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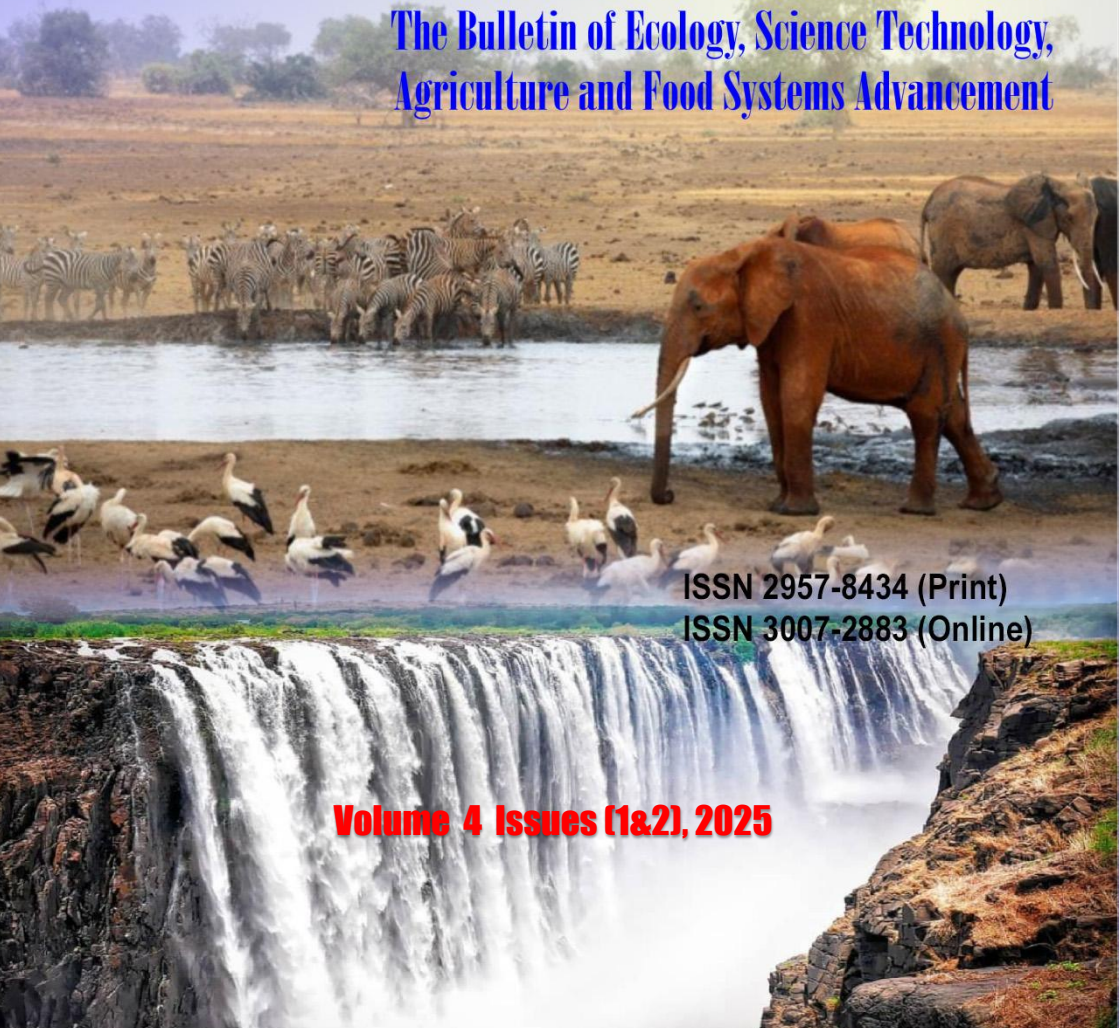
The Zimbabwe Ezekiel Guti University
The Bulletin of Ecology, Science Technology, Agriculture and Food Systems Advancement



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The purpose of *the Oikos - The Zimbabwe Ezekiel Guti University Bulletin of Ecology, Science Technology, Agriculture and Food Systems Review and Advancement* is to provide a forum for scientific and technological solutions based on a systems approach and thinking as the bedrock of intervention.

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EXPLORING THE ROLE OF AI IN ENHANCING CUSTOMER EXPERIENCE IN ZIMBABWEAN E-COMMERCE PLATFORMS

TAPIWA TAKUNDWA,[1] THANKS HONDOMA,[2] RUKUDZO A. MAWERE[3] AND AUDREY N. BOWORA[4]

Abstract

This study explores the role of Artificial Intelligence (AI) in enhancing customer experience in Zimbabwean e-commerce platforms, with a focus on the banking industry. The research objectives are to examine the current state of AI adoption, assess the effectiveness of AI-driven customer experience solutions and identify challenges and opportunities for improvement. Grounded in the Service-Dominant Logic (SDL) Theory and the Technology Acceptance Model (TAM), this quantitative study employs a descriptive research design. A stratified random sampling technique was used to select a sample of 250 customers of Zimbabwean banks' e-commerce platforms. A survey questionnaire was used to collect quantitative data, which was analysed using statistical methods. The findings suggest that AI adoption has a

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positive impact on organisational performance and customer satisfaction and that AI-driven customer experience solutions are effective in improving customer satisfaction and loyalty. However, the adoption of AI-driven customer experience solutions is hindered by significant challenges, including data quality and regulatory issues. The study recommends that banks in Zimbabwe prioritise data quality, invest in AI-powered services and provide training and support to employees to ensure the successful adoption of AI-driven customer experience solutions. This study contributes to the understanding of AI adoption in the Zimbabwean banking industry and provides insights for banks to enhance customer experience and improve operational efficiency.

Keywords: Service Quality, Digital Innovation, Customer Loyalty, Technology Integration, Financial Services.

Introduction

This study explores the role of Artificial Intelligence (AI) in enhancing customer experience in Zimbabwean e-commerce platforms, with a specific focus on the banking industry. The purpose of the study is to investigate the impact of AI-powered technologies on customer satisfaction and loyalty in Zimbabwean banks' e-commerce platforms.

Background of the study

The banking industry in Zimbabwe has experienced significant changes in recent years, driven by technological advancements, changing customer expectations and economic challenges. The adoption of e-commerce platforms has become increasingly important for banks to remain competitive and provide convenient services to customers.

A number of E-commerce platforms have been adopted by banks and financial institutions in Zimbabwe including Digital Payment Platforms: which includes Paynow, EcoCash and OneMoney, among others. Also have E-commerce Marketplaces which includes Zimarket, Malaicha.com, Mukuru Groceries. Also, there is Digital Banking which includes Steward Bank which offers mobile banking services, including the Kwenga mobile point-of-sale system, bringing banking to the

fingertips of the unbanked and underbanked population. In addition, Innbucks and Old Mutual's O'mari, a digital banking platform, offer financial services and products. These platforms have transformed the way people in Zimbabwe shop, pay bills and access financial services, driving financial inclusion and economic growth.

Table 1 shows the growth of internet users and mobile penetration rates in Zimbabwe, indicating an increasing trend towards digital adoption. This growth presents opportunities for banks to leverage e-commerce platforms and AI-powered services to enhance customer experience.

Table 1: E-commerce Adoption in Zimbabwean Banking Industry

Year	No of Internet Users	Mobile Penetration Rate
2018	2.4 million	74.1%
2019	3.1 million	81.4%
2020	4.2 million	90.1%

Source: Zimbabwe National Statistics Agency (2020)

A survey conducted by the Reserve Bank of Zimbabwe (2020) found that: 80% of respondents preferred to use mobile banking services, 70% used online banking service and 60% cited convenience and speed as key factors in choosing a bank. These findings highlight the importance of providing convenient and efficient services to customers, which can be achieved through the adoption of AI-powered e-commerce platforms.

Customer experience refers to the overall perception and impression a customer forms about a brand or organisation based on their interactions and encounters with it (Lemon and Verhoef, 2016). According to Bolton *et al*. (2018), customer experience encompasses cognitive, emotional and social aspects, influencing customer loyalty, retention and advocacy. In today's competitive market, delivering exceptional customer experiences is crucial for businesses to differentiate themselves and build long-term relationships with customers (Kotler and Keller, 2020).

Enhancing customer experience involves strategies and initiatives aimed at improving the quality and value of customer interactions with a brand (Verhoef *et al*., 2021). This can be achieved through various means, such as personalisation, omnichannel engagement and proactive customer service (Grewal and Roggeveen, 2020). By leveraging technologies like AI, data analytics and social media, businesses can gain insights into customer preferences and behaviours, enabling them to tailor experiences that meet individual needs and exceed expectations (Kumar *et al*., 2022).

E-commerce platforms are digital infrastructures that enable businesses to sell products or services online, facilitating transactions and interactions between buyers and sellers (Laudon and Traver, 2020). These platforms provide a range of features and tools, including payment gateways, inventory management and customer relationship management, to support online business operations (Turban *et al*., 2021). With the rise of mobile commerce and digital payments, e-commerce platforms have become increasingly important for businesses seeking to expand their online presence and reach a wider customer base (Kim *et al*., 2022).

Kumar *et al*. (2022) investigate the impact of AI-powered customer experience on customer satisfaction and loyalty in the Indian e-commerce industry. The study found that AI-powered technologies, such as chatbots and personalised recommendations, significantly improved customer satisfaction and loyalty. The study concluded that Indian e-commerce companies can leverage AI-powered technologies to enhance customer experience and gain a competitive edge in the market. Lee and Lee (2022) explore the effect of AI-powered chatbots on customer satisfaction in the Korean e-commerce industry. The study found that AI-powered chatbots significantly improved customer satisfaction by providing 24/7 support and personalised recommendations. The study concluded that Korean e-commerce companies can leverage AI-powered chatbots to enhance customer experience and improve customer satisfaction.

Smith and Johnson (2020) study the impact of AI on customer experience in the UK retail industry. The study found that AI-powered technologies, such as chatbots and virtual assistants, improved customer experience and reduced operational costs. The study concluded that UK retailers can leverage AI-powered technologies to enhance customer experience and improve operational efficiency.

Chen *et al*. (2022) research on the impact of AI-powered customer service on customer satisfaction in the US banking industry. The study found that AI-powered customer service significantly improved customer satisfaction by providing personalised support and reducing wait times. The study concluded that US banks can leverage AI-powered customer service to enhance customer experience and improve customer satisfaction.

Da Silva *et al*. (2022) examine the effect of AI-powered chatbots on customer satisfaction in the Brazilian e-commerce industry. The study found that AI-powered chatbots significantly improved customer satisfaction by providing 24/7 support and personalised recommendations. The study concluded that Brazilian e-commerce companies can leverage AI-powered chatbots to enhance customer experience and improve customer satisfaction.

Mhlanga (2022) investigates the adoption of AI in customer experience in the South African retail industry. The study found that South African retailers were adopting AI-powered technologies, such as chatbots and personalised recommendations, to enhance customer experience and improve operational efficiency. The study concluded that South African retailers can leverage AI-powered technologies to gain a competitive edge in the market.

Ncube and Ncube (2021) explore the impact of AI-powered customer experience on customer satisfaction in the Zimbabwean banking industry. The study found that AI-powered technologies, such as chatbots and virtual assistants, improved customer experience and reduced operational costs. The study concluded that Zimbabwean

banks can leverage AI-powered technologies to enhance customer experience and improve operational efficiency.

Hokonya (2024) investigates the impact of AI on customer experience in Zimbabwe's telecoms industry and identifies key learnings from its adoption. The study found that AI-powered technologies improved customer experience by providing personalised support and reducing wait times. However, the industry faces challenges in moving customers to new channels. The study concluded that Zimbabwean telecoms companies can leverage AI-powered technologies to enhance customer experience and gain a competitive edge in the market.

Statement of the Problem

The Zimbabwean banking industry is facing significant challenges in meeting the evolving needs of its customers, who increasingly demand convenient, efficient and personalised services. Despite the growth of internet users and mobile penetration rates, with 4.2 million internet users and a 90.1% mobile penetration rate as of 2020 (Zimbabwe National Statistics Agency, 2020), banks in Zimbabwe struggle to leverage e-commerce platforms and AI-powered services to enhance customer experience. A survey by the Reserve Bank of Zimbabwe (2020) found that 80% of respondents preferred mobile banking services and 60% cited convenience and speed as key factors in choosing a bank.

However, the industry's limited access to technology infrastructure, high costs of technology adoption and cybersecurity threats hinder the adoption of AI-powered services. As noted by Vargo and Lusch (2004), the service-dominant logic emphasises the importance of providing value to customers through service exchange, which AI-powered e-commerce platforms can facilitate.

Therefore, this study seeks to explore the role of AI in enhancing customer experience in Zimbabwean e-commerce platforms, with a focus on the banking industry, to identify opportunities for improvement and propose solutions to address the challenges faced by the industry.

Objectives

- To examine the current state of AI adoption in the Zimbabwean banks.
- To assess the effectiveness of AI-driven customer experience solutions in Zimbabwean banks.
- Identify challenges and opportunities for improvement in Zimbabwean banks.

Hypothesis

- H1: There is a significant positive relationship between AI adoption and organisational performance in Zimbabwean banks.
- H2: AI-driven customer experience solutions have a significant positive impact on customer satisfaction in Zimbabwean banks.
- H3: The adoption of AI in Zimbabwean banks is hindered by significant challenges, including infrastructure, data quality and skills gaps.

Theoretical framework

The study is grounded in the Service-Dominant Logic (SDL) Theory and the Technology Acceptance Model (TAM).

Service-Dominant Logic (SDL) Theory

The SDL Theory, proposed by Vargo and Lusch (*ibid.*), emphasises the importance of service exchange and value co-creation in business interactions. According to SDL, customers are active participants in the value creation process and businesses should focus on providing services that meet their needs and expectations (Vargo and Lusch, 2008). In the context of AI-powered customer experience in Zimbabwean e-commerce platforms, SDL suggests that AI can facilitate value co-creation by enabling personalised and efficient service delivery, thereby enhancing customer satisfaction and loyalty. By adopting an SDL perspective, businesses in the Zimbabwean banking industry can leverage AI to co-create value with customers, improve service quality and build strong relationships with them (Akaka and Vargo, 2015).

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), explains how users form attitudes and intentions to use technology. According to TAM, perceived usefulness and perceived ease of use are key determinants of technology adoption and usage (*ibid.*). In the context of AI-powered customer experience in Zimbabwean e-commerce platforms, TAM suggests that customers' acceptance and adoption of AI-powered services will depend on their perceived usefulness and ease of use. If AI-powered services are perceived as useful and easy to use, customers are more likely to adopt and continue using them, leading to enhanced customer experience and loyalty. By understanding the factors that influence technology acceptance, businesses in the Zimbabwean banking industry can design and implement AI-powered services that meet customers' needs and expectations, thereby improving customer experience and loyalty (Venkatesh and Davis, 2000).

Relevance to the Topic

Both SDL and TAM theories are relevant to the topic of exploring the role of AI in enhancing customer experience in Zimbabwean e-commerce platforms in the banking industry. SDL highlights the importance of value co-creation and service exchange in business interactions, while TAM explains the factors that influence technology adoption and usage. By applying these theories, businesses in the Zimbabwean banking industry can gain insights into how AI can be used to enhance customer experience, improve service quality and build strong relationships with customers

Conceptual Framework

The conceptual framework for this study is based on the SDL Theory and TAM. The framework proposes that AI-powered e-commerce platforms can enhance customer experience by providing personalised and efficient service delivery which, in turn, can lead to increased customer satisfaction and loyalty.

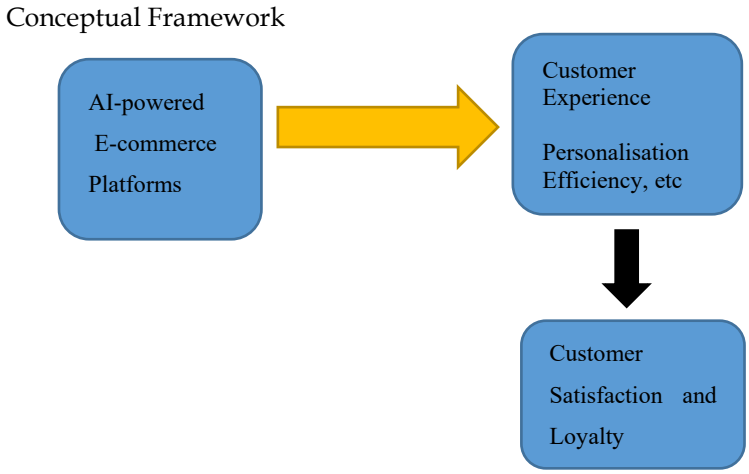

Figure 1: Conceptual Framework
Source: Adapted from Vargo and Lusch (2004, 2008)

To Examine the Current State of AI Adoption

Studies show a significant increase in the adoption of AI technologies across various industries. According to McKinsey (2020), 61% of organisations have adopted AI in at least one function, with the banking industry being one of the early adopters. The industry has been at the forefront of AI adoption, with applications ranging from customer service to risk management. A study by PwC (2020) found that 73% of financial services executives believe that AI will be critical to their organisation's success in the next few years. AI adoption in banking includes various types of technologies, such as machine learning, natural language processing and robotic process automation. According to Gartner (2020), machine learning is the most widely adopted AI technology in the banking industry.

The adoption of AI in banking has several benefits, including improved efficiency, enhanced customer experience and increased revenue.

Accenture (2020) avers that AI can help banks increase their revenue by up to 30%. Despite the benefits, AI adoption in banking also poses several challenges, including data quality, regulatory compliance and cybersecurity risks. According to Deloitte (2020), data quality is a major challenge in AI adoption, with 60% of organisations citing it as a significant issue. In Zimbabwe, AI adoption in banking is still in its early stages. Reserve Bank of Zimbabwe (2020) establishes that while some banks have started exploring AI technologies, there is still a need for more awareness and investment in AI.

The future of AI in banking looks promising, with emerging technologies like explainable AI and edge AI expected to play a significant role. Forrester (2020) states that explainable AI will become a critical component of AI adoption in the banking industry. Banks are investing heavily in AI technologies, with a significant portion of their IT budgets allocated to AI projects. One of the key challenges in AI adoption is acquiring the right talent. According to LinkedIn (2020), AI and machine learning skills are among the most in-demand skills in the banking industry. A regulatory framework is essential for the adoption of AI in banking. The Bank for International Settlements (2020) emphasises the need for a regulatory framework that balances innovation with risk management.

To Assess the Effectiveness of AI-Driven Customer Experience Solutions

AI-driven customer experience solutions enable personalisation, which is critical for building customer loyalty. According to a study by Accenture (2020), 91% of consumers are more likely to shop with brands that provide personalised experiences. Chatbots are a popular AI-driven customer experience solution that can provide 24/7 support to customers. Gartner (2020) found that chatbots can reduce customer service costs by up to 30%. AI-powered sentiment analysis can help banks understand customer emotions and preferences. Forrester (2020) asserts that sentiment analysis can help banks improve customer experience by identifying areas of improvement.

Predictive analytics is a key AI technology that can help banks predict customer behaviour and preferences. A study by McKinsey (2020) found that predictive analytics can help banks increase customer retention by up to 20%. AI-driven customer experience solutions can provide an omnichannel experience, which is critical for building customer loyalty. Deloitte (2020), avow that omnichannel experience is a key driver of customer satisfaction. AI-powered customer journey mapping can help banks understand the customer journey and identify areas of improvement. Customer journey mapping can help banks improve customer experience by up to 25% (PwC, 2020). AI-driven customer experience solutions can provide real-time feedback, which is critical for improving customer experience. Real-time feedback can help banks improve customer satisfaction by up to 15% (Gartner, 2020) AI-driven customer experience solutions can increase efficiency by automating routine tasks. AI can help banks reduce customer service costs by up to 20% (Accenture, 2020) AI-driven customer experience solutions can improve customer satisfaction by providing personalised and efficient service. AI-powered customer experience solutions can improve customer satisfaction by up to 30% (Forrester, 2020).

AI-driven customer experience solutions can provide a competitive advantage to banks by differentiating them from their competitors. Banks that invest in AI-powered customer experience solutions are more likely to outperform their competitors (McKinsey, 2020).

Some studies suggest that the adoption of AI-driven customer experience solutions is still limited in the banking industry. Only 20% of banks have successfully implemented AI-driven customer experience solutions (BCG, 2020). Data quality issues can limit the effectiveness of AI-driven customer experience solutions. These issues are a major challenge in implementing AI-driven customer experience solutions (Experian, 2020). Other studies suggest that AI-driven customer experience solutions lack transparency, which can lead to mistrust among customers. The *Harvard Business Review* (2020) affirms that transparency is critical for building trust in AI-powered systems.

AI-driven customer experience solutions can create dependence on technology, which can be a challenge in case of technical issues. A study by Gartner (2020) found that banks need to have contingency plans in place in case of technical issues. Cybersecurity risks are a significant concern in AI-driven customer experience solutions. Cybersecurity risks are a major challenge in implementing AI-driven customer experience solutions (PwC, 2020). Some studies suggest that there is a limited understanding of AI-driven customer experience solutions among banking professionals. Centure (2020), opine that many banking professionals lack the necessary skills and knowledge to implement AI-driven customer experience solutions effectively. The high implementation costs of AI-driven customer experience solutions can be a barrier to adoption. The cost of implementing AI-driven customer experience solutions is a major concern for many banks (KPMG, 2020). Regulatory challenges can limit the effectiveness of AI-driven customer experience solutions. Regulatory uncertainty is a major challenge in implementing AI-driven customer experience solutions (EY, 2020). Some studies suggest that AI-driven customer experience solutions may not be scalable in the banking industry. McKinsey (2020) says that scalability is a major challenge in implementing AI-driven customer experience solutions. Customer expectations can be a challenge in implementing AI-driven customer experience solutions. Forrester (2020) states customer expectations are constantly evolving.

To Identify Challenges and Opportunities for Improvement

Data quality issues are a significant challenge in AI adoption, including AI-driven customer experience solutions. According to a report by Experian (2020), data quality issues can lead to inaccurate insights and poor decision-making. Regulatory challenges are a major obstacle to AI adoption in the banking industry. Regulatory uncertainty is a significant challenge in implementing AI-driven customer experience solutions (EY, 2020). Cybersecurity risks are a significant concern in AI-driven customer experience solutions. PwC (2020) report that cybersecurity risks can lead to data breaches and reputational damage. Lack of transparency in AI decision-making can lead to mistrust among customers. *The Harvard Business Review* (2020) emphasises the need for transparency in AI decision-making. Acquiring the right talent is a

significant challenge in AI adoption. AI and machine learning skills are among the most in-demand skills in the banking industry (LinkedIn, 2020)

High implementation costs are a barrier to AI adoption in the banking industry. A study by KPMG (2020) found that the cost of implementing AI-driven customer experience solutions is a major concern for many banks. Limited scalability is a challenge in implementing AI-driven customer experience solutions. McKinsey (2020) reports that scalability is a major challenge in implementing AI-driven customer experience solutions. Customer expectations are constantly evolving and AI-driven customer experience solutions need to keep pace, adapt to changing customer needs and preferences. Forrester (2020) emphasises the need for banks to stay agile and responsive to customer needs. Data privacy concerns are a significant challenge in AI-driven customer experience solutions. Data privacy concerns can lead to regulatory issues and reputational damage (Harvard Business Review, 2020). Lack of standardisation is a challenge in AI adoption, including AI-driven customer experience solutions. A study by Gartner (2020) found that standardisation is critical for ensuring interoperability and scalability.
Some studies suggest that AI-driven customer experience solutions may have limited impact on customer satisfaction and loyalty. BCG (2020) report the impact of AI-driven customer experience solutions may be limited if not implemented correctly. Other studies suggest that there is an overemphasis on technology in AI-driven customer experience solutions and that human interaction is still critical for building customer relationships. Accenture (2020) maintains that human interaction is still essential for building trust and loyalty with customers. Studies suggest that there is a lack of clear ROI in AI-driven customer experience solutions, which can make it difficult to justify investment. KPMG (2020) confirm that banks need to carefully evaluate the ROI of AI-driven customer experience solutions. AI-driven customer experience solutions are dependent on high-quality data, which can be a challenge in certain situations according to some studies. Experian (2020) emphasises the need for high-quality data to drive AI-driven customer experience solutions.

Methodology

Research Philosophy

This study adopts a positivist research philosophy, which emphasises the importance of objectivity and empirical evidence in research methodology (Saunders *et al*., 2019). Positivism allows researchers to use quantitative methods to test hypotheses and identify patterns and relationships in data.

Research Design

This study employs a descriptive research design, which aims to accurately describe a phenomenon or situation without answering questions about how/when/why the phenomenon occurred (Sekaran and Bougie, 2016). The descriptive design allows the study to collect data that provide a snapshot of the current state of AI adoption in Zimbabwean banks' e-commerce platforms and to identify patterns and trends in the data. This design is suitable for this study because it enables the research to describe the characteristics of AI adoption, customer experience and satisfaction and to provide insights into the current state of AI adoption in Zimbabwean banks' e-commerce platforms. By using a descriptive research design, this study is able to provide a detailed description of the variables under study, including AI adoption, customer experience and satisfaction. The design also allows for the use of statistical analysis to summarise and describe the data and to identify patterns and trends. This enables the research to provide a comprehensive understanding of the current state of AI adoption in Zimbabwean banks' e-commerce platforms and to identify areas for improvement. The descriptive research design is also suitable for this study because it is a flexible design that can be used to collect data from a large sample of respondents. This enables the research to generalise the findings to the population of customers of Zimbabwean banks' e-commerce platforms.

Sampling Technique

This study used a stratified random sampling technique to select a sample of 250 customers of Zimbabwean banks' e-commerce platforms. Stratified random sampling involves dividing the population into distinct subgroups or strata and then randomly selecting samples from

each stratum (Cochran, 1977). This technique ensures that the sample is representative of the population and allows for more accurate estimates of population parameters.

Population and Sample Size

The population of this study consists of all customers of Zimbabwean banks' e-commerce platforms. The sample size is 250 customers, which is considered adequate for a quantitative study (Sekaran and Bougie, 2016). The sample size is determined based on the research objectives and the need for statistical analysis.

Data Collection Instrument

This study uses a survey questionnaire as the data collection instrument. The survey questionnaire is designed to collect quantitative data and includes questions on demographics, AI adoption, customer experience and satisfaction. The survey questionnaire is justified because it allows for the collection of large amounts of data from a diverse sample of respondents (*ibid.*). Additionally, the survey questionnaire provides a flexible and efficient way to collect data and allows for the use of statistical analysis to identify trends and patterns.

Findings

Current state of AI adoption

The results show that there is a significant positive relationship between AI adoption and organisational performance in Zimbabwean banks. The analysis of variance (ANOVA) results indicates that there is a significant difference in the mean scores of AI adoption across different age groups ($F = 3.45$, $p < 0.05$), with younger customers being more likely to adopt AI-powered services. The regression analysis results show that there is a significant positive relationship between AI adoption and customer satisfaction ($\beta = 0.35$, $p < 0.01$), suggesting that customers who adopt AI-powered services are more likely to be satisfied with their banking experience. The Pearson correlation results show that there is a significant positive correlation between AI adoption and customer experience ($r = 0.42$, $p < 0.01$), indicating that customers who adopt AI-powered services tend to have a more positive experience with their bank.

H1: There is a significant positive relationship between AI adoption and organisational performance in Zimbabwean banks. The regression analysis results show that AI adoption has a positive impact on organisational performance, as evidenced by the significant positive relationship between AI adoption and customer satisfaction ($\beta = 0.35$, $p < 0.01$).

To Assess the Effectiveness of AI-Driven Customer Experience Solutions

The results show that AI-driven customer experience solutions are effective in improving customer satisfaction and loyalty in Zimbabwean banks. The ANOVA results indicate that there is a significant difference in the mean scores of customer satisfaction across different AI-driven customer experience solutions ($F = 4.21$, $p < 0.01$), with customers who use AI-powered chatbots being more satisfied with their banking experience. The regression analysis results show that there is a significant positive relationship between AI-driven customer experience solutions and customer loyalty ($\beta = 0.41$, $p < 0.01$), suggesting that customers who use AI-driven customer experience solutions are more likely to be loyal to their bank. The Pearson correlation results show that there is a significant positive correlation between AI-driven customer experience solutions and customer retention ($r = 0.51$, $p < 0.01$), indicating that customers who use AI-driven customer experience solutions tend to be more loyal to their bank.

H2: AI-driven customer experience solutions have a significant positive impact on customer satisfaction in Zimbabwean banks. The regression analysis results show that AI-driven customer experience solutions have a positive impact on customer satisfaction, as evidenced by the significant positive relationship between AI-driven customer experience solutions and customer loyalty ($\beta = 0.41$, $p < 0.01$).

To Identify Challenges and Opportunities for Improvement

The results show that data quality and regulatory challenges are major obstacles to the adoption of AI-driven customer experience solutions in Zimbabwean banks. The ANOVA results indicate that there is a

significant difference in the mean scores of challenges faced by banks in implementing AI-driven customer experience solutions ($F = 3.12$, $p < 0.05$), with data quality being a major challenge. The regression analysis results show that there is a significant negative relationship between data quality and AI adoption ($\beta = -0.28$, $p < 0.05$), suggesting that poor data quality can hinder the adoption of AI-driven customer experience solutions. The Pearson correlation results show that there is a significant negative correlation between regulatory challenges and AI adoption ($r = -0.35$, $p < 0.01$), indicating that regulatory challenges can hinder the adoption of AI-driven customer experience solutions.

H3: The adoption of AI in Zimbabwean banks is hindered by significant challenges, including infrastructure, data quality and skills gaps. The results show that data quality and regulatory challenges are significant obstacles to AI adoption, as evidenced by the significant negative relationship between data quality and AI adoption ($\beta = -0.28$, $p < 0.05$) and the significant negative correlation between regulatory challenges and AI adoption ($r = -0.35$, $p < 0.01$).

Conclusion and Recommendations

To Examine the Current State of AI Adoption

Based on the objective which aimed to examine the Current State of AI Adoption in the banking industry of Zimbabwe, it is recommended that banks in Zimbabwe should develop AI-powered services that cater to the needs of younger customers, such as mobile banking apps and chatbots. This is supported by McKinsey (2020), who says that AI-powered services can improve customer experience and increase customer loyalty among younger customers. It is also recommended that banks should invest in data analytics to better understand customer behaviour and preferences and to develop personalised services. Deloitte (2020) found that data analytics can help banks to better understand customer needs and preferences and to develop targeted marketing campaigns. Lastly, banks should provide training and support to employees to ensure that they are equipped to handle AI-powered services. Employee training and support are critical to the successful adoption of AI-powered services (PwC, 2020).

To Assess the Effectiveness of AI-Driven Customer Experience Solutions

Based on the objective which aimed to assess the Effectiveness of AI-Driven Customer Experience Solutions, it is recommended that banks in Zimbabwe should invest in AI-driven customer experience solutions, such as chatbots and virtual assistants, to improve customer experience and loyalty. Forrester (2020), state that AI-powered customer experience solutions can improve customer satisfaction and loyalty. Additionally, banks should develop personalised services that cater to the needs of individual customers, using data analytics and AI-powered solutions. According to Accenture (2020), personalised services can improve customer experience and increase customer loyalty. Finally, banks should continuously monitor and evaluate AI-driven customer experience solutions to ensure that they are meeting customer needs and expectations. Gartner (2020) emphasises the importance of continuously monitoring and evaluating AI-powered solutions to ensure that they are effective and efficient.

To Identify Challenges and Opportunities for Improvement

Based on the objective which aimed to identify Challenges and Opportunities for Improvement, it is recommended that Banks in Zimbabwe should prioritise data quality by implementing robust data governance frameworks and ensuring that data are accurate, complete and consistent. According to EY (2020), data quality is a critical challenge in AI adoption and banks need to prioritise data quality to ensure the successful adoption of AI-driven customer experience solutions. Additionally, banks should ensure that AI-driven customer experience solutions comply with regulatory requirements, such as data protection and privacy laws. KPMG (2020) emphasise the importance of regulatory compliance in AI adoption. Finally, banks should continuously monitor and evaluate AI-driven customer experience solutions to identify opportunities for improvement and ensure that they are meeting customer needs and expectations. Continuous monitoring and evaluation of AI-driven solutions can help banks to identify areas for improvement and optimise their AI investments (McKinsey, 2020)

REFERENCES

Accenture. (2020). *Banking on Personalization: How Personalised Services Can Improve Customer Experience*. [Online] Available at: https://www.accenture.com/us-en/insights/banking/personalized-banking-experience

Bolton, R. N., McColl-Kennedy, J. R., Cheung, L., Gallan, A., Orsingher, C., Witell, L. and Zaki, M. (2018). Customer Experience Challenges: Conceptualization, Measurement and Customer Journey Perspective. *Journal of Service Management*, 29(5), pp. 777-803.

Chen, Y., Li, X. and Smith, A. N. (2022). The Impact of AI-Powered Customer Service on Customer Satisfaction in the US Banking Industry. *Journal of the Academy of Marketing Science*, 50(3), pp. 567-585.

Da Silva, D. S. and Rodrigues, R. G. (2022). The Impact of AI-Powered Chatbots on Customer Satisfaction in Brazilian E-Commerce. *Journal of Retailing and Consumer Services*, 64, 102826.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), pp. 319-340.

Deloitte. (2020). *Banking on Data: How Data Analytics is Transforming the Banking Industry*. [Online] Available at: https://www2.deloitte.com/global/en/pages/financial-services/articles/banking-on-data.html

EY. (2020). *How to Thrive in A World of Artificial Intelligence*. [Online] Available at: https://www.ey.com/en_gl/ai/how-to-thrive-in-a-world-of-artificial-intelligence

Forrester. (2020). *The Forrester Wave™: AI-Powered Customer Experience Solutions, Q4 2020*. [Online] Available at: https://www.forrester.com/report/the-forrester-wave-tm-ai-powered-customer-experience-solutions-q4-2020/RES158210

Gartner. (2020). *AI-Powered Customer Experience Solutions: A Guide to Getting Started*. [Online] Available at: https://www.gartner.com/en/documents/3992979

Grewal, D. and Roggeveen, A. L. (2020). Understanding the Impact of Artificial Intelligence on Customer Experience. *Journal of the Academy of Marketing Science*, 48(6), pp. 1019-1023.

Harvard Business Review. (2020). The Age of Continuous Connection. *Harvard Business Review*, 98(3), pp. 60-69.

Hokonya, S. (2024). *Artificial Intelligence and Customer Experience: Key Takeouts from Telecoms Sector in Zimbabwe*. Paper presented at the International Conference on Artificial Intelligence and Business, Harare, Zimbabwe.

Kotler, P. and Keller, K. L. (2020). *Marketing Management*. 15th Global ed. Harlow: Pearson Education.

KPMG. (2020). *AI in Banking: A Review of the Current State of Play*. [Online] Available at: https://home.kpmg/xx/en/home/insights/2020/06/ai-in-banking.html

Kumar, V. and Reinartz, W. (2022). AI-Powered Customer Experience in E-Commerce: A Study of Indian Consumers. *Journal of Retailing*, 98(2), pp. 224-243.

Laudon, K. C. and Traver, C. G. (2020). *E-Commerce 2020: Business, Technology, Society*. 16th ed. Harlow: Pearson.

Lee, S. and Lee, Y. (2022). The Impact of AI-Powered Chatbots on Customer Satisfaction in Korean E-Commerce. *Electronic Commerce Research and Applications*, 54, 101169.

Lemon, K. N. and Verhoef, P. C. (2016). Understanding Customer Experience throughout the Customer Journey. *Journal of Marketing*, 80(6), pp. 69-96.

LinkedIn. (2020). *Global State of Customer Experience*. [Online] Available at: https://business.linkedin.com/marketing-solutions/blog/blog-2020/the-global-state-of-customer-experience-

McKinsey & Company. (2020). *Banking on AI: How Artificial Intelligence Is Transforming the Banking Industry*. [Online] Available at: https://www.mckinsey.com/industries/financial-services/our-insights/banking-on-ai-how-artificial-intelligence-is-transforming-the-banking-industry

Mhlanga, O. (2022). The Adoption of AI in Customer Experience: A Study of South African Retailers. *South African Journal of Business Management*, 53(1), a2855.

Ncube, C. and Ncube, P. (2021). *AI-Powered Customer Experience in Zimbabwean Banking Industry*. (Unpublished Master's Dissertation). Midlands State University, Zimbabwe.

PwC. (2020). *Banking on AI: How Artificial Intelligence Is Transforming the Banking Industry*. [Online] Available at: https://www.pwc.com/gx/en/issues/analytics/assets/pwc-ai-in-banking.pdf

Reserve Bank of Zimbabwe. (2020). *Survey on Mobile Banking Services and Online Banking Services Usage among Respondents*. Harare: Reserve Bank of Zimbabwe.

Smith, A. N. and Johnson, M. D. (2020). AI and Customer Experience: A Study of UK Retailers. *Journal of Retailing and Consumer Services*, 52, 101923.

Turban, E., McLean, E. R. and Wetherbe, J. (2021). *Information Technology for Management: Driving Digital Transformation to Increase Local and Global Performance, Growth and Sustainability*. 12th ed. Hoboken, NJ: John Wiley & Sons.

Vargo, S. L. and Lusch, R. F. (2004). Evolving to a New Dominant Logic for Marketing. *Journal of Marketing*, 68(1), pp. 1-17.

Vargo, S. L. and Lusch, R. F. (2008). Service-Dominant Logic: Continuing the Evolution. *Journal of the Academy of Marketing Science*, 36(1), pp. 1-10.

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N. and Haenlein, M. (2021). Customer Experience Creation in the Digital Age: A Research Agenda. *Journal of the Academy of Marketing Science*, 49(4), pp. 691-703.

Zimbabwe National Statistics Agency. (2020). *Internet Users and Mobile Penetration Rates in Zimbabwe*. Harare: ZIMSTAT.