on business security; and investigate the impact of automated threat detection on

business security among the SMEs. It was a survey research. Data analysis was done using multiple regression analysis which shows that AI security protocols, customer data privacy measures and automated threat detection significantly enhanced business security while employee AI training showed no substantial impact. Their study concludes that AI beefs business security among SMEs in Abuja Metropolis. It was recommended that SMEs should focus on the development and implementation of robust AI security protocols so as to dictate and mitigate potential threats while boosting the overall security posture of the organization.

Ebuka, Emmanuel and Idigo (2023) examined AI as a catalyst for the sustainability of Small and Medium Scale businesses (SMEs) in Nigeria. The study identified areas where AI could be deployed, barriers to deployment of AI, and AI tools in business while ascertaining the number of SMEs that consciously use any form of AI in their business operations. The survey research method was adopted. Data analysis was committed to descriptive statistics. It was found that most SMEs in Nigeria were still operating manually and so did not enjoy the massive potential of AI deployment thereby exposing themselves to perpetually remaining small in size. It was concluded that small businesses shy away from AI over perceived inhibitive costs and lack of expertise to deploy AI.

Ugo (2023) did ‘an empirical investigation of the impact of AI on Accounting practice in Nigeria’. the objectives of the study were to ascertain the impact of expert systems on accounting practice in Nigeria; and to evaluate the impact of neural networks on accounting practice in Nigeria. It is a survey research. Descriptive statistics of frequency tables and percentages were used for data analysis. Hypotheses were tested with probability values which were extracted from regression output. It was found that expert systems and neural networks positively and significantly influenced accounting practice in Nigeria. It was concluded that any Accountant that fails to update his/her skills with AI competences may become irrelevant in the nearest future. It was recommended that Accountants should attend seminars and workshops to boost their AI proficiencies.

Gap Identified in Literature

Empirical studies accessed by the researcher in the area of Artificial Intelligence (AI) did not assess the relationships which this present student evaluates. Efforts were not made by previous researchers to examine the level of correlation between: Artificial Intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri; Artificial Intelligence (AI) and enhanced decision making of marketing firms in Owerri; Artificial Intelligence (AI) and automation of business processes of marketing firms in Owerri; Artificial Intelligence (AI) and improved customer engagement of marketing firms in Owerri. As such, this present study covers the identified gaps.

METHODOLOGY

The study employs the survey research design. The population of the study comprises of the Chief Executives and Units Heads of Accounting/Finance, Human Resources, Information Technology (IT), Operations and Marketing in twenty-four (24) marketing firms in Owerri. The justification is that these officers are the most relevant staff to answer questions on the variables and indices developed in this study. The total population of the study is 144. The study uses the Taro Yamen’s formula for sample size determination to obtain a sample size of 106 for the study. Therefore, 106 copies of the questionnaire were administered to

respondents in the study firms. The sources of data include the primary and secondary sources. The questionnaire was the major instrument of data collection used for the study as a primary data tool. Closed ended questionnaire items were used in the study. The face validity of the questionnaire was done by showing the instrument to some research experts for their inputs. Corrections were also made in the process of peer-reviewing the manuscript. The content validity was done by ensuring that the items in the questionnaire are in alignment with the research objectives, research questions and research hypotheses. The researcher relied on texts, journals and internet sources for secondary data. The validity of the instrument was done by showing the instrument to research experts for their inputs and by ensuring that the study focused on the research questions. The reliability ratio of the instrument was done with the use of pilot study whose results were committed to Cronbach alpha statistic. A test re-test Spearman Product Moment Correlation analysis was conducted with the questionnaire on some marketing workers of some enterprises with a gap of two weeks. A ratio of 0.88 was obtained. The instrument was therefore 88% reliable. The study uses the purposive sampling method since the researcher understands the purpose of the study and those who are in the best position to answer the research questions. The study employs the descriptive statistics of mean and standard deviation for data analysis. Spearman Product Moment Correlation analysis was used to test hypotheses. The rejection of null hypothesis was based on $P < 0.05$.

DATA PRESENTATION AND ANALYSIS/DISCUSSION OF RESULTS

Out of the 106 questionnaire copies distributed to the respondents, only 90 copies were properly filled and returned. This means 84.9% return.

Research Question 1: What is the level of correlation between Artificial Intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri?

Table 1: Respondents' responses on the level of correlation between Artificial Intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri

Q/No	Item	SA	A	UN	D	SD	N	Mean	Std. Dev.
1	Artificial intelligence prudently analyzes large volumes of financial data thereby drastically reducing human errors in financial data analysis.	43	28	9	4	6	90	4.09	0.841
2	Management gives those who use AI to handle financial data analysis very serious training that targets elimination of human errors in AI-aided data management.	40	27	10	7	6	90	3.98	0.831

Field Survey (2024)

Table 1 above presents data from responses by the respondents under study. The result also disclosed a strong agreement by the respondents on their opinion on the level of correlation between artificial intelligence (AI) and reduction of human error in financial data analysis of

marketing firms in Owerri. The results further show that the respondents agreed to the facts that: artificial intelligence prudently analyzes large volumes of financial data thereby drastically reducing human errors in financial data analysis (of ; management gives those who use AI to handle financial data analysis very serious training that targets elimination of human errors in AI-aided data management (with a of). The foregoing results may be because AI is structured to eliminate or at least drastically reduce human errors in business practices.

Research Question 2: To what extent does Artificial Intelligence (AI) correlate with enhanced decision making of marketing firms in Owerri?

Table 2: Respondents' responses on the level of correlation between Artificial Intelligence (AI) and enhanced decision making of marketing firms in Owerri

Q/No.	Item	SA	A	UN	D	SD	N	Mean	Std. Dev.
3	Artificial intelligence facilitates quality decision making in marketing firms.	41	31	8	7	3	90	4.11	0.854
4	Artificial intelligence enables effective marketing research thereby adding value to decision processes of marketing enterprises.	34	21	20	10	5	90	3.77	0.622

Field Survey (2024)

Table 2 above presents data from responses by respondents on the level of correlation between artificial intelligence (AI) and enhanced decision making of marketing firms in Owerri. The results show that majority of the respondents affirmed to the statements. There is a high level agreement by the respondents on the opinion that Artificial Intelligence facilitates quality decision making in marketing firms as the result accounted for a mean of 4.11 and a standard deviation of 0.854. The result has indicated that the majority of the respondents agreed to the item statement that Artificial Intelligence enables effective marketing research thereby adding value to decision processes of marketing enterprises (with a of). The foregoing results may be because AI is structured to enhance decision making in business.

Research Question 3: What is the level of correlation between artificial intelligence (AI) and automation of business processes in marketing firms in Owerri?

Table 3: Respondents' responses on the level of correlation between Artificial Intelligence (AI) and automation of business processes in marketing firms in Owerri

Q/No.	Item	SA	A	UN	D	SD	N	Mean	Std. Dev.
5	Artificial intelligence helps to beef up the quality of automation of business processes in marketing firms.	42	29	9	7	3	90	4.11	0.846
6	Management ensures that those that handle automation of business processes are quite skilled in application of Artificial Intelligence (AI).	33	23	20	11	3	90	3.8	0.638

Field Survey (2024)

The Table 3 above presents data from responses by respondents on the level of correlation between artificial intelligence (AI) and automation of business processes in marketing firms in Owerri. The results show that majority of the respondents affirmed to the statements. There is a high level agreement by the respondents on the opinion that artificial intelligence helps to beef up the quality of automation of business processes in marketing firms as the result accounted for a mean of 4.11 and a standard deviation of 0.846. The result has indicated that the majority of the respondents agreed to the item statement that management ensures that those that handle automation of business processes are quite skilled in application of Artificial Intelligence (AI) (with a of). The foregoing results may be because AI is structured to be an automated system for efficiency in business practices.

Research Question 4: To what extent does artificial intelligence (AI) correlate with improved customer engagement of marketing firms in Owerri?

Table 4: Respondents' responses on the level of correlation between artificial intelligence (AI) and improved customer engagement of marketing firms in Owerri

Q/No.	Item	SA	A	UN	D	SD	N	Mean	Std. Dev.
7	Artificial intelligence improves the quality of customer engagement in marketing firms.	42	29	10	6	3	90	4.12	0.933
8	The marketing firms compete more favourably with rivals over customer engagement competences because of effective usage of Artificial Intelligence.	34	22	20	9	5	90	3.79	0.637

Field Survey (2024)

Table 4 above presents data from responses by respondents on the level of correlation between artificial intelligence (AI) and improved customer engagement of marketing firms in Owerri. The results show that majority of the respondents affirmed to the statements. There is a high level agreement by the respondents on the opinion that artificial intelligence improves

the quality of customer engagement in marketing firms as the result accounted for a mean of 4.12 and a standard deviation of 0.933. The result has indicated that the majority of the respondents agreed to the item statement that the marketing firms compete more favourably with rivals over customer engagement competences because of effective usage of Artificial Intelligence (with a of).The foregoing results may be because AI is designed to aid in attracting and retaining customers in business settings.

Testing of Hypotheses

Ho1: There is no significant level of correlation between artificial intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri.

Table 5: Correlation analysis between artificial intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri

Item	Mean	Standard Deviation	Correlation Coefficient	p-value
Artificial intelligence (AI)	4.09	0.841	0.99	0.001
Reduction of human error in financial data analysis	3.98	0.831		

SPSS Correlation Analysis Output (2024).

The result on Table 5 presents the correlation analysis between artificial intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri. The result shows a p-value of 0.001 and correlation coefficient of 0.99. The result shows a p-value less than 0.05 being the level of significance; therefore, rejecting the null hypothesis and accepting the alternative hypothesis. Therefore, the correlation coefficient between artificial intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri is statistically significant. Therefore, there is a significant level of correlation between artificial intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri.

Ho2: There is no significant extent to which artificial intelligence (AI) correlates with enhanced decision making of marketing firms in Owerri

Table 6: Correlation analysis between Artificial Intelligence (AI) and enhanced decision making of marketing firms in Owerri

Item	Mean	Standard Deviation	Correlation Coefficient	p-value
Artificial Intelligence (AI)	4.11	0.854	1.0	0.001
Enhanced decision making of marketing firms	3.77	0.622		

SPSS Correlation Analysis Output (2024).

The result on Table 6 presents the correlation analysis between artificial intelligence (AI) and enhanced decision making of marketing firms in Owerri. The result shows a p-value of 0.001 and correlation coefficient of 1.0. The result shows a p-value less than 0.05 being the

level of significance; therefore, rejecting the null hypothesis and accepting the alternative hypothesis. Therefore, the correlation coefficient between Artificial Intelligence (AI) and enhanced decision making of marketing firms in Owerri is statistically significant. Therefore, there is a significant extent to which Artificial Intelligence (AI) correlates with enhanced decision making of marketing firms in Owerri.

Ho3: There is no significant level of correlation between artificial intelligence (AI) and automation of business processes of marketing firms in Owerri.

Table 7: Correlation analysis between artificial intelligence (AI) and automation of business processes of marketing firms in Owerri

Item	Mean	Standard Deviation	Correlation Coefficient	p-value
Artificial intelligence (AI)	4.11	0.846	0.899	0.001
Automation of business processes of marketing firms	3.8	0.638		

SPSS Correlation Analysis Output (2024).

The result on Table 7 presents the correlation analysis between Artificial Intelligence (AI) and automation of business processes of marketing firms in Owerri. The result shows a p-value of 0.001 and correlation coefficient of 0.899. The result shows a p-value less than 0.05 being the level of significance; therefore, rejecting the null hypothesis and accepting the alternative hypothesis. Therefore, the correlation coefficient between Artificial Intelligence (AI) and automation of business processes of marketing firms in Owerri is statistically significant. Therefore, there is a significant level of correlation between Artificial Intelligence (AI) and automation of business processes of marketing firms in Owerri.

Ho4: There is no significant extent to which artificial intelligence (AI) correlates with improved customer engagement of marketing firms in Owerri.

Table 8: Correlation analysis between artificial intelligence (AI) and improved customer engagement of marketing firms in Owerri

Item	Mean	Standard Deviation	Correlation Coefficient	p-value
Artificial intelligence (AI)	4.12	0.933	0.925	0.001
Improved customer engagement of marketing firms	3.79	0.637		

SPSS Correlation Analysis Output (2024).

The result on Table 8 presents the correlation analysis between artificial intelligence (AI) and improved customer engagement of marketing firms in Owerri. The result shows a p-value of 0.001 and correlation coefficient of 0.925. The result shows a p-value less than 0.05 being the level of significance; therefore, rejecting the null hypothesis and accepting the alternative hypothesis. Therefore, the correlation coefficient between Artificial Intelligence (AI) and improved customer engagement of marketing firms in Owerri is statistically significant.

Therefore, there is a significant extent to which Artificial Intelligence (AI) correlates with improved customer engagement of marketing firms in Owerri.

FINDINGS

After the data analysis, the study found that:

1. There is a significant level of correlation between artificial intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri.
2. There is a significant extent to which artificial intelligence (AI) correlates with enhanced decision making of marketing firms in Owerri.
3. There is a significant level of correlation between artificial intelligence (AI) and automation of business processes of marketing firms in Owerri.
4. There is a significant extent to which artificial intelligence (AI) correlates with improved customer engagement of marketing firms in Owerri.

DISCUSSION OF FINDINGS

The findings made in this study are discussed as follows:

The fact that artificial intelligence (AI) prudently analyzes large volumes of financial data thereby drastically reducing human errors in financial data analysis as shown on Table 1 indicates that AI is a technology to adopt for financial management prudence in modern business management. This is supported by the fact that management gives those who use AI to handle financial data analysis very serious training that targets elimination of human errors in AI-aided data management. Ugo (2023) did 'an empirical investigation of the impact of AI on Accounting practice in Nigeria'. The objectives of the study were to ascertain the impact of expert systems on accounting practice in Nigeria; and to evaluate the impact of neural networks on accounting practice in Nigeria. It is a survey research. Descriptive statistics of frequency tables and percentages were used for data analysis. Hypotheses were tested with probability values which were extracted from regression output. It was found that expert systems and neural networks positively and significantly influenced accounting practice in Nigeria. These findings agree with the findings in this present study.

Given that artificial intelligence (AI) facilitates quality decision making in marketing firms as shown on Table 2, it implies that AI is an aid to corporate efficiency and effectiveness. This is supported by the fact that artificial intelligence(AI) enables effective marketing research thereby adding value to decision processes of marketing enterprises as the Table 2 shows. Quality decision making is at the centre of overall corporate health, competitiveness and performance. Abdulhamid and Abubakar (2024) did an overview of the role of AI on the performance of small and medium scale enterprises in Nigeria. The major objective of the study was to examine how AI could be employed in advancing business operations in Nigerian SMEs. Extant literature method was used in the study. It was found that AI is necessary for keeping a safe distance from others while doing business from a secure location and improving customer loyalty and bringing in business for organizations and at the same time giving a competitive edge to the SMEs. Their findings agree with the findings in this present study.

It is interesting that artificial intelligence (AI) helps to beef up the quality of automation of business processes in marketing firms as Table 3 proves. The implication is that the growth rate and competitive competences of business that adopt AI are bound to improve even at a geometrical rate. The same table reveals that management ensures that those that handle automation of business processes are quite skilled in application of artificial intelligence (AI). The study by Ugo (2023) on ‘an empirical investigation of the impact of AI on Accounting practice in Nigeria’ as shown above is in alignment with the findings in this study.

The fact that artificial intelligence (AI) improves the quality of customer engagement in marketing firms as shown on Table 4 indicates that with proper usage of AI, both customer attraction, acquisition and retention will remain seamless in enterprises. This is supported by the fact that the marketing firms compete more favourably with rivals over customer engagement competences because of effective usage of Artificial Intelligence as the Table 4 shows. The study by Abdulhamid and Abubakar (2024) on an overview of the role of AI on the performance of small and medium scale enterprises in Nigeria as indicated above is in agreement with the findings in this study.

Conclusion and Recommendations

Conclusion

This study concludes that artificial intelligence significantly correlates with business practices of marketing firms in Owerri. It reduces human errors in financial data analysis of marketing firms while enhancing the decision making of marketing firms in Owerri. The study further concludes that artificial intelligence seriously adds value to the automation of business processes of marketing firms and it impacts positively on improved customer engagement of marketing firms in the city.

The study therefore infers that any business organization especially marketing firms that relegates artificial intelligence (AI) to the background risks poor quality business practices and outcomes. The researchers submit that artificial intelligence (AI) is in the 21st Century, the hinge on which modern business information technology rotates for the seamless growth and development of enterprises and all facets of business empires. The forgoing implies that AI remains relevant to the marketing firms as they carry out their business practices.

Recommendations

Based on the findings, the researcher made the following recommendations:

1. Management should always ensure that those who are directly involved in using Artificial Intelligence (AI) in solving business problems are periodically trained and re-trained so as to always ensure that the reduction of human error in financial data analysis in the enterprises continues to improve.
2. Marketing firms need to always make good use of Artificial Intelligence (AI) in taking those decisions that have the capacity to add values to the quality of decision making in the organizations and in fact, to overall corporate wellbeing.
3. Management should not hesitate to make policies that will aid the more potent use of Artificial Intelligence (AI) in supporting the automation of business processes in the enterprises.

4. Management should design programmes to expose customers to the realities of Artificial Intelligence (AI) with a view to improving customer engagement in business enterprises.

Contribution to Knowledge

The study submits that this study contributes to knowledge by providing empirical literature and by bridging research gaps on the relationships between: artificial intelligence (AI) and reduction of human error in financial data analysis of marketing firms in Owerri; artificial intelligence (AI) and enhanced decision making of marketing firms in Owerri; artificial intelligence (AI) and automation of business processes of marketing firms in Owerri; artificial intelligence (AI) and improved customer engagement of marketing firms in Owerri. The study adds to the body of existing knowledge in the area of artificial intelligence (AI) and business practices. Indeed, it provides the foremost empirical cum visible study on artificial intelligence (AI) as it relates to business practices of marketing firms in Owerri, Nigeria.

Implications for Further Research

As this present study focuses only in Owerri Municipality, further research ought to be done with a wider geographical scope to investigate areas outside Owerri Municipality. The present study also concentrates on reduction of human error in financial data analysis, enhanced decision making, automation of business processes and improved customer engagement dimensions of business practices. Future researchers need to work on other indices of business practices. This study anchors only on marketing firms. This indicates that future researchers should investigate AI in other firms aside marketing enterprises. Here, the survey research design was employed to evaluate the nexus between AI and each of reduction of human error in financial data analysis, enhanced decision making, automation of business processes and improved customer engagement in marketing firms in Owerri. Future researchers need to vary the methodology over the same relationships to determine if there may be consistency or reliability in the results obtained. They may employ epistemological research method, ex post facto approach or even desk research among others.

In fact, this study assessed only the Chief Executives and Unit Heads in the study marketing firms. Future researchers need to expand their survey scope to accommodate other staff in business organizations over the proxies and linkages evaluated in this research. Given that this study examines the correlation between AI and business practices in marketing firms in Owerri, future researchers should ascertain the correlation between AI and corporate performance in the marketing firms in Owerri and even in other types of business organizations in Owerri and outside Owerri.

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