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The Impact of Artificial Intelligence on Financial Inclusion in Zimbabwe's Banking Sector: Challenges and Opportunities for Expanding Access to Financial Service

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ABSTRACT

The purpose of the study was to investigate the effect of artificial intelligence (AI) on advancing financial inclusion in Zimbabwean banks through AI credit scoring, chatbots, anomaly detection systems, and predictive analytics. The researchers used a mixed-methods research design which included data collection from 293 respondents who completed the questionnaire and 12 participants who came for the interview. Artificial intelligence (AI) technology enables loan processing by making financial products more accessible through its three main functions which are usability and safety in transactions and financial literacy training. The researchers found that organisations strongly supported AI systems for decision-making and fraud detection yet users still had concerns about how AI credit assessments and chatbot operates. AI adoption process faces critical obstacles which originate from four sources which are digital illiteracy, poor Internet access, excessive application costs and the rural-to-urban divide. Anomaly detection systems had the most significant impact on financial outcomes since they explain 62.3% of the outcome differences which AI technologies produce. The research found that AI functions as an essential instrument for advancing financial inclusion in Zimbabwe through its ability to enhance banking access and operational efficiency and secure banking services. The study recommended the establishment of more accessible AI systems for decision-making, providing digital literacy programme improvements through regulatory support, and creating special resources for communities that lack essential services.

Keywords: Artificial Intelligence, Financial Inclusion, Credit Scoring, Chatbots, Predictive Analytics

INTRODUCTION

Artificial intelligence (AI) is establishing itself as a disruptive technology for international finance as it enables automatic processes, data-based financial assessments and reduced operational expenses. Research showed that AI credit scoring systems which use automated data sources rather than traditional credit records, create new opportunities to provide loans to people who lack official credit documentation (Nuka and Ogunola, 2024). AI banking services which include automated customer assistance, efficient on-boarding processes and instant fraud detection technology, help financial institutions to enhance their operational efficiency while reducing expenses and providing better service to under banked populations (Lee, 2024). Digital infrastructure improvements enable these technologies to significantly decrease transaction and administrative expenses which currently prevent low-income and rural people from accessing formal banking services.

Zimbabwean banks have experienced increased digital finance adoption throughout the last several years. This created an environment which supports the use of AI to develop banking innovations. In 2025, Kawara, Muchara, and van der Poll carried out a study to investigate financial inclusion among Zimbabwean commercial banks. The results showed that financial inclusion had improved among individuals. The existing gaps between rural areas and other marginalized populations demonstrate major problems. Masuka 2025, conducted a study

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on smallholder farmers and the results highlighted that these farmers could not access multiple financial services due to financial illiteracy, education level, household characteristics and rural banking infrastructure. Digital banking systems faced structural inequalities from literacy, income, geographical barriers, and service access limitations which prevent more people from using them. AI-based banking solutions would create new possibilities to help Zimbabwe's underserved populations through their services.

Adoption of Artificial intelligence require specific connectivity solutions, data infrastructure systems, regulatory frameworks and social inclusion methods. Nuka and Ogunola, 2024 analysed the use of AI and machine learning as tools for financial inclusion.

The researchers found out that whilst these concepts broaden access to credit and improve risk assessment, they also harbour risks like algorithmic bias, lack of transparency, weak data governance, and data privacy-related issues. Thu, Doan, and Quy, 2024 evaluated credit scoring fairness by analysing machine learning models which have received fairness enhancements. Advanced machine learning models produced biased results due to the need for auditing and correction. This demonstrated that automated credit evaluation perpetuated social disparities without fairness constraints.

Regulation and governance functioned as dual components which requires equal assessment. Makore 2024 contend that financial inclusion should receive proper evaluation through analysis of regulatory frameworks which include transparency requirements, consumer protection measures, data privacy regulations, and accountability systems for automated decision-making.

Financial institutions faced difficulties with their AI transformation due to customers who lack digital skills and minimal data presence experience adverse effects from the absence of required frameworks. People involved in these situations faced impossible battle to prove their case against the algorithmic decision. This denied their credit application since they lacked knowledge about the reasons and available options for appeal. The governance issues became essential for Zimbabwe as the country faces two main problems which include undefined regulatory frameworks and incomplete digital connectivity.

There is insufficient research evidence from 2023 onwards to determine whether AI-based banking services in Zimbabwe actually provide financial access to underserved groups. The world has adopted digital finance as an AI-based solution which Zimbabwe now implements to achieve financial inclusion through its digital financial services. Research shows that AI technologies create new access barriers when their systems operate without fairness mechanisms, transparency practices, and data management systems (Nuka and Ogunola, 2024; Thu, Doan and Quy, 2024; Makore, 2024). This empirical gap requires country-specific studies to assess how AI implementation in Zimbabwean banks impact financial access.

The research aims to investigate how AI adoption affects financial inclusion in Zimbabwe's banking sector. The research first identified critical challenges and institutional barriers to AI implementation in banking. The study used evidence to create ethical and inclusive AI adoption guidelines for the banking sector. The research proceeded with the following objectives:

(1) To measure the association between exposure to AI-enabled banking services and indicators of financial inclusion- account uptake, usage frequency, credit access among previously unserved clients.

(2) To identify infrastructural, institutional and data-governance barriers limiting AI-driven inclusion (connectivity, data integrity, regulatory safeguards, digital literacy).

(3) To assess customer perspectives of trustworthiness and transparency and impartiality and recourse options which AI banking services offer their users who belong to different user groups (i.e. urban, rural, women, informal sector, etc. smallholder farming).

(4) To create context-sensitive AI implementation recommendations which help Zimbabwean banks and regulators achieve their inclusion goals while reducing bias, exclusion and their decision-making processes from being hidden.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

LITERATURE REVIEW

AI-Powered Credit Scoring and Access to Credit

The credit scoring system uses artificial intelligence to implement machine learning techniques which determine creditworthiness through non-traditional data sources that include mobile phone usage and transaction records and social behaviour patterns for people who do not have access to standard banking services (Nuka and Ogunola, 2024). The research findings show that AI-assisted credit scoring systems improve risk evaluation by decreasing information gaps which enables lenders to provide loans to people who lack conventional credit records (Museba, 2024). However, issues of data privacy might become an area of great concern in such a situation, leading to bias. In Zimbabwe, where people living in rural areas and low-income groups do not possess official financial documents, AI-based credit systems have the capability to create new pathways for people to access banking services (Kawara, Muchara, and van der Poll 2025).

Sub-Saharan Africa evidence shows that microloans and small business loans can have high approval rates using an AI scorer, even for those borrowers with thin files, but with very low default rates (Thu, Doan, and Quy 2024). However, it is necessary to analyse the capacity of the models. Museba (2024) reports that banks could use alternative-data AI models to assess risk dynamically to increase credit access in new market segments initially categorised as underserved. Kawara, Muchara, and van der Poll (2025) have emphasised that using AI within Zimbabwean banks would very well transform the financial landscape for the rural poor since it boosts accession. Nonetheless, these developments need to be tackled with care in order to improve inclusivity without widening differences. The argument for AI-based scoring providing real-time decision-making, thereby enhancing the speed and reliability of credit approvals, has been taken further by Thu, Doan, and Quy (2024). Additionally, Museba (2024) suggests that lenders could be encouraged to give loans to excluded groups if AI predictive ability reduces lender risk Therefore, we hypothesise that;

H_1: AI-powered credit scoring significantly improves access to credit for financially excluded groups in Zimbabwe.

Chatbots, Virtual Assistants, and Usage of Financial Services

The introduction of AI-powered chatbots and virtual assistants into banking operations improved customer engagement through personalised service delivery and faster service execution, which led to increased financial service usage (Lee, 2024). The chatbot system enables customers to receive immediate support whilst learning about banking services. This benefits people without financial literacy skills and branch access (Makore, 2024). However, this can unintentionally strengthen available differences. According to Masuka (2025), recent research from Zimbabwe demonstrates that customers now use virtual assistants for basic financial planning tasks and enquiries, which leads to increased and more intense usage of financial services. Similarly, Nuka and Ogunola (2024) support the view that virtual assistants simplify service delivery, which results in shorter service times and higher customer satisfaction, thereby increasing the likelihood that customers adopt and continue using financial products. Nevertheless, the emphasis on efficiency can lead to paying a blind eye to other important issues such as financial education.

Museba (2024) argues that artificial intelligence chat systems build stronger customer trust in banking services, which helps rural customers who have difficulty accessing banking services. Thu, Doan, and Quy (2024) found that virtual assistants function as banking system guides for customers who need assistance with difficult banking tasks. According to Makore (2024), organisations enable service access to all users through chatbot implementation, which uses local languages and provides support for users with low literacy skills. The studies prove that virtual assistants and chatbots create positive changes in financial behaviour for people in Zimbabwe who use banking services. In light with these discussion, the researchers hypothesised that;

H2: Chatbots and virtual assistants significantly enhance the usage of financial services in Zimbabwe's banking sector.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

Anomaly Detection Algorithms and Security in Financial Transactions

The most prominent application of AI in financial transaction security is the anomaly detection algorithm, which can detect unusual patterns being a potential indication of fraud, money laundering, or unauthorised access (Bajracharya, Khakurel, Harvey; Rawat, 2023). Recent evidence suggests that an anomaly detection system through machine learning has enhanced the speed and accuracy of suspicious financial activities and reduced financial risk at the institutional as well as personal levels (Mestiri, 2024). However, reliability and fairness of the algorithms needs to be checked. Given that Zimbabwe is a country with increasing incidences of cybercrime in digital banking associated with the increased uptake in mobile money transactions, anomaly detection would offer much-needed protection for customer assets (Museba, 2024). It has been determined by Thu et al. and Doan and Quy (2024) that AI algorithms trained on transaction patterns could detect anomalies in real time. This can stop losses before they take place. However, this is dependent on the quality of training data in use.

Kawara, Muchara, and van der Poll (2025) found that automated anomaly detection boosts customer confidence and aids regulatory requirements, leading to trust in banking systems. While this improvement is appreciated, it is also important to analyse the extent of the trust. Automated anomaly detection influences the combination with adaptive learning models that keep updating over time as fraud takes new forms (Makore, 2024). Integrating anomaly detection into digital banking platforms relieves human security teams of the operational burden while enabling monitoring at scale (Nuka and Ogunola, 2024). Museba (2024) provided evidence that banks which use AI-based systems for fraud detection have successfully prevented financial losses from their transactions and this demonstrates the security advantages of their operational methods. If one is to think otherwise, this study has found it anomaly detection algorithms improve the protection of cash transactions. Therefore, the researchers hypothesised that;

H3: Anomaly detection algorithms significantly enhance security in financial transactions.

Predictive Analytics, Robo-Advisors, and Financial Literacy

Predictive analytics and AI-based robo-advisors together create personalised financial solutions which enhance clients' ability to understand their finances better (Lee 2024). However, even though this integration is highly appreciated, there is still need for a deep analysis of the tools. The research shows that clients use predictive analytics to foresee their upcoming financial situations while they acquire savings skills and debt management abilities, which leads to improved financial choices (Bajracharya, Khakurel, Harvey; Rawat 2023). This skill development is appreciated but there is risk of heavy reliance on the robo-advisors. Masuka (2025) explained that robo-advisors with mobile and online banking connections provide users with an interactive learning platform which enables them to discover personal finance, budgeting and investment strategies. Users who receive predictive insights together with automated financial assistance show increased confidence in their ability to handle financial products, which leads to improved financial literacy results, (Museba, 2024). The researchers Kawara, Muchara, and van der Poll (2025) indicated that AI tools create personalised recommendations by analysing individual behavioural patterns together with financial data. This gave insights on the following hypothesis development;

H4: Predictive analytics and robo-advisors significantly enhance financial literacy in Zimbabwe.

METHODOLOGY

Research Philosophy and Approach

The research philosophy which was used is pragmatism. It emphasises on practical solutions and multiple methods to deal with complex phenomena such as AI adoption in Zimbabwe's banking sector (Dube et al., 2024). This philosophy supports the collection of both quantitative and qualitative data to investigate how AI affects financial inclusion from various perspectives (Creswell & Plano Clark, 2023). Abductive research approach was employed as it supports an iterative movement between observed data and theoretical constructs for the generation of plausible explanations on how AI technologies, chatbots, anomaly detection, and predictive

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

analytics-influence financial inclusion outcomes in a local banking context (Timmermans & Tavory, 2020; Charles & McNulty, 2021).

Research Design

The present study adopted a mixed-method research design which used correlational and exploratory methods to study how AI adoption relates to financial inclusion metrics while investigating the institutional and operational processes that support those relationships (Creswell & Plano Clark 2023). The study established a complete analysis which linked the generalisable results from quantitative research to the detailed contextual information obtained from qualitative research (Bryman 2016; Field 2018).

Population, Sampling, and Sample Size

The total number of employees who worked in major commercial banks in Harare was 1754. This included 923 management personnel and 831 regular employees. The researchers used stratified random sampling to choose their survey participants. Additionally, purposeful sampling was used to select the participants for the interviews. The researchers used Raosoft to calculate a sample size of 293 respondents, which would provide enough statistical power for quantitative research. Similarly 12 participants were used for qualitative data collection.

Data Collection Procedures

Researchers distributed the questionnaires through online platforms. They conducted semi-structured interviews with twelve (12) management members both face to face and telephone interviews to explore their motivations, the implementation challenges, and expected results of AI systems.

Data Analysis

The researchers conducted data cleaning procedures on the quantitative data set. The sample data and variable characteristics were summarised using descriptive statistics. Quantitative data was analysed using Software Package for Social Sciences (SPSS). Hypotheses testing was done using multiple regression analysis. The researchers used NVivo software to conduct thematic analysis for qualitative data, which allowed them to discover institutional practices and difficulties while studying how people view AI-based inclusive practices (Braun and Clarke, 2021; Flick, 2022).

Validity and Reliability

The interview guide was developed from recent literature on AI and financial inclusion and received expert reviews from banking and academic members. This established its content validity according to Cohen, Manion and Morrison (2021) and Yegidis, Meyers and DePanfilis (2021).

The researchers established reliability for quantitative data through pilot testing and Cronbach alpha computation which confirmed that all constructs maintained internal consistency above 0.7 according to (Taber 2018 and Hair et al. 2020.

The research achieved qualitative trustworthiness through triangulation and member checking and thick description which established the research findings' credibility, dependability and confirmability (Zamawe, 2015; Creswell & Plano Clark, 2023; Gill, 2021). The structured questionnaire was developed using validated measurement scales in order to achieve content validity (Lincoln & Guba, 1985; Cohen, Manion & Morrison, 2021; Yegidis, Meyers & DePanfilis, 2021).

Ethical Considerations

The researchers protected participant confidentiality through total removal of personal identifiers. The study participants received information about their right to choose whether to participate or to leave the study at any moment. The researchers conducted the study with complete transparency which protected participants from possible harm (Bryman 2016; Grix 2018; Saunders, Lewis & Thornhill 2019).

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

RESULTS

Descriptive Results for AI in Banking

The table below indicated how respondents viewed AI technologies which were used by Zimbabwean banks for credit scoring and fraud detection.

The study presented a complete assessment of AI technologies which include effectiveness, convenience, security features, and obstacles they present to AI technology implementation. Table 1.1 illustrates the descriptive statistics on AI in banking.

Table 1: Descriptive Statistics on AI in Banking

Statement	N	Mean	Std. Dev
AI improves loan approval chances	293	3.82	0.74
AI credit assessment is fair	293	3.68	0.79
AI credit decisions are transparent	293	3.25	0.84
AI expands access for unbanked	293	3.91	0.69
AI reduces bias in lending	293	3.54	0.81
I regularly use AI chatbots	293	3.45	0.83
Chatbots improve access	293	3.76	0.79
Virtual assistants increase convenience	293	3.89	0.71
Chatbots provide accurate responses	293	3.62	0.78
AI reduces branch visits	293	3.81	0.74
AI enhances online safety	293	3.91	0.71
AI helps detect suspicious activity	293	3.78	0.76
Predictive analytics aids decision-making	293	4.14	0.71
Robo-advisors improve financial understanding	293	3.89	0.74
AI recommendations improve budgeting	293	4.05	0.69
AI literacy tools should expand	293	4.29	0.64
Limited digital literacy is a barrier	293	4.21	0.66
Poor internet affects AI use	293	4.13	0.70
AI benefits urban more than rural users	293	4.10	0.75
High costs limit access	293	4.07	0.68

Source: Primary Data (2025)

The research results demonstrated that artificial intelligence technology delivers significant advantages for both banking operations and financial accessibility efforts in Zimbabwe. The credit scoring and advisory tools improve the access decision and financial literacy, which both need established solutions that function at lower transparency (3.25) and trust in AI advice (3.62) standards as shown in Table 1 above.

Fraud detection and security instruments received high confidence ratings between 3.78 and 4.02, whilst chatbots and virtual assistants provided users with greater convenience, which led to a decrease in the need for physical bank visits between 3.45 and 3.89. The following barriers, limited digital literacy (4.21), internet connectivity (4.13), costs (4.07), and urban-rural disparities (4.10), highlighted infrastructural and educational gaps which required certain needs.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

Hypothesis Testing

Normality Test (Shapiro-Wilk Test)

The Shapiro-Wilk test was used to determine whether the variables which measured AI adoption and its impact on financial services operated under a normal distribution pattern. Table 2 below indicated the Shapiro-Wilk Normality Test.

Table 2: Shapiro-Wilk Normality Test

Variable	Statistic	Df	Sig.
AI credit scoring impacts credit access	0.942	293	0.001
Chatbots & virtual assistants improve service usage	0.928	293	0.004
Anomaly detection enhances transaction security	0.956	293	0.005
Predictive analytics & robo-advisors enhance financial literacy	0.949	293	0.003

Source: Primary Data, 2025

Table 2 above showed that all tested variables displayed normal distribution violations as shown by their p-value results that fell below the 0.05 threshold. AI-enabled credit scoring showed the most significant deviation with a p-value of 0.001 and chatbots or virtual assistants technologies showed a p-value of 0.004. The Central Limit Theorem enables the study to use parametric methods since the researchers used a large sample size.

Correlation Analysis

The researchers used correlation analysis to measure both the strength and direction of relationships between AI technologies and important financial results. Table 3 below illustrated the correlation matrix.

Table 3: Correlation Matrix

Variables	AI Credit Scoring	Chatbots/Virtual Assistants	Anomaly Detection	Predictive Analytics/Robo-Advisors
Access to Credit	0.695**	0.667**	0.648**	0.605**
Service Usage	0.672**	0.718**	0.621**	0.598**
Security	0.655**	0.639**	0.712**	0.623**
Financial Literacy	0.591**	0.578**	0.549**	0.732**

Note: p < 0.01 (2-tailed)

Source: Primary Data, 2025

Table 3 above highlighted that artificial intelligence systems produce positive outcomes which enhance the performance of financial service providers. The most important relationship between AI credit scoring and credit access showed a correlation of r = 0.695** while chatbots and virtual assistants show the highest connection to customer service utilization with a correlation of r = 0.718**. Anomaly detection showed its strongest link to security systems with a correlation of r = 0.712** whilst predictive analytics together with robo-advisors demonstrated their strongest relationship to financial literacy with a correlation coefficient of r = 0.732**.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

Multiple Regression Analysis

Multiple regression analysis was done to determine the unique contribution of each AI technology to improving financial services. Table 4 below highlighted the multiple regression analysis results.

Table 4: Multiple Regression Analysis

Model	Unstandardized B	Standardized Beta	t	Sig.
(Constant)	1.134	-	4.215	0.000
AI Credit Scoring	0.265	0.298	5.492	0.000
Chatbots/Virtual Assistants	0.236	0.278	4.783	0.000
Anomaly Detection	0.301	0.342	6.123	0.000
Predictive Analytics/Robo-Advisors	0.247	0.272	4.725	0.000

Source: Primary Data, 2025

Table 4 above showed that all AI technologies delivered beneficial outcomes for financial service performance. The security measure which protects transactions establishes anomaly detection as the most significant factor as shown by the regression coefficients (Beta = 0.342, t-value = 6.123 and $p<0.001$).

AI credit scoring system had the following regression coefficients (Beta = 0.298, t-value = 5.462 and $p< 0.001$) and it functioned as a primary AI technology which improved credit accessibility for users. Results indicated that predictive analytics and roboadvisors were very significant as shown by their regression coefficients of (Beta = 0.272, t-value = 4.725 and $p< 0.001$) since they assist users in acquiring financial knowledge to make superior decisions.

The combination of chatbots and virtual assistants had (Beta = 0.278, t-value = 4.783, $p<0.001$) and enabled users to obtain financial services. This gave insights on how AI adoption in Zimbabwean banks benefits customer access, security, financial knowledge and customer satisfaction.

Regression Model Summary

The researchers used multiple regression analysis to evaluate how well AI technologies could explain differences in key financial service results which included credit access, service usage, security measures and financial literacy levels. Table 5 below showed the summary of the regression model.

Table 5: Regression Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.789	0.623	0.619	0.478

Source: Primary Data, 2025

The model demonstrated a high correlation between AI usage and financial service improvements which resulted in an R value of 0.789 as shown in Table 5.

The R^2 value of 0.623 indicated that AI technologies explain 62.3% of the differences between financial service outcomes while the adjusted R^2 value of 0.619 showed model stability after correcting the predictor variables. The standard error value of 0.478 demonstrated that prediction results fall within the range of moderate accuracy.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

Thematic Analysis

The qualitative results from this section of the study were obtained through semi-structured interviews with 12 senior managers at Zimbabwean commercial banks. The researchers used thematic analysis which resulted in seven major themes being identified.

Theme 1: AI-Driven Credit Scoring and Financial Inclusion

"AI has enabled us to assess customers using alternative data, especially those without formal employment records." (Participant 1)

The response showed how AI technology decreases the need for standard credit evaluation methods which depend on documents such as pay slips and collateral assets. The system demonstrated its capacity to provide financial services to people who work in informal employment through its use of artificial intelligence.

"We are now comfortable lending to small traders because AI predicts repayment behaviour more accurately." (Participant 4)

This statement showed that financial institutions have developed more trust in their ability to lend money to people who were once denied access to credit. The results showed that artificial intelligence technology improved risk assessment results which organisations used to make lending decisions that promote financial inclusion.

"Loan approvals are faster and more objective since human bias is removed." (Participant 6)

The results demonstrated that AI systems increased operational productivity while preserving fair credit distribution practices. The study highlighted that automated decision making systems established financial systems which maintain transparent operations and provide equal access to all users.

Theme 2: Operational Efficiency through AI Automation

"Most of the companies rely on artificial intelligence for back-office work due to greater efficiency and economic returns for the business in general while human staff gets closer to higher-value tasks of concentration and other jobs." (Participant 2)

This indicated that AI improves internal efficiency by reducing manual workload. Improved efficiency indirectly enhanced service delivery to customers.

"One remarkable impact of AI on the processing speed of all activities is the reduction in the time it took to complete a task." (Participant 5)

This response showed how automation saves time for work performance. Faster processing times lead to better customer satisfaction while increasing service access.

"Errors have been reduced because AI systems are consistent." (Participant 8)

The results indicated that AI technology brings more accurate results and dependable performance to banking workers. Digital financial services experience increased trustworthiness because of decreased errors.

Theme 3: AI Chatbots and Service Accessibility

"*Indicates that Chatbots have facilitated banking services even during those times when they are normally off." (Participant 3)*

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

The system shows how artificial intelligence removes time-based limitations which prevent people from accessing financial services. The system enables more customers to access its services who cannot travel to physical locations.

"Customers now resolve issues instantly without visiting the bank." (Participant 6)

The system shows better user convenience because it reduces the expenses of conducting transactions. The system enables more people to start using digital banking services because it makes the services easier to access.
"Some customers are still adjusting, but chatbot usage is increasing." (Participant 9)

The statement shows how people develop new behaviours through their experience with AI tools. The study shows that people now accept the technology more than they did in the past.

Theme 4: Fraud Detection and Transaction Security

"AI detects suspicious transactions in real time, reducing fraud losses." (Participant 1)

The study demonstrates how artificial intelligence improves transaction security through its effective security enhancements. Digital platforms achieve higher customer trust through security improvements.

"Customers trust digital banking more because of AI monitoring." (Participant 4)

The connection between AI security systems and improved trust. The trust relationship forms the basis which enables people to access financial services.

"AI supports compliance with anti-money laundering regulations." (Participant 7)

The answer describes how artificial intelligence implementation helps improve governance systems. The implementation of strong compliance frameworks protects banking institutions and their customers through its security advantages.

Theme 5: Predictive Analytics and Financial Literacy

"AI tools help customers plan their finances better." (Participant 2)

Financial planning processes which use AI technology create a foundation for making correct financial decisions. Organisations achieve continuous financial stability through enhanced planning processes which deliver better financial results.

"Robotic assistance renders the abstruse data simple to understand." (Participant 5)

The statement shows that AI reduces information asymmetry. The technology helps customers understand financial matters better because it provides them with financial literacy training.

"The use of AI is supposed to unleash life and its dynamics from the ghetto of inherent sluggishness and dullness." (Participant 8)

The research shows that using artificial intelligence systems by themselves leads to specific operational challenges. The study proves that financial education programs require development because standalone artificial intelligence systems have operational restrictions.

Theme 6: Digital Literacy and Skills Constraints

"Digital illiteracy hinders customers from benefiting from AI." (Participant 3)

The response identifies human capacity as the primary obstacle which prevents progress. The explanation describes why different organisations adopt AI-enabled services at different rates.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

"Older customers struggle more with AI platforms." (Participant 6)

The citation shows how various demographic groups adopt technology at different levels. The research shows that vulnerable groups need specific support services which should be provided to them.

"Training customers is as important as deploying technology." (Participant 9)

The statement emphasises that organisations need capacity building to develop their abilities. Users who can effectively run AI systems acquire higher skills to work with all AI systems.

Theme 7: Infrastructure and Cost Barriers

"Poor internet connectivity affects AI service usage in rural areas." (Participant 4)

The present condition shows that infrastructure disparities create obstacles which stop people from reaching social inclusion. The rural population experiences more exclusion from society than other groups do.

"High costs prevent many people from using digital banking frequently." (Participant 7)

The statement shows that people face difficulties in paying for essential things. The economic barriers which exist at present prevent people from using artificial intelligence services which should be accessible to all users.

"Not everybody can afford smartphones required for an AI platforms." (Participant 1)

Accessible assistive devices remain out of reach for users because of current distribution methods. The development of inclusive AI requires implementation of socioeconomic interventions which extend beyond current requirements for its development.

DISCUSSION OF RESULTS

The researchers found that their statistical findings confirmed the results of their descriptive research since they discovered different statistical patterns between AI technologies and financial service outcomes. The normality assumption for the variable gets violated when researchers use social science datasets which Ghasemi and Zahediasl (2023) identified as having critical importance. The researchers demonstrated that large sample sizes enabled studies to produce consistent results for parametrical tests which needed data from non-normally distributed samples. The explanatory regression indicated that that AI predicts 62.3% of financial service outcome variations which supports the theoretical expectation that AI acts as a major factor affecting modern banking performance Pramanik et al. (2023). The correlation results showed that AI acts as a crucial element. Credit scoring established the strongest connection to credit access, chatbots generated the most service usage while anomaly detection helped handle security threats and, predictive analytics supported financial literacy growth. Liu and Wang 2024, conducted a research which examined the multiple ways on how AI impacts financial ecosystems. The regression analysis results showed that all AI elements functioned as strong predictors for financial service enhancements, with anomaly detection showing particularly strong results concurred with the results for Chang et al. 2022. This researcher propounded that security-based AI solutions generated the highest economic value from their marginal advantages. The present study's hypotheses received strong support from these findings.

The study investigated the relationship between AI-powered credit scoring system and access to credit for financially excluded groups. The results showed a significant relationship between the two variables and this is shown by the following regression coefficients (Beta = 0.298, t = 5.462, $p < 0.001$). These findings offers a powerful contribution to the Resource-Based View (RBV) (Barney, 1991). The significant beta coefficient indicates that AI credit scoring is a rare and valuable strategic resource rather than merely a tool. It develops a new dynamic capability, the capacity to evaluate the creditworthiness of financially excluded populations by utilizing non-traditional data. This transforms a traditional barrier into a new market opportunity, thereby generating a competitive advantage that is difficult for competitors to imitate, fulfilling the VRIN criteria

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

The researchers analysed the relationship between chatbots and virtual assistance and financial service usage in Zimbabwe's banking sector. Results from regression analysis indicated that there is a strong significant relationship which is explained by a P-value = < 0.001, Beta = 0.278, t = 4.783, p < 0.001. This confirmation supports Institutional Theory (DiMaggio & Powell, 1983) but moves it beyond mimetic isomorphism. Chatbots are actually changing how banks operates, banks are not just following trends, they are setting new rules for how customers interact with them, making 24/7 on-demand service the new normal. This proactively shapes the market environment rather than just reacting to it.

The results highlighted that anomaly detection stands out as the strongest predictor in the model with a P-value of 0.001, Beta = 0.342, t = 6.123, p < 0.001. This implied that there is a positive significant relationship between the two variables. This supported the views of the Resource-Based View theory which valued security and referred it as a strategic asset. Additionally, the results perfectly back up the Task-Technology Fit model (Goodhue & Thompson, 1995). The technology matches the demands of securing financial transactions better than anything else, and the strong regression numbers prove it.

The researchers tested fourth hypotheses on the relationship between predictive analysis, robo-advisors and financial literacy in Zimbabwean banks. The results showed a highly positive relationship between the variables. This relationship was supported by Beta = 0.272, t = 4.725, p< 0.001. This outcome intensely augments the Institutional Theory. By meaningfully assisting users in acquiring financial knowledge, these technologies are not just improving a service metric; they are acting as agents of normative isomorphism. They create and disseminate new standards of financial understanding, thereby building a more financially literate population. This positions banks as educators and institution-builders, leveraging AI to create long-term societal and economic value, which in turn reinforces their own legitimacy and stability.

CONCLUSION

The research demonstrated that AI technologies have delivered major enhancements to Zimbabwean banks through their capacity to improve credit access and customer service and transaction security and financial literacy development. Study participants showed positive attitudes toward AI-based credit scoring, chatbots and anomaly detection systems and predictive analytics because they considered AI technology to be a banking service innovation that enhanced operational efficiency and accuracy and customer satisfaction. The public requires better information about AI systems because their current knowledge prevents them from building trust in these systems, which need transparent and consistent decision-making processes. The inferential analysis results demonstrate that AI adoption functions as a strong predictor for financial service improvements because the regression and correlation analysis results showed positive effects on all key outcomes. The study shows that the AI credit scoring system successfully enhances credit access for borrowers while chatbot systems increase service utilization and anomaly detection enables maximum protection for users. The primary purpose of predictive analytics exists to enhance financial knowledge through its predictive capabilities. The research found its initial hypotheses correct by proving that AI serves as an essential force which drives both financial inclusion and digital banking success in the contemporary financial system. The research demonstrates that digital literacy limitations, internet access problems, high-cost barriers, and urban–rural accessibility differences create multiple structural and socio-technical obstacles which prevent the banking sector in Zimbabwe from achieving equal AI implementation. The organisation needs to resolve these issues so that all customer groups can fully benefit from AI development and participate in digital financial services which extends to customers from rural areas and low-income brackets.

RECOMMENDATIONS

Recommendations for practice

Strengthen Transparency in AI Decision-Making: Banks must develop basic customer explanations about their AI credit scoring systems which shows how data is used for credit decisions and offer customers ways to improve their credit status. The solution solves current transparency issues which people have reported while establishing trust in AI systems.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

Expand AI-Driven Financial Literacy Tools: Financial institutions should increase the deployment of predictive analytics and robo-advisory platforms targeted at low-income and first-time users. Financial literacy tools need to be developed through basic applications which utilize local languages and mobile banking systems to make them more accessible to users.

Improve Chatbot and Virtual Assistant Functionality: The existing banking chatbot systems need enhancements because they do not provide customers with accurate answers to their inquiries throughout the entire day. The implementation of voice-enabled features creates better accessibility for users who have reading difficulties while matching the reading habits identified in the customer study.

Enhance AI Security Mechanisms: Anomaly detection systems create a major security risk for banks which need to invest in fraud detection through real-time systems and biometric authentication and multi-layer verification systems to protect against cyber threats. Digital transaction security needs to maintain high customer confidence through regular security audits and customer alert systems.

Reduce Barriers to AI Use through Customer Training

The banking system requires financial institutions to develop digital literacy initiatives which should be presented through online platforms and physical community centres to educate customers on using AI banking systems. Digital skills development should be implemented in rural regions because it serves as the main obstacle for people who want to access digital services.

Policy Recommendations (For Government and Regulators)

Develop a National AI Governance Framework for Banking: The Reserve Bank of Zimbabwe together with other regulatory bodies must create specific rules which banks need to follow when adopting AI technology. The regulations need to establish rules for four major areas which include algorithm transparency and data protection and fairness and accountability to ensure proper ethical development of AI systems.

Invest in Digital Infrastructure for Rural Financial Inclusion: The government needs to focus on three main areas which include enhancing internet access and developing better bandwidth systems and decreasing data expenses for rural populations. The study shows that public-private partnerships can be used to build telecom networks which brings services to remote areas.

Provide Incentives for Banks to Adopt Inclusive AI Technologies: The government should provide banks with tax reductions and research funding and innovation testing facilities so banks can create artificial intelligence systems that benefit people who experience financial difficulties particularly women and young people and small business owners.

Strengthen Cybersecurity Regulations: Policymakers need to establish mandatory cybersecurity regulations for AI-enabled banking systems which should include continuous auditing processes and breach reporting systems and resilience testing procedures to combat digital fraud and build public trust in digital banking.

Promote Affordable Access Through Policy Interventions: The government must create policies which reduce mobile data costs and provide free access to essential banking services because financial services need to be available to all people who want to use AI technology for improved financial services.

Recommendations for Future Research

Research about AI usage needs to study how different age groups, gender, income brackets, rural and urban residents adopt AI technology because it creates different effects which need specific solutions. The researchers need to study whether AI-based credit scoring systems make borrowers better at repaying their loans while their credit score improves and the system operates to decrease default rates through time. Additionally, future research could incorporate perspectives from banking customers to complement the institutional insights obtained from banking institutions.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue II, February 2026

Limitations of the Study

Researchers found that their study results didn't apply to all individuals in Zimbabwe because multiple limitations restricted output generalisation. The research used a cross-sectional self-reported survey which introduced response biases. The study included banking customers from selected urban and peri-urban areas which created an incomplete picture of financial exclusion and digital access problems that exist in rural territories. The research studied credit scoring chatbots, anomaly detection, and predictive analytics while excluding all other available technologies that include biometric verification and block chain-based systems because those technologies also affect financial inclusion. The banks implemented AI technology through various methods which made it difficult for researchers to track all AI system changes because these systems continuously develop new technological capabilities. The study's limitations force researchers to limit their findings to specific financial institutions and demographic groups who exist in Zimbabwe.

Declaration of Conflict of Interest

The authors declared that there were no conflicts of interest associated with this study, and no external organisation, institution, or funding body provided sponsorship or financial support for the research. The authors conducted all data collection activities, analysis activities and reporting activities which they used to present their study results while maintaining complete independent control over their research study.

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