



ARTIFICIAL INTELLIGENCE AND MOBILE BANKING: THE SOLUTION TO INFORMATION ASYMMETRY IN LENDING

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ABSTRACT

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This paper examines the role of artificial intelligence (AI) and mobile banking in reducing information asymmetry within lending markets and its implications for financial inclusion and credit market efficiency. Traditional lending has long been constrained by adverse selection and moral hazard arising from limited borrower information, resulting in credit rationing and financial exclusion, particularly among low-income households, small businesses, and the informal sector. Drawing on recent empirical and theoretical literature, the paper demonstrates that AI-powered credit scoring and mobile banking platforms have fundamentally transformed credit assessment by leveraging alternative data, including mobile money transactions, digital payment histories, smartphone usage, and other digital footprints. The convergence of mobile banking infrastructure and AI-powered algorithms enable lenders to generate more accurate and dynamic assessments of borrower creditworthiness while lowering screening costs and expanding access to finance. The review further highlights improvements in operational efficiency, credit risk management, and competition within financial markets resulting from AI-enabled lending systems. However, these advances introduce critical systemic challenges relating to data privacy, algorithmic bias, cybersecurity, the digital divide, and evolving regulatory requirements that risk exacerbating inequality. The paper concludes that while AI and mobile banking significantly mitigate information asymmetry and promote inclusive finance, their long-term success depends on robust governance frameworks, strengthened cybersecurity, and collaborative policies that balance technological innovation with consumer protection, transparency, and financial stability.

KEYWORDS: information asymmetry, artificial intelligence, mobile banking, financial inclusion, algorithmic bias, credit markets, adverse selection, moral hazard.

INTRODUCTION

Background

Lending is the backbone of modern economies. Lending enables businesses to invest, households to consume, and the overall survival and growth of the economy. Credit markets channel funds from surplus units to deficit agents through processing of information to ascertain the credibility of borrowers. Accurate information is crucial for capital allocation as it determines the repayment probability, applicable rates, and the risk of default on every borrower. However, lack of information hinders smooth operations which often lead to credit rationing and inflated risk premiums.

Information acquisition and processing remains the primary function of financial intermediaries in enhancing access to credit. Limited access pushes banks to employ stringent requirements such as formal documentation and higher collateral for businesses to secure credit (Stein et al., 2013; Omede, 2020; Ashraf et al., 2025). This limitation especially in emerging economies has been a significant contributor to

financial exclusion of small businesses and low-income persons. Accordingly, the scale of financial exclusion remains substantial. According to Adelaja et al. (2024) over 1.4 billion adults globally remain unbanked with limited access to conventional financial services. Among these, women, youth, low-income households, and rural populations are the most marginalized in emerging markets.

In response to this market failure, the 21st century has seen a significant rise in financial technologies. Thanks to the ubiquitous distribution of smartphones and the maturity of artificial intelligence, most of the unbanked and underrepresented populations can have access to banking services. In Africa, over 84% of adults own and have access to mobile phones (Malephane, 2022). In Kenya, mobile phone penetration has become integral to addressing financial exclusion. Mobile money and banking platforms provide digital financial services which bypass the conventional banking requirements (Misati et al., 2024). Concurrently, Artificial Intelligence (AI) algorithms have given financial institutions

the computational power to ingest, clean, and analyze high-dimensional, unstructured data streams in real time (Chen et al., 2025; Taofeek, 2024). Together, these technologies have established a completely new paradigm for risk assessment, shifting the focal point of underwriting away from historic credit bureau data toward dynamic, non-traditional digital footprints.

Consequently, Artificial Intelligence (AI) and mobile banking fundamentally mitigate information asymmetry in lending by converting alternative digital footprints into highly predictive credit insights, thereby reducing the classical market failures of adverse selection and moral hazard. However, while this technological shift successfully democratizes financial inclusion, it simultaneously introduces severe systemic risks which replace traditional information gaps with complex structural challenges. Therefore, the aim of the paper is to examine the role of Artificial Intelligence (AI) and mobile banking in changing information asymmetry in lending

Information Asymmetry

The foundational economic framework governing credit markets is rooted in the economics of imperfect information. This paradigm challenges classical financial assumptions that buyers and sellers possess symmetric market knowledge. In his seminal paper Akerlof (1978) posited that when buyers cannot distinguish between high-quality and low-quality goods, prices drop to an average baseline, driving high-quality sellers out of the market. As such, information asymmetry occurs where one party holds more or better information than the other side. According to Stiglitz and Weiss (1981) information asymmetry as the source of market failure originates from heavily skewed information. The imbalance affects the efficiency of financial markets since decisions are made based on unequal access to relevant information. Particularly, borrowers, lenders, investors, and firms rarely possess identical information regarding the quality of investment opportunities, creditworthiness, or the future financial performance (Akerlof, 1978). Borrowers generally possess superior information about their financial condition, repayment capacity, and intended use of borrowed funds compared to lenders. Because lenders cannot perfectly observe these characteristics, they face uncertainty when making lending decisions.

Information asymmetry gives rise to adverse selection and moral hazard problems. Adverse selection occurs before a financial contract is signed, when lenders cannot accurately distinguish between low-risk and high-risk borrowers (Stiglitz & Weiss, 1981). As a result, riskier borrowers are more likely to seek loans, increasing the likelihood of default. Moral hazard arises after the loan has been granted when borrowers engage in activities that increase the probability of default because lenders cannot continuously monitor their behavior (Stiglitz & Weiss, 1981). For instance, borrowers may invest loan proceeds in high-risk ventures or diverting funds from their intended purposes. As a result, lenders may unintentionally exclude creditworthy borrowers from accessing finance (Akerlof, 1978). According to Stiglitz and Weiss (1981), this information gap leads to credit rationing, where financial institutions deliberately restrict lending even when borrowers are willing to pay higher interest rates. Rather than increasing loan prices

indefinitely, banks may prefer limiting credit because higher interest rates tend to attract riskier borrowers and encourage existing borrowers to undertake riskier investments.

Credit markets addresses these frictions through strict collateral requirements, credit rationing, and conservative underwriting which often marginalizes borrowers that lack formal financial history. These mechanisms, although essential for mitigating default risk often enhance the exclusion of credit to underserved businesses and populations. Therefore, information asymmetry inadvertently leads to financial exclusion of small businesses and low-income groups whose information is difficult to acquire, analyses, and integrate in conventional credit processing.

Mobile Banking and Information Asymmetry

The proliferation of mobile banking infrastructure in the 21st century has altered information processing and the operations of credit markets. Mobile banking infrastructure are a digital touchpoint that bring banking services directly closer to under-banked and unbanked businesses and individuals (Adelaja et al., 2024). Conventionally, banks gathered data on customers through regular visits and assessment of financial records to ascertain suitability for loan uptake (Berg et al., 2020). However, mobile banking has overhauled this conventional approach. Today, mobile phones provide lenders with continuous dynamic data captured in real-time from consumers. Mobile banking allows users to conduct financial transactions using mobile money and digital wallets. Credit markets are leveraging this online presence to monitor cashflow velocity, volume, and consistency of transactions (International Finance Corporation [IFC], 2026). These predictive models analyze cashflows from numerous individual transactions and correlate them to business stability regardless of the business setting.

Secondly, telecommunication data is a powerful mirror into user's individual lifestyle and financial status. Information on cellular data consumption, airtime use, and social networks is leveraged to assess the consistency status of potential customers in accessing lending (IFC, 2026). This otherwise 'valueless' information is useful alternative data for profiling customers. Additionally, banks also leverage behavioral data from smartphones. Device metadata, app use, e-commerce habits, and social media interactions all form alternative data that in analyzed and standardized to form a customer profile (Xu, 2025). Such subtle traits reveal consumer behavior necessary for informing financing decisions.

Primarily, mobile banking improves the capacity of credit markets to construct a reliable financial identity based on alternative data collected from the digital space. With over 1.4 billion adults remaining unbanked or underbanked alternative data is positioned as the best option to verify economic status and suitability for credit lending. According to IFC (2026) the lifestyle data is processed using advanced algorithmic models to form an objective indicator of creditworthiness. Therefore, mobile banking data expands information access which enables financial systems to accurately credit score clients and improve financial inclusion.

Artificial Intelligence and Information Asymmetry

Over the years, Artificial Intelligence (AI) have emerged as better alternatives to conventional regression models used in credit scoring. With the arrival of financial technology (FinTech), financial institutions have prioritized data-centric processing to overcome the traditional credit scoring systems (Chen et al., 2025). According to Theuri and Olukuru (2022), Artificial Intelligence (AI) is the ability of machines to reason, perceive, interact, learn, and exercise creativity in a similar manner to human beings. These Artificial Intelligence (AI) systems have advanced machine learning (ML) algorithms, natural language processing (NLP), and predictive analytics that provide banks and alternative lenders with unprecedented computational power (Taofeek, 2024). The highly scalable and algorithm driven financial services have enhanced financial service delivery to previously unreachable populations and businesses.

The algorithms evaluate high-dimensional and non-linear relationships in data that would have otherwise been overlooked under conventional methods. According to Mhlanga (2021), Artificial Intelligence (AI) and machine learning architectures are set such that they extract and interpret multiple disparate variables simultaneously. For instance, mobile phone usage data is combined with social media access, call data, and mobile banking services to form a standard credit score that can support lending. Thus, using Artificial Intelligence (AI), unstructured and random mobile data is leveraged to form standardized predictive indicators of risk (Chen et al., 2025).

Lenders often deploy sophisticated algorithmic ensembles to mitigate pre-contractual adverse selection. For instance, random forests, gradient boosting machines, and deep neural networks are integrated to support predictive accuracy by reducing overfitting and uncovering complex hidden patterns within device metadata (Schmitt, 2024). These advanced systems detect fraudulent intents and hidden financial distress that often are missed in legacy bureau metrics. These alternative data models outperform conventional scores in predicting defaults among thin-file borrowers, thereby reducing adverse selection and enabling broader credit access without proportionally increasing risk (Chen et al., 2025). This data revolution mitigates information asymmetry and fosters greater financial inclusion by lowering screening costs and enabling scalable, personalized lending.

Artificial Intelligence (AI) also mitigates against post-contractual moral hazard. Since the systems are predictive and proactive, risk management is a continuous active monitoring mechanism that adjust consumer rating based on real-time data (Di Maggio & Yao, 2021). For instance, if a mobile banking user's data shows a consistent drop in mobile money inflows and significant uptake of loans from other providers, it can flag down the changes as a signal of potential high risk of default. Thus, combining call data records (CDR) and non-CDR data can achieve up to 89% accuracy in classifying and predicting credit risk (Razavi & Elbahnasawy, 2025). Such proactive outcomes limit the risk of allocating more funds to risky customers. Importantly, Artificial Intelligence (AI) is used to deploy automated micro-interventions to support risky

customers in making payments. Instead of punitive collection efforts after default, Artificial Intelligence (AI) systems generate automated nudges that provide regular reminders tailored around when the consumer gets cash inflows (Mhlanga, 2021). The adaptive structuring aligns repayment schedules with financial capabilities that proactively engage borrowers to reduce the rate of default.

Macroeconomic and Market Impacts of Artificial Intelligence (AI) and Mobile Banking in Lending Financial Inclusion

The convergence of Artificial Intelligence (AI) and mobile banking infrastructure has generated market level and macroeconomic effects in reshaping access to credit, operational efficiency and competition in the financial sector. Artificial Intelligence (AI) and mobile banking has enhanced financial inclusion and credit expansion for SMEs and the informal sector which has historically been excluded from mainstream banking services.

Mobile banking and Artificial Intelligence (AI) are powerful technologies for advancing financial inclusion. They improve access to credit for individuals and businesses that were previously marginalized from the formal financial system. Conventional lending relies on collateral and formal credit histories, excluding many low-income households, women, rural populations, and small enterprises (Mhlanga, 2021). Banks collect hard and soft information which is used to determine access to credit by businesses and individuals. Hard information is often standardized and numerical data transmitted through impersonal ways whereas soft information includes unverifiable and qualitative data that is often contextual (Piao et al., 2024). The banking system lacks reliable hard information from small businesses that can be leveraged to assess borrower's risk potential. While the information is available the cost of collecting and analyzing such information is often too high that most banks are disincentivized from accessing the information (Adelaja et al., 2024). With the advent of novel technologies such as Artificial Intelligence (AI), now banks can easily seek soft information from such businesses.

Artificial Intelligence (AI) utilizes alternative data such as mobile money transactions, utility payments, e-commerce activities, and digital payment records to evaluate creditworthiness (Jagtiani & Lemieux, 2019; Li et al., 2024). Mobile banking further supports inclusion by enabling individuals to build digital financial identities through everyday financial transactions (Siano et al., 2020). Studies demonstrate that AI-powered credit scoring significantly expands access to responsible credit without increasing default rates (Taofeek, 2025; Piao et al., 2024). In Sub-Saharan Africa, mobile banking has played a particularly important role in integrating previously unbanked populations into formal financial markets (Asongu et al., 2021; Momany & Tombe, 2026). Consequently, Artificial Intelligence (AI) and mobile banking reduces information asymmetry and promotes equitable access to financial services which support inclusive economic growth.

Leveraging alternative data from mobile transaction and digital footprints provides Artificial Intelligence (AI) with vast data

enabling creditworthiness evaluation (Gambacorta et al., 2025). This overcomes the limitations of credit bureau scores and collateral requirements thus democratizing credit access. As such, it has facilitated enhanced capital allocation to underserved segments supporting business growth, job creation, and poverty reduction especially in developing economies (Theuri & Olukuru, 2022). Recent studies reveal that AI-enabled systems increase loan approval rate for underserved populations and lower default rates thereby expanding the overall credit supply without expanding default risk (Taofoek, 2025; Chen et al., 2025; Li et al., 2024). This is made simple by mobile banking services which avail continuous data for proactive profiling of financial identities from the informal sector based on their telecommunication interaction and behavior.

Historically, credit allocation favored well-capitalized formal enterprises. Micro, Small and Medium Size Enterprises (MSMEs) and informal sector workers lacking fiscal assets for collateral or had data for banking assessment which expose them to credit rationing from risk averse commercial lenders (IFC, 2026). With alternative data on the rise, new credit scoring systems utilize everyday mobile phone interactions to form verifiable financial records that support lending. In emerging markets like Kenya, collateral-free, digital micro-loans give informal retailers and underbanked individuals access to reliable working capital (Momanyi & Tombe, 2026). Thus, the advent of Artificial Intelligence (AI) and mobile banking have enabled transformation of non-traditional digital data into measurable credit profile which stimulates entrepreneurship and foster job creation. Thus, driving broader macroeconomic growth through financial inclusion from the bottom up.

Market Efficiency

At the microeconomic level, the integration of Artificial Intelligence (AI) into mobile banking systems has improved transactional and operational efficiency. Traditionally, loan origination required extensive documentation and verification before underwriting which could take time and higher costs. This discouraged many small-holder borrowers. However, Artificial Intelligence (AI) has reduced the cost of collecting data on small businesses. Piao et al. (2024) content that Artificial Intelligence (AI) lowers the cost of integrating the data into everyday bank's decision-making process by supporting data standardization and analysis. Such alternative data is integrated in the loan approval database and processes which enhance access to loans to small businesses that would otherwise have been sidelined.

With Artificial Intelligence (AI) systems and mobile banking, there is near-instantaneous approvals thanks to automated data analysis, risk assessment, and decision-making (Garvey et al. 2026). This level of acceleration has reduced operational expenses by up to 40% for some processes and enhanced individualized risk-based pricing that reflects the needs of different consumers (Mhlanga, 2020; Momanyi & Tombe, 2026; IFC, 2026). This precise risk differentiation stabilizes default rates and ensure capital is priced efficiently across the economy. Consequently, these technologies have led to a more responsive credit market characterized by reduced information friction and

improved capital allocation to productive economic activities. Faster credit access support timely investment and consumption smoothing which are vital for macroeconomic stability and growth Today, mobile banking enables customers to submit loan applications and receive approvals almost instantly courtesy of AI-powered systems that automate data collection, evaluation, fraud detection, and loan approval which reduce processing time and operational expenses (Chen et al., 2025; Theuri & Olukuru, 2021; IFC, 2026). Automated decision-making also reduces human errors and improve consistency in credit valuation (Schmitt, 2024). Artificial Intelligence (AI) also allows lenders to process large volumes of loan applications simultaneously and with predictive accuracy (Garvey et al., 2026). These improvements enhance customer experience, increase institutional productivity at lower transaction costs enabling credit markets to serve previously underserved market segments.

Competition

Artificial Intelligence (AI) and mobile banking services have reshaped the competitive landscape of the financial sector. For decades, established commercial banks enjoyed monopoly on credit distribution due to their numerous branches and access to credit bureau information. At the moment Artificial Intelligence (AI) platforms and mobile banking interfaces have enabled FinTech innovations to disintermediate traditional financial institutions (Theuri and Olukuru, 2022). According to Momanyi and Tombe (2026), non-bank tech providers have embedded friction-free credit products in e-commerce market places to capture the vast unbanked market niches that have long been ignored by legacy lenders.

Additionally, many traditional commercial banks have been forced to adapt to the market demands and adopt a more integrated digital-first relationship building based on data from mobile banking. With increasing competition, banks have resorted to Artificial Intelligence (AI) as an indispensable tool for achieving enhancing customer engagement and service delivery. Per Theuri and Olukuru (2022), Artificial Intelligence (AI) is estimated to enhance cost savings to banks and financial institutions by up to \$1 trillion by 2030. Currently, Artificial Intelligence (AI) is used in all facets of banking operations such as customer service, back-office operations, risk management, and front-line businesses. Importantly, collaboration between banks, FinTech firms, and telecoms is emerging as a vibrant model for achieving financial inclusion.

Challenges and Policy Implications of Artificial Intelligence (AI) and Mobile Banking in Lending Data Privacy

Artificial Intelligence (AI) and mobile banking raise significant concerns regarding data privacy. Credit assessment depends on extensive personal and behavioral information. AI-driven lending platforms collect alternative data from mobile banking transactions, smartphone usage, social interactions, digital payments, and online activities to evaluate borrower creditworthiness (Razavi & Elbahnasawy, 2025). While these data improve credit assessment accuracy, they also expose consumers to risks associated with unauthorized data collection, misuse of personal information, and inadequate informed consent (Xu, 2025; Theuri & Olukuru, 2022). Bauer

et al. (2025) argue that opaque Artificial Intelligence (AI) models often prevent consumers from understanding how their personal information influences lending decisions, limiting consumer agency. Furthermore, differences in national data protection regulations create uncertainty regarding data ownership and cross-border information sharing (Garvey et al., 2026).

Promoting responsible Artificial Intelligence (AI) adoption in financial services requires adaptable data privacy frameworks. The policy makers should establish comprehensive legal frameworks governing the collection, sharing, and use of alternative data to protect consumer privacy while promoting innovation (Garvey et al., 2026). Data protection laws should require informed consent, transparency, and accountability in AI-driven credit decisions. Secondly, governments should develop regulatory standards for explainable Artificial Intelligence (AI) to ensure that automated lending decisions are transparent, non-discriminatory, and subject to human oversight (Bauer et al., 2025). Furthermore, regulators should promote collaboration among financial institutions, fintech firms, and telecommunications providers to facilitate secure data sharing while strengthening cybersecurity frameworks. Such policy interventions would foster innovation, consumer confidence, and sustainable financial sector development.

Algorithmic Bias

Algorithmic bias is among the most significant ethical challenges associated with AI-driven lending. Machine learning models are trained using historical data that may contain existing social, economic, or demographic biases, resulting in discriminatory credit decisions (Ashta & Herrmann, 2021). If biased datasets are used during model development, Artificial Intelligence (AI) systems may unfairly disadvantage women, minority groups, rural populations, or individuals with limited digital footprints despite their actual repayment capacity. Bauer et al. (2025) emphasize that insufficient explainability makes it difficult for borrowers to identify or challenge unfair lending decisions, thereby reducing accountability. Schmitt (2024) argues that explainable Artificial Intelligence (AI) frameworks can mitigate algorithmic bias by increasing transparency regarding the variables influencing credit decisions. Additionally, Li et al. (2024) recommends continuous monitoring and validation of Artificial Intelligence (AI) models to ensure fairness across different borrower groups.

Addressing algorithmic bias is essential for promoting equitable financial inclusion. Financial institutions should strategically integrate Artificial Intelligence (AI) and mobile banking technologies into their lending operations while maintaining strong governance and ethical standards. Banks should adopt AI-powered credit scoring models that combine traditional financial information with alternative data such as mobile banking transactions and digital payment histories to improve credit risk assessment and reduce information asymmetry (Jagtiani & Lemieux, 2019; Li et al., 2024). However, Artificial Intelligence (AI) implementation should be accompanied by explainable Artificial Intelligence (AI) frameworks that enable loan officers, regulators, and borrowers to understand the rationale behind automated lending decisions (Schmitt, 2024). Financial institutions should also establish

robust model validation procedures to monitor algorithmic bias and ensure equitable treatment of all customer segments (Bauer et al., 2025). Firms should design credit scoring models that utilize alternative data responsibly, ensuring that predictive accuracy does not come at the expense of fairness, transparency, or privacy (Ashta & Herrmann, 2021). In addition, combining Artificial Intelligence (AI) capabilities with relationship banking can further improve lending quality, particularly for SMEs and borrowers with complex financial profiles (Gambacorta et al., 2025). Borrowers should actively build positive digital financial profiles by using mobile banking services responsibly, making timely loan repayments, maintaining consistent savings, and utilizing digital payment platforms regularly, as these activities strengthen AI-based credit assessments (Chen et al., 2025). Fintech companies should prioritize responsible innovation by developing AI-powered lending solutions that enhance financial inclusion while safeguarding consumer rights.

Cybersecurity Risk

The growing reliance on Artificial Intelligence (AI) and mobile banking has increased cybersecurity risks within digital lending ecosystems. AI-enabled lending platforms process large volumes of sensitive customer information, including financial records, personal identification data, mobile transactions, and behavioral information, making them attractive targets for cybercriminals (Garvey et al., 2026). Potential threats include identity theft, phishing attacks, ransomware, account takeovers, data breaches, and unauthorized access to financial systems. Mobile banking applications may also be vulnerable to malware and SIM-swap fraud, particularly in regions with limited cybersecurity awareness (Theuri & Olukuru, 2022). Compromised customer information not only exposes borrowers to financial losses but also undermines confidence in digital financial services. Ashta and Herrmann (2021) argue that financial institutions must strengthen cybersecurity through encryption, multi-factor authentication, continuous monitoring, and AI-based fraud detection systems.

Effective cybersecurity governance is needed to protect customer data and promote sustainable AI-enabled lending platforms. Continuous investment in cybersecurity, staff training, and digital infrastructure is essential to safeguard customer information and maintain operational resilience (Garvey et al., 2026). Fintech companies should strengthen cybersecurity measures, including encryption, multi-factor authentication, and real-time fraud detection systems, to protect sensitive customer information (Garvey et al., 2026). Collaboration with banks, telecommunications companies, and regulators can facilitate secure data sharing and interoperability across digital financial ecosystems. Additionally, fintech firms should invest in consumer education initiatives that improve digital and financial literacy, enabling users to make informed borrowing decisions and responsibly utilize digital financial services (Taofoek, 2025). These measures will support sustainable innovation and broaden access to credit.

Digital Divide

The benefits of Artificial Intelligence (AI) and mobile banking in financial inclusion are unevenly distributed due to persistent digital inequalities. Access to AI-enabled financial services

depends on smartphone ownership, internet connectivity, electricity, and digital literacy, all of which remain limited in many developing economies (Falaiye et al., 2024). Rural communities, older populations, and low-income households often face difficulties accessing digital financial platforms, thereby limiting their ability to benefit from AI-based lending innovations (Piao et al., 2024; Asongu et al., 2021). Furthermore, Artificial Intelligence (AI) credit scoring systems rely heavily on digital transaction histories, placing individuals with limited digital engagement at a disadvantage (Mhlanga, 2021). Siano et al. (2020) observe that inadequate telecommunications infrastructure and low digital literacy continue to constrain mobile banking adoption across parts of Sub-Saharan Africa.

Consequently, addressing the digital divide requires investments in digital infrastructure to ensure mobile banking and AI-driven financial services benefit all segments of society. Investments in digital infrastructure, including affordable internet access and reliable mobile networks, are necessary to reduce the digital divide and expand financial inclusion (Falaiye et al., 2024). Consumers also have an important role in ensuring that AI-enabled lending contributes to sustainable financial inclusion. Consumers should also improve their digital and financial literacy to better understand AI-driven lending processes, digital financial products, and the implications of sharing personal data (Falaiye et al., 2024). Awareness of data privacy rights is essential, enabling consumers to provide informed consent and safeguard their personal information from misuse (Xu, 2025). Furthermore, borrowers should monitor their digital financial records and promptly report suspicious transactions to minimize cybersecurity risks.

Regulatory Challenges

Existing financial regulations lag behind financial technological innovation. AI-based credit scoring raises legal issues concerning transparency, accountability, explain ability, consumer protection, and liability for automated decisions (Bauer et al., 2025). Regulators must also address emerging concerns regarding algorithmic fairness, cross-border data transfers, cybersecurity, and ethical use of alternative data (Garvey et al., 2026). Ashta and Herrmann (2021) argue that inadequate regulatory oversight may undermine public confidence and expose consumers to discriminatory or opaque lending practices. International organizations increasingly advocate for governance frameworks that balance innovation with financial stability and consumer protection (Garvey et al., 2026). Moreover, harmonized standards for Artificial Intelligence (AI) governance are necessary to promote responsible innovation while encouraging competition within digital financial markets. Effective regulation will therefore be critical in ensuring that AI-driven lending remains transparent, inclusive, secure, and ethically accountable.

CONCLUSION

The integration of Artificial Intelligence (AI) and mobile banking has fundamentally transformed information asymmetry in lending, replacing traditional informational gaps with a more complex landscape of algorithmic asymmetry. These technologies have demonstrably reduced adverse

selection and moral hazard through predictive modeling of alternative data, enabling lenders to extend credit to previously excluded populations. The macroeconomic impacts are significant: enhanced financial inclusion for SMEs and informal workers, dramatic improvements in market efficiency through reduced processing times and operational costs, and intensified competition that has disrupted traditional banking monopolies. However, this transformation is not without substantial risks. Algorithmic bias perpetuates historical discrimination, data privacy concerns expose consumers to surveillance and misuse, cybersecurity vulnerabilities threaten financial stability, and digital divides ensure that the benefits remain unevenly distributed. The net effect of these technologies on financial inclusion depends critically on regulatory frameworks that balance innovation with consumer protection. Going forward, policy makers must prioritize regulatory and data governance frameworks that promote transparency, accountability, and consumer protection. Financial institutions and fintech companies should adopt explainable and ethical Artificial Intelligence (AI) systems and strengthen cybersecurity infrastructure. Furthermore, investments in digital infrastructure and financial literacy are essential to ensure that Artificial Intelligence (AI) and mobile banking enhance equitable economic development rather than a furthering new forms of exclusion.

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