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Abstract

The wave of Artificial intelligence technology in the modern business environment where commercial banks stand out as key players is not just a trend, but a paradigm shift, paving way for a more innovative and productive future for the banking industry. AI technology stands out as a transformative force that is not just about efficiency but also about reshaping how administration tasks are executed. This paper would x-ray the impact of Artificial intelligence technology on commercial banks. The paper was guided by three research questions, which are to find out the impact of Chat bots on customer care, the impact of AI analytics on decision making and the impact of keyphrase and sentiment analysis on market share. Three hypotheses guided the study which were tested at 0.05 level of significance, using Pearson's moment correlation coefficient and all result showed a positive relationship between AI technology and the productivity of business offices as P values were < 0.05 level of significance. It was recommended that business organization harness the provisions of AI technologies - Chatbots, AI analytics, keyphrase and sentiment analysis as they have significant impact on customer care, market share and decision making,

Key words: Artificial Intelligence, Chat bots, AI technology, Keyphrase and Sentiment analysis, Customer care, Market share, Decision making.

Introduction

The goal of every business organization is to achieve high level of productivity and maximize profit. To achieve this, organizations work tirelessly to ensure effective customer care and time management and the maintenance of an appreciable market share. One sector in Nigerian business space that is known for working under stress and pressure is the banking sector. Ebiringa (2011) opined that the banking sector is the most stressed-out sector in the world. Who is been stressed out? Off course the employees, Epic (2011), noted that “the Nigerian banking sector is known for long hour culture and high work load of employees”. Managers of commercial banks must be able to think “out of the box” and harness readily available resources to ensure their banks continue to thrive despite the difficult times and economically challenging times we find ourselves as a nation. It is in times like this, when most organizations in the nation are shutting down operations or relocating to more conducive environments because of the harsh economy which has made resources scarcely available, that management of commercial banks should leverage on one of the viable resources available “Artificial Intelligence Technology”, to enable them bit the economic challenges in which we find ourselves as a nation. Any business that would thrive today must harness the provisions of artificial intelligence technology in setting up strategies such as advertising, client and customer sourcing, marketing, service delivery, research and development etc.

A sound and profitable banking sector is key to the stability of a country’s financial system. The importance of this sector cannot be over-emphasized as it has drawn the attention of many researchers, bank management, shareholders and bank regulatory authorities. (Athanasoglo, Brissimis and Delis, 2005). The banking industry in Nigeria has gone through series of reforms which have led to restructuring, mergers, acquisitions, downsizing and liquidations. (Akinyemi 2014). This strive to meet up new challenges and remain relevant in this highly competitive sector has put so much pressure on the employees and management alike. (Ajede 2011). This is why leveraging on available modern technologies for peak performance is very crucial.

One of the most trending technological resources available for office and business managers today is the “**AI Technology**”. AI technology refers to the development and use of computer systems that can perform tasks that normally would require human intelligence. It is the simulation of human intelligence processes by machines, especially computers (Nicole laskowski & linda 2024)

AI is making waves in virtually every aspect of our lives. For those seeking better health care outcomes, today we have wearable devices equipped with AI algorithms that monitor your vital signs, your blood pressure, stress level, sugar

level, tracks your activity level and predicts potential issues. Telemedicine platforms leverage AI to offer remote consultations which provides remote medical expertise and services without the constraint of location. AI technology has tailored our online experience to our preferences and interests from movies, shows, marketed products and services. AI technologies employed makes it possible for these AI driven platforms to make suggestions that align to your likes and preferences.

AI is making waves in enhancing communication. Chatbots on websites and social media platforms offer 24 hours instant customer support, answering queries and resolving issues promptly (Britt'na 2023). AI powered language translators enable you bridge communication gaps between people no matter the language that is spoken. Today, AI technology has permeated every aspect of our personal lives from managing our calendar and scheduling appointments to setting reminders and organising a to-do-list and more.

The way and manner in which business and office administrators carry out their responsibilities is not left out in this wave of AI technology. It has been used in business to automate tasks done by humans, including customer service work, lead generation, fraud detection, quality control, speed of work, ensuring relevant fields are filled correctly when online forms are filled, data processing, converting speech-to-text and text-to-speech, and lots more. (Nicole laskowski & linda 2024; Nna-Emmanuel 2024).

AI technology can be employed as we carry out our work as administrative professionals. The integration of AI technology in our daily activities is not just a trend; but a paradigm shift that is redefining how we interact with technology and our world. We must therefore make deliberate and conscious efforts henceforth to embrace AI's transformational power with all sense of responsibility and ensure we harness its benefits to make our duties and work experience as professionals more convenient, efficient, fast and seamless if we would remain relevant in this generation.

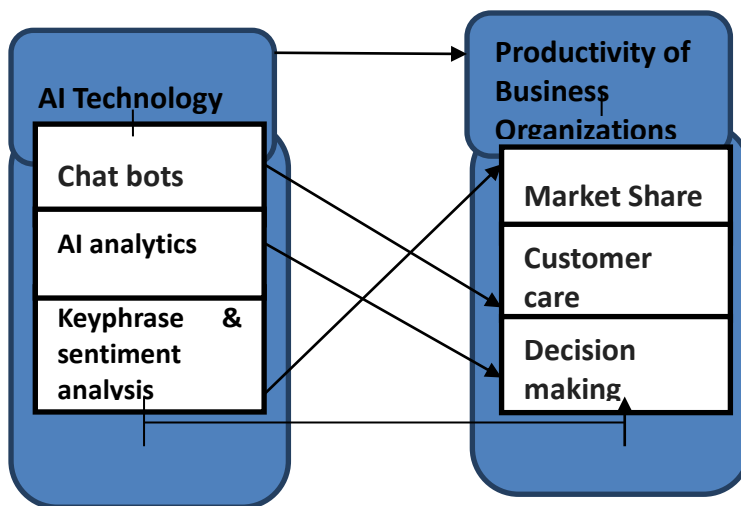
Statement of the problem

The obvious economic crisis in Nigeria is crippling many business organizations. Making it difficult for them to maintain their customer base, harnessing the use of Chatbots in attending to their customers may help commercial banks overcome this challenge.

Management decisions made and implemented are the major determinants of the growth and success of organizations. Regrettable mistakes are made sometimes when there is no proper guidance from the information available. Lead generation, which is one major function of AI technology, offers a solution in this regard. Some organizations may be losing market share because of their inability to attend to the needs of customers, especially at odd hours. Call assistant AI may just be ready solution to this challenge.

Business organizations in Nigeria need to strive, as their collapse has a major negative impact on the families that depend on the income gotten from such jobs. Commercial banks must ensure they don't lose their customers; they should take uninformed decisions and fight to ensure they maintain market share. Achieving these feats may be possible and seamless, if the AI technology is effectively harnessed. This is why the researchers feel strongly the need to carry out this study on the impact of AI technology on the Productivity today's business organizations.

Operational Conceptual Framework



Researchers Desk, 2025

Impact of AI driven Conversational Bots on Customer care

Conversational Bot is an AI-driven live chat Bot with customers and clients. AI-powered Chat bots are revolutionizing customer service, by offering instant and accurate responses to routine inquiries available 24/7. Advanced technologies like natural language processing and digital assistants that ensure customers receive immediate attention without the delays typical of traditional service channels.

Impact of AI analytics on Decision making

AI Analytics provides insights on sentiments when during conversations with customers. It provides insights on Key phrases, and data capture, enabling informed decisions. Understand underlying issues to forecast support needs, optimize resources, and enhance efficiency. AI Analytics offers data-driven insights for refining strategies and improving decision-making and business processes.

Impact of Keyphrase and Sentiment analysis on Market share

Antenna's keyphrase analysis automatically searches through calls transcripts and conversations to note phrases that are used the most. It picks what customers

and clients are mentioning or requesting the most. This helps the company to instantly identify reoccurring trends that need immediate attention.

The AI sentiment analysis reads your customer's emotions and provides the best levels of customer experience. It helps to dig deep to indicate expressions that show politeness, satisfaction, empathy and anger with what is referred to as sentiment scores, while ensuring the quality of the opening/closing conversations.

These functions serves as quick pointers to business or office managers identify areas in their dealings with customers that needs immediate attention. Paying attention to these areas will keep the customers glued to you causing the organization to maintain market share.

Objectives of the study

The main purpose of this study is to x-ray the impact of AI technology in the modern Business office. Specifically, the purpose of this paper is to x-ray:

- the impact of Chatbots on customer care
- the impact of AI analytics on decision making
- the impact of keyphrase and sentiment analysis on market share

Significance of the Study

The study will be of great benefit to business and office administrators in different organizations, who would realize by this study that harnessing AI technology in the performance of their administrative functions, would bring about increased productivity.

Research Hypothesis

The following research questions guided the study

- Chatbots have no significant impact on customer care
- AI analytics has no significant impact on decision making
- Keyphrase and Sentiment analysis has no significant impact on market share

Theoretical Framework

The Roger's diffusion of innovation theory is used as a framework for this study. This is because it is the most appropriate for investigating the adoption the technology in several disciplines and in any social system and has been used as a framework for most disciplines (Dooley 1999, Stuart 2000, medlin 2001, parisot, 1995). Rogers defined diffusion "as the process in which an innovation is communicated through certain channels over time among members of a certain social system." As expressed in Roger's definition, innovation, communication channels, time and social systems are the four key components of the diffusion of innovation theory (Sahin, 2016).

An innovation - is a practice or project that is perceived as new by an individual or other unit of adoption. (Roger, 2003). According to Rogers, an innovation may create uncertainty. “Consequences are the changes that occur in an individual or a social system as a result of the adoption or rejection of an innovation” (Rogers, 2003). People should therefore be informed about the advantages and disadvantages to make them aware of all the consequences.

Communication channels- This is the second element of the diffusion of innovation process. Rogers 2003, sees communication as a process in which participants create and share information with one another in order to reach a mutual understanding. This communication occurs through interpersonal channels who are perceived to be more effective at the persuasive stage of the innovation – decision process.

Time- The time dimension according to Rogers (2003), is one of the strengths of the innovation – diffusion process, this is because each stage of the process is time bound.

Social Systems - The social system is the last element in the diffusion process. Rogers (2003), defined it as a set of interrelated units engaged in joint problem solving to accomplish a common goal. This process is concerned with motivating individuals to reduce uncertainties about the advantages and disadvantages of innovation. The social system is influenced by the social structure of the social system. Rogers noted that the diffusion of innovation process involves five steps which include – knowledge, persuasion, decision, implementation and confirmation. These stages according to him follow each other in a time ordered manner.

This theory is related to the study as it is concerned with motivating people to accept an innovation - AI technology. Managers of businesses who form members of the social system in this case, should accept this innovation and take a decision to ensure the provisions of AI technology

Review of related literature

Types of AI technologies available for Business and office administrators

1. ATHENA AI



Athena AI is a ground breaking Artificial Intelligence that can help the Secretary and office administrators take data-led-decisions with impactful outcomes. This AI, named after the goddess of wisdom, offers invaluable insights from your business data. Craig (2024) noted that Anthena AI, has the following to offer: Conversational Bot, Keyphrase Analysis, Sentiment Analysis, Speech-to-text transcription, Entity Recognition

2. ChatGPT Artificial Intelligence



ChatGPT was created by OpenAI, an AI research company. It started as a non-profit company in 2015 but became for-profit in 2019. Its CEO is Sam Altman,

who also co-founded the company. ChatGPT is an AI chatbot that has the following to offer: The generative AI tool can answer questions and assist you with composing emails, essays, code, and much more. It's currently open to use for free. 17 Jun 2024. ChatGPT can be used to: write an essay, create an app, write codes, build your resume, write Excel formulas, summarize content. write a cover letter, start an easy business.

3. CALL ASSISTANT AI



Call assistant AI is an app that has been unveiled to take care of the daunting task of answering all sorts of calls (spam calls, unknown and unwanted calls, telemarketers etc) amidst important meetings and discussions.

4. GOOGLE GEMINI



Gemini is a suite of generative AI models created by Google to power a range of different digital products and services. Gemini's models are examples of "multimodal AI models," meaning that they can respond to a range of content types, such as text, video, audio, and programming code. As a result, Gemini models can perform many different tasks like interpreting the notes on a music sheet, combining images to create new ones, or quickly generating a piece of writing.

Google Gemini is capable of interpreting and responding to various types of content, including text, video, audio, and code. This means that Gemini models can perform a wide range of tasks, such as writing code for an application, generating images, or composing text among many other things. (McKinsey & Company 2023),

5. Meta AI



Meta AI is an AI-driven chatbot powered by Meta's newest and most powerful large language model (LLM). Meta introduced an AI technology, LLaMA, that can power online chatbots. Meta AI blends into your daily digital interactions by integrating into Meta's chat technology.

How does Meta AI work?

At the heart of Meta AI lies the concept of meta-learning, which enables AI systems to learn how to learn. Meta AI can rapidly generalize its learning to new and unseen scenarios by acquiring meta-knowledge about different tasks and their underlying structures, making it incredibly versatile and robust.

Unlike traditional AI systems that rely on pre-programmed responses, Meta AI leverages machine learning algorithms to continuously learn and adapt to user behavior, enabling more personalized and contextually relevant interactions. Meta AI ensures accessibility for users worldwide across various platforms including Whatsapp and facebook this makes it very unique and readily available for use. It enhances research and learning. Meta AI engages in natural

conversations, answering questions, providing recommendations, generating text and Image generation. It became the most handy AI technology available to the generality of people today,

Empirical Review

Belayneh Yitayew Kassa and Eyob Ketema (2025), carried out a study on the impact of artificial intelligence on organizational performance: the moderating role on employee productivity. Quantitative data was collected through an online survey using cobo toolbox from 172 purposively selected employees. AI was modeled as third order formative construct while employee productivity and organizational performance were first order reflective constructs. The variables were measured using validated multi-item questionnaire with a seven - point likert scale. The result showed that there were positive and significant relationships between AI and EP, AI and OP, EP and OP. These findings are consistent with previous studies and theories such as the resource-based view and human capital theories. The result suggests that organizations can dramatically improve performance in the digital age by implementing AI and creating a work environment that encourages productivity. This study is related to the current study as it has AI as the independent variable. The dependent variables differ from the current study which has organizational productivity as its dependent variable.

Elizabeth Omone Ojo (2024) carried out a study on artificial intelligence and job performance of office managers in public organizations. The study was guided by two research questions and two hypotheses. The population of the study comprises of office managers from Ministries of education, commerce, finance, agriculture and community development in Oke-Mosan, Ogun state. The study found out that machine Learning skills, critical thinking skills, communication skills, problem solving skills, analytical judgement skills, programming skills are examples of artificial learning skills required by office managers in public organizations. There were positive significant relationships between the dependent and independent variables. This study is related to the current study as it used AI as its independent variable. However, the dimensions of artificial intelligence used are different from that of the current study, the dependent variables and location are also different.

Methodology

The study utilized a cross-sectional survey design. The population of the study consist of 109 management staff of 12 small and medium size business organizations in Port Harcourt, Rivers State. 70 management staff were selected out of the entire population as the sample for the study. The instrument for data collection was a 12-item questionnaire measuring chatbots on a three (3) item instrument, lead generation on a three (3) item instrument, Call Assistant AI on a

three (3) item instrument, customer care on one (1) item instrument, lead generation on one (1) item instrument, and market share on one (1) item instrument. The reliability of the instrument was ascertained using Cronbach Alpha an SPSS version 21 which yielded an overall coefficient of 0.72. Pearson Product Moment Correlation was used to analyze the relationship between the variables of the study at a 0.05 level of significance.

Decision Rule: The basis for acceptance or rejection of null hypotheses statements is premise on the corresponding probability value (P-value) for each of the test.

Where $P \leq 0.05$, null hypothesis is rejected as it suggests a significant relationship between the variables, where as a $P > 0.05$ suggests insignificant relationship between the variables and as such the null hypothesis is not rejected.

Data Presentation and Analysis

Results for the bivariate analysis of the impact of the dimensions of AI technology and the productivity of business organizations in Nigeria are presented below.

• Table 1- Impact of Chat bots on Customer care

			Chat bots	Customer case
Pearson's Correlation	Chat bots	Corr. Coefficient	1.00	.782
		Sig. (2-tailed)		.034
		N	70	70
	Customer case	Corr. Coefficient	.782	1.00
		Sig. (2-tailed)	.034	
		N	70	70

Source: Survey Data, 2025

H₀₁ Chatbots have no significant impact on customer care

The result on the table 1 with $r = 0.782$ and $P = 0.034$, shows that $P \leq 0.05$, which reveals that Chatbots have significant impact on customer care. The null hypothesis is therefore rejected on the basis of the evidences presented. An alternative hypothesis stated thus:

H₁ Chatbots have significant impact on customer care

- **Table 2** – AI analytics has no significant impact on decision making

			AI analytics	decision making
Pearson's Correlation	AI analytics	Corr. Coefficient	1.00	.786
		Sig. (2-tailed)		.032
		N	70	70
	Decision making	Corr. Coefficient	.786	1.00
		Sig. (2-tailed)	.032	
		N	70	70

Source: Survey Data, 2025

H₀₂ AI analytics has no significant impact on decision making

The result on the table 1 with $r = 0.786$ and $P = 0.032$, shows that $P \leq 0.05$, which reveals that AI analytics has significant impact on decision making. The null hypothesis is therefore rejected on the basis of the evidences presented. An alternative hypothesis stated thus:

H₂ AI analytics has significant impact on decision making

• **Table 3 – Impact of Keyphrase and Sentiment analysis on market share**

			Key phrase Analysis	Market share
Pearson's Correlation	Key phrase Analysis	Corr. Coefficient	1.00	.776
		Sig. (2-tailed)		.032
		N	70	70
	Market share	Corr. Coefficient	.776	1.00
		Sig. (2-tailed)	.032	
		N	70	70

Source: Survey Data, 2025

H₀₃ Keyphrase and Sentiment analysis has no significant impact on market share

The result on the table 1 with $r = 0.776$ and $P = 0.032$, shows that $P \leq 0.05$, which reveals that Keyphrase and Sentiment analysis has no significant impact on market share. The null hypothesis is therefore rejected on the basis of the evidences presented. An alternative hypothesis stated thus:

H₃ Keyphrase and Sentiment analysis has significant impact on market share

Discussion of findings

The study found out firstly that chatbots have significant impact on customer care in business offices today. The fact that chatbots have changed the manner in which customers are attended to seamlessly at any time of the day is a welcomed development, this is in agreement with the postulations of Ivy (2020), who noted that AI-powered Chat bots are revolutionizing customer service, by offering instant and accurate responses to routine inquiries available 24/7.

The study found out secondly that AI analytics has significant impact on decision making, Craig (2024) noted that AI Analytics offers data-driven insights for refining strategies and improving decision-making and business processes.

The study found out thirdly that keyphrase and Sentiment analysis has significant impact on market share. This is very true as it takes note of frequently used

phrases while discussing with customers and makes them available to management, who in turn would take informed decisions. It has been noted that AI sentiment analysis reads your customer's emotions and helps to dig deep to indicate expressions that show politeness, satisfaction, empathy and anger with what is referred to as sentiment scores (Craig 2024).

Conclusion

AI's ability to learn, adapt and execute tasks with precision and speed is altering the administrative landscape. AI-driven tools have enhanced administrative task in welcoming visitors, dispatching reminders, AI powered chatbots revolutionizing customer service by offering instant and accurate response to routine inquiries, available 24/7, Ensuring immediate & personal attention is given to customers and more. AI technology is the present and the future. The office and indeed the world is on the move. To stay relevant, we must embrace and explore this technology now.

Recommendations

Based on the findings of the study, the following recommendations are put forward:

- Business organizations in Nigeria rather than lament over the down turn of the economy and the low patronage they suffer, should leverage on the provisions of AI technology, to and maintain their brand name and quality.
- Business organizations should use AI analytics to enable them take informed decisions.
- They should leverage on the keyphrase and sentiment analysis gain insight as to what to do to please their customers and maintain their market share.

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