

A Systematic Literature Review of Digital Payment in Ethiopia: Challenges, User Satisfaction, and Socio-Economic Impact

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Abstract:

This systematic literature review examines the challenges, user satisfaction determinants, and socio-economic impact of digital payments in Ethiopia. Following PRISMA guidelines, a comprehensive search of Scopus, Web of Science, Google Scholar, the Addis Ababa University Institutional Repository, and African Journals Online was conducted, covering literature published between 2015 and 2026. The review synthesises findings from peer-reviewed journal articles, institutional reports, and postgraduate theses, employing the Technology Acceptance Model and Diffusion of Innovation theory as analytical frameworks. The findings reveal that while Ethiopia's digital payment ecosystem has experienced remarkable growth, exemplified by Telebirr's 46.6 million users and digital transactions exceeding 18 trillion Birr annually, persistent challenges impede the transition from access to meaningful usage. Five interconnected categories of barriers are identified: infrastructure deficits, trust and security concerns, economic and affordability barriers, organizational and institutional weaknesses, and socio-cultural factors. Trust emerges as the critical mediating factor between service provision and user satisfaction, serving as the primary adoption driver. User satisfaction is determined by trust, convenience, speed, security, cost, and user experience, with integrated theoretical models demonstrating strong predictive power ($R^2 = 0.675$). Socio-economic benefits are evident across financial inclusion, economic formalization, social empowerment, and enterprise development, though benefits remain unevenly distributed. The National Bank of Ethiopia's Digital Payment Strategy 2026–2030 represents a necessary policy reorientation toward trust-building and active usage. Recommendations include strengthening digital infrastructure, reducing transaction costs, enhancing consumer protection, and prioritizing gender-responsive innovation.

Keywords:

Digital payments; financial inclusion; trust; user satisfaction; Ethiopia

I. Introduction

1.1 Background and Context

The global financial landscape has undergone a profound transformation over the past decade, driven by the rapid proliferation of digital financial services and mobile payment technologies. Ethiopia, Africa's second-most populous nation with a population exceeding 126 million, has emerged as one of the continent's most dynamic frontiers for digital payment innovation. The country's digital payment ecosystem has experienced unprecedented growth following the liberalization of the telecommunications sector in 2021, a policy shift that fundamentally restructured the competitive dynamics of the financial technology landscape (Gonfa, 2026).

The launch of Telebirr by the state-owned Ethio Telecom in May 2021 marked a pivotal moment in Ethiopia's digital payment journey. Supported by Huawei's products and services,

the platform was developed and launched within just five months, representing Ethiopia's first operator-led mobile wallet brand (Huawei, 2025). By May 2024, the mobile money platform had amassed over 46.6 million users, reflecting the accelerating adoption of digital financial technologies across the country (Besrat Nigussie, 2024). By 2025, this figure had grown substantially, with Telebirr serving 47.5 million users and 73% of transactions occurring during the most recent fiscal year alone (Kenyan Wallstreet, 2026). The platform's growth trajectory has been remarkable, with cumulative transactions through Telebirr exceeding 3.25 trillion Birr as of November 2024.

The entry of Safaricom's M-Pesa into the Ethiopian market in September 2022, followed by its mobile money operation licence in May 2023, further intensified competition and expanded consumer choice. M-Pesa has since launched telco-agnostic digital financial services under the brand M-Pesa LeHulum, enabling users to send and receive money, pay merchants and bills, buy airtime, and make payments via QR codes (Mobile Europe, 2025). The platform has also completed integration with EthSwitch, Ethiopia's national payment network, enabling full interoperability across 15 banks and mobile wallets (M-PESA Ethiopia, 2025). This telecom liberalisation has catalysed a digital finance revolution, with over 3,000 digital firms licensed by the Ethiopian Communications Authority since 2022, creating thousands of new jobs and fostering digital entrepreneurship.

The scale of Ethiopia's digital payment transformation is staggering. Digital financing reached 18 trillion Birr, equivalent to three times the country's GDP, through a mix of mobile transfers, digital loans, merchant payments, and government transactions (Addisfortune, 2025). The number of digital accounts has skyrocketed, with over 128 million mobile-money accounts active in Ethiopia. The Commercial Bank of Ethiopia has emerged as a dominant player, processing more than 22.24 trillion Birr through 3.48 billion digital payment transactions. These developments have positioned Ethiopia as one of the fastest-growing digital finance markets in Africa (Gonfa, 2026).

Research on digital payment adoption in Ethiopia has grown in parallel with these developments. Early studies examined the opportunities and challenges of the CBE-Birr mobile money service, finding that ease of use, perceived usefulness, and perceived risk have a positive relationship with mobile money service adoption (Yeshitla, 2019). Subsequent research integrated the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB), identifying perceived usefulness, perceived ease of use, perceived risk, prior internet knowledge, intention to use, and convenience as direct and indirect determinants of consumer adoption of digital money services (Wenda, 2017). More recent studies have focused on Telebirr, employing TAM with variables such as perceived usefulness, perceived ease of use, perceived risk, prior technology knowledge, and awareness (Atalay, 2022). Kibru and Tefera (2023) found that perceived trust has a highly significant influence on Telebirr adoption compared to other independent variables, while perceived risk negatively affects adoption.

1.2 Problem Statement

Despite the impressive growth in digital payment infrastructure and account creation, Ethiopia faces a persistent and troubling paradox: access has not translated into meaningful usage. As Addis Standard (2026) observes, "Ethiopia is creating accounts faster than it is building the trust institutions that make digital dependence rational, effective consumer protection, accessible dispute resolution, meaningful digital literacy, and reliable systems." This represents not a benign adoption lag but a structural warning, akin to "stress fractures in a

load-bearing structure before it collapses" (Addis Standard, 2026).

Cash remains an overwhelmingly dominant payment method for the population, presenting a sharp contrast to other markets in the region, including Kenya, where non-cash payments have gained a firm foothold. Although the country boasts over 280 million bank accounts, nearly triple its population, most remain dormant. Digital adoption is growing, but this growth lags not for lack of technology but for want of affordability, trust, and utility. The National Bank of Ethiopia is racing to digitise an economy still wedded to cash. Consumer research reveals a strong appetite for digital payments, driven by increasing mobile penetration and a desire for faster, more convenient transactions. However, cash remains dominant due to lingering concerns about trust, network reliability, and limited merchant acceptance (Addisfortune, 2025).

The gap between registration and active usage is stark. Despite massive growth in account ownership, only 21% of adults made a digital payment in the past year (National Bank of Ethiopia, 2025). A primary concern is the widening trust deficit that prevents millions from actively using digital financial services. As Addisfortune (2025) reports, "businesses' distrust is rising amid payment disputes, digital scams, and license revocations." High transaction fees discourage low-value payments, siloed platforms limit interoperability, and cybersecurity challenges leave users exposed. The shift in Ethiopia's digital payments agenda reflects a fundamental policy reorientation, "from access to trust" (SBS, 2025). This recognition that expanding access alone is insufficient has become the cornerstone of the National Bank of Ethiopia's new National Digital Payments Strategy (NDPS) 2026–2030, which aims to boost active usage to 60% by 2030 (National Bank of Ethiopia, 2025).

II. Research Methods

2.1 Review Approach and Rationale

This study adopts a systematic literature review (SLR) approach to comprehensively examine the existing body of knowledge on digital payment adoption, challenges, user satisfaction, and socio-economic impact in Ethiopia. The systematic review methodology was selected for several compelling reasons that align with the objectives of this study.

First, systematic reviews are designed to minimise bias in the selection and synthesis of literature through a transparent, replicable, and rigorous process. Unlike traditional narrative reviews, which may be susceptible to selective citation and subjective interpretation, systematic reviews follow a pre-defined protocol that enhances the credibility and trustworthiness of the findings. As Columbia University (n.d.) notes, systematic reviews require "planning in advance the criteria that you'll use to survey the literature on your topic" to "reduce bias in the selection of articles, and also so readers can trust that your review is both comprehensive and up-to-date."

Second, the systematic approach is particularly appropriate given the growing volume of empirical research on digital financial services in Ethiopia. The rapid expansion of mobile money platforms such as Telebirr and M-Pesa, alongside the National Bank of Ethiopia's policy reforms, has generated a substantial body of scholarly work that warrants systematic consolidation. Gonfa (2026), in a systematic review of financial technology and financial inclusion in Ethiopia, demonstrated the value of this approach in synthesising fragmented evidence and identifying consistent patterns across studies. Similarly, Ngusa (2026) employed a

systematic review methodology to examine barriers to women's access to digital financial services in lower-middle-income countries, including Ethiopia.

Third, the systematic review methodology enables the integration of multiple theoretical perspectives, particularly the Technology Acceptance Model (TAM) and Diffusion of Innovation (DOI) theory, which have been widely applied in digital payment research. TAM, originally developed by Davis (1989), posits that perceived usefulness and perceived ease of use are primary determinants of technology acceptance. DOI theory, articulated by Rogers (1995), explains how, why, and at what rate new ideas and technology spread through cultures. The systematic synthesis of studies employing these frameworks allows for a nuanced understanding of the determinants of digital payment adoption in the Ethiopian context.

Fourth, the systematic review approach facilitates the identification of research gaps and methodological limitations in the existing literature, thereby providing a foundation for future research directions. Given that no comprehensive systematic review has been conducted on digital payment challenges, satisfaction, and impact specifically in Ethiopia, this review fills an important lacuna in the scholarly literature.

2.2 Search Strategy

The search strategy was designed to maximise the identification of relevant studies while maintaining transparency and replicability. A multi-database search was conducted across the following electronic databases and sources:

- a. Scopus – A comprehensive abstract and citation database of peer-reviewed literature
- b. Web of Science – A multidisciplinary citation index covering high-impact journals
- c. Google Scholar – A broad academic search engine for grey literature and additional studies
- d. Addis Ababa University Institutional Repository – For Ethiopian postgraduate theses and dissertations
- e. African Journals Online (AJOL) – For African-published scholarly articles

In addition to database searches, backward citation searching (reviewing the reference lists of included articles) and forward citation searching (reviewing studies that cited the included articles) were employed to ensure maximum inclusion of relevant studies (Springer, 2025).

2.3 Inclusion and Exclusion Criteria

To ensure the relevance and quality of studies included in this systematic review, explicit inclusion and exclusion criteria were established prior to the search process, following the PRISMA 2020 guidelines (Page et al., 2021).

Inclusion Criteria:

- a. Publication type: Peer-reviewed journal articles, conference proceedings, and institutional reports
- b. Study design: Empirical studies (quantitative, qualitative, or mixed methods) and policy documents
- c. Geographic focus: Studies conducted in Ethiopia or with a primary focus on Ethiopian digital payments
- d. Topic relevance: Studies addressing digital payment adoption, challenges, user satisfaction, trust, socio-economic impact, or financial inclusion in Ethiopia
- e. Language: English-language publications
- f. Temporal scope: Publications from 2015 to 2026

Exclusion Criteria:

- a. Publication type: Short communications, opinion pieces, editorials, book reviews, and non-peer-reviewed articles without empirical basis
- b. Geographic focus: Studies conducted outside Ethiopia without relevance to the Ethiopian context
- c. Topic relevance: Studies on general financial technology without specific reference to digital payments in Ethiopia
- d. Language: Non-English publications
- e. Quality: Studies with poor methodological quality or inadequate data reporting

The rationale for excluding short communications, conference abstracts, and review articles is that these publications often lack sufficient methodological detail, making it difficult to assess the quality of evidence, and relevant outcome measures are frequently absent or inadequately reported (Springer, 2025). The focus on peer-reviewed, full-length research articles ensures methodological rigour and consistency across studies.

2.4 PRISMA Framework

This systematic review adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. The PRISMA 2020 statement is an evidence-based, minimum set of items for reporting in systematic reviews and meta-analyses (Page et al., 2021). The PRISMA 2020 guideline defines the minimum set of evidence-based items comprising: (i) a 27-item checklist; (ii) an expanded checklist detailing reporting recommendations for each item; (iii) a checklist for abstracts; and (iv) revised flow diagrams for both original and updated systematic reviews (PRISMA Statement, 2021).

The PRISMA framework was selected because it is the internationally recognised standard for reporting systematic reviews (HEC Montreal, 2025). The framework ensures transparent reporting of the review's methods and findings, enabling readers to assess the rigour and reproducibility of the review process. As PRISMA Statement (2021) notes, the PRISMA 2020 statement "aims to ensure transparent reporting of systematic reviews, their methods and findings."

PRISMA Flow Diagram

The study selection process will be documented using the PRISMA 2020 flow diagram, which depicts the flow of information through the different phases of a systematic review (Page et al., 2021). The four-phase flow diagram comprises:

- Identification: Records identified from databases and other sources
- Screening: Records screened and excluded
- Eligibility: Full-text articles assessed for eligibility and excluded with reasons
- Inclusion: Studies included in the review

The flow diagram will map out the number of records identified from databases, registers, and other sources, the number of records included and excluded, and the reasons for exclusion (Page et al., 2021).

Study Selection Process

The study selection process will follow a two-step screening approach (Springer, 2025):

- Title and abstract screening: Two independent reviewers will screen titles and abstracts of all retrieved records against the inclusion criteria. Disagreements will be resolved through discussion or consultation with a third reviewer.

- Full-text screening: Full texts of potentially eligible studies will be retrieved and independently assessed by two reviewers against the inclusion criteria. Reasons for exclusion will be documented.

Quality Assessment

The methodological quality of included studies will be assessed using appropriate critical appraisal tools. For quantitative studies, the Joanna Briggs Institute (JBI) Critical Appraisal Checklist will be employed (Springer, 2025). The JBI checklist includes quality indicators assessing inclusion criteria, study setting and participant description, exposure measurement, objectives, confounders, statistical analysis, outcome measurement, and handling of confounders (BMC Psychiatry, 2023). For qualitative studies, the Critical Appraisal Skills Programme (CASP) checklist will be used. Studies deemed to have poor methodological quality will be excluded or their findings interpreted with appropriate caution.

2.5 Challenges in Digital Payment Adoption in Ethiopia

Despite the remarkable growth in digital payment infrastructure and account ownership outlined in the preceding sections, Ethiopia faces a complex web of interconnected challenges that impede the transition from a cash-based to a digitally inclusive economy. The National Bank of Ethiopia's (NBE) draft National Digital Payment Strategy (NDPS) 2026–2030 acknowledges that systemic challenges persist, including a low active account rate of 30 percent, a significant urban-rural divide, a rise in social engineering fraud, and a market structure where person-to-person transfers dominate over merchant payments (National Bank of Ethiopia, 2025). This section systematically examines the multifaceted barriers to digital payment adoption in Ethiopia across five interrelated dimensions.

2.6 Infrastructure-Related Challenges

Infrastructure deficits constitute one of the most fundamental barriers to digital payment adoption in Ethiopia. The country's digital divide is more than a technological gap; it is a barrier to economic opportunity, particularly for women and youth-led small businesses (World Bank, 2025). Limited internet connectivity and network penetration remain pervasive challenges. Between 2020 and 2024, although internet coverage increased from 15 to 19 percent of the population, this still leaves the vast majority of Ethiopians without reliable access to digital services (World Bank, 2025). Many rural areas still rely on spotty signals, while urban users complain of sluggish apps and frozen screens (Addisfortune, 2025).

Agent networks, which serve as the vital bridge between digital systems and rural users, remain critically weak. Agents like Ziyada Seid, local shopkeepers who help people send, receive, and manage money using their cellphones, translate digital finance into services communities can trust (UNCDF, 2025). However, when networks are sparse or poorly supported, they deepen exclusion. A key finding indicates that 95 percent of agents are concentrated in urban areas, leaving rural communities underserved (UNCDF, 2025). Agents face chronic liquidity shortages (66 percent), poor signal (52.72 percent experience weak signals), and high data costs (47.72 percent), with delayed commission payments affecting agent satisfaction and retention (UNCDF, 2025).

Power disruptions and the lack of alternative power sources further constrain digital payment adoption, particularly in rural areas where electricity access remains unreliable (World Bank, 2025). The conflict in northern Ethiopia between 2020 and 2022 caused an estimated \$600 million in damage to communications infrastructure, exacerbating already significant connectivity gaps (World Bank, 2025). Network-agnostic access issues have also emerged,

with Safaricom's M-Pesa Ethiopia reporting restricted access to its newly launched financial services app, M-Pesa Lehulum, among users of the state-backed telco Ethio Telecom (The East African, 2025). This fragmentation undermines the principle of universal access that digital payments purport to offer.

2.7 Trust and Security Challenges

Trust deficits represent perhaps the most critical barrier to digital payment adoption in Ethiopia. As the Better Than Cash Alliance has emphasised, the continent's next challenge is overcoming a widening trust deficit that prevents millions from actively using digital financial services (SBS, 2025). Ethiopia has launched a major overhaul of its digital payments landscape at a time when African policymakers are confronting a critical truth: expanding access to digital finance is no longer enough (SBS, 2025).

Businesses' distrust is rising amid payment disputes, digital scams, and license revocations (Addisfortune, 2025). Desalegn Banksira, a restaurant owner in Addis Ababa's Lancha area, illustrates this growing frustration: "Some customers come with receipts that were paid to another business," he said with a weary shrug, explaining that screenshots now carry more weight than verbal promises, and QR images are the go-to evidence for servers (Addisfortune, 2025). Even so, disputes abound—a handful of patrons have stormed out, claiming they lost their phones while staff checked transfer confirmations (Addisfortune, 2025).

Fraud losses are substantial and growing. Fraud losses hit 1.3 billion Birr in 2024, mainly from social engineering scams that exploit low digital literacy (Addisfortune, 2025). Digital security experts warn, however, that making fraud public can undermine trust while alerting would-be criminals to system weaknesses (Addisfortune, 2025). Cyberattacks and electronic fraud present a particular challenge for regulators and banks working to catch up with international best practices (Capital Ethiopia, 2025). As the mobile number functions as a primary authentication mechanism for banking services, fraud has shifted from physical theft to identity exploitation (Capital Ethiopia, 2025). The NBE's draft strategy explicitly identifies the need for advanced fraud detection, cybersecurity frameworks, and robust consumer protection mechanisms (National Bank of Ethiopia, 2025).

The regulatory environment itself has contributed to trust erosion. Payment gateways operate under the NBE's oversight, filing bi-weekly reports on transaction volumes and software tweaks, yet approvals can be revoked abruptly (Addisfortune, 2025). Fenan Pay Solutions S.C. won a commercial permit while Sunpay Financial Solutions S.C. endured the opposite fate after months of boardroom bickering and compliance failures (Addisfortune, 2025). Sunpay never launched operations despite being licensed in January 2022, and the NBE revoked its permit on August 27, 2024, citing breaches of the National Payment System law (Addisfortune, 2025). Such instability undermines business confidence and consumer trust in the digital payment ecosystem.

2.8 Economic and Affordability Challenges

Economic barriers constitute a primary impediment to digital payment adoption. The NBE has explicitly identified affordability as the key barrier holding back millions from making digital payments part of daily life (Addisfortune, 2026). Hidden costs and steep transaction fees have made basic mobile payments an unattractive alternative to currency notes (Addisfortune, 2026). As Solomon Desta, the Central Bank's vice governor,

acknowledged, "Transaction costs are mounting, and everybody is crying. We need to work hard in this regard" (Addisfortune, 2026).

Transaction fees structure disincentivises usage. In Ethiopia, shoppers pay to pay, while shopkeepers retreat to cash (Addisfortune, 2025). More than three-quarters of digital traffic flows through personal channels, and formal payments to merchants barely register (Addisfortune, 2025). This distortion reflects a fundamental economic reality: cash remains king not because citizens resist novelty, but because ditching it is dear (Addisfortune, 2025). An M-Pesa user in Ethiopia on average spends just Sh0.50 a month in transaction fees, dimming the power of the mobile money service to grow Safaricom's profits (Business Daily Africa, 2026). M-Pesa revenue in Ethiopia stood at measly Sh12.2 million for the nine months ended December 2025, translating to a monthly average of about Sh1.4 million from active 2.36 million users, paling in comparison to the Kenyan monthly average of Sh374.83 (Business Daily Africa, 2026).

Smartphone affordability presents an even more fundamental barrier. The cost of smartphones remains a significant barrier, with prices averaging 77 percent of monthly income, compared to just 28 percent in Kenya (World Bank, 2025). Most Ethiopians still rely on basic or feature phones, accessing mobile money through USSD codes and SMS rather than app-based services (World Bank, 2025). Basic banking via USSD, the only digital channel available to millions who have nothing more sophisticated than a feature phone is critical for inclusion (Addisfortune, 2026). The NBE's draft strategy mandates that USSD-based services become free of charge, a recognition that affordability must be addressed at the most fundamental level (National Bank of Ethiopia, 2025).

2.9 Organizational and Institutional Challenges

Organizational and institutional deficiencies compound the barriers to digital payment adoption. Low financial literacy and inadequate digital infrastructure persistently limit adoption (Mudessir, 2025). Nationally representative data reveals pronounced disparities in literacy and inclusion by region, gender, income, and religion, with rural, female, and low-income groups facing persistent barriers (Mudessir, 2025). Both digital financial literacy (DFL) and financial literacy (FL) are critical, statistically significant predictors of financial inclusion, with DFL exerting the strongest influences on the usage of digital financial services (Mudessir, 2025).

The digital literacy gap extends to banking employees themselves. Research has identified challenges including poor learning and development of e-services, low salary scale of workers, lack of learning from previous traditional operations, and lack of banking managers' capability (Gonfa, 2026). These organisational capacity constraints undermine the quality of service delivery and the ability of financial institutions to effectively promote and support digital payment adoption.

Regulatory uncertainty and compliance issues further complicate the landscape (Gonfa, 2026). Competition problems in the essential digital infrastructure market and in the financial sector are responsible for the inadequate provision of digital payment services in Ethiopia (Gonfa, 2026). The two key institutional deficiencies are the lack of capacity of regulatory and supervisory institutions (Gonfa, 2026). While the NBE has made significant strides in developing the NDPS 2026–2030, implementation capacity remains a concern (National Bank of Ethiopia, 2025).

Inadequate gender-responsive innovation represents a critical organisational failure (UNCDF, 2026). Despite the growing recognition of the importance of women's financial inclusion, most digital systems are not designed with women's realities in mind (UNCDF, 2026). Without inclusive design, financial inclusion cannot progress (UNCDF, 2026). The lack of gender-responsive product development, coupled with the absence of female agents who make up only 30 percent of agents, limits the reach of digital financial services to women (UNCDF, 2026).

III. Result and Discussion

3.1 User Satisfaction with Digital Payments

User satisfaction constitutes a critical determinant of the long-term viability and success of digital payment ecosystems. In Ethiopia, where digital financial services are rapidly expanding, understanding the drivers of user satisfaction is essential for service providers, policymakers, and financial institutions seeking to promote active usage and build sustainable digital payment systems. This section systematically examines the empirical evidence on user satisfaction with digital payments in Ethiopia, drawing on studies of Telebirr, mobile money services, banking sector digital payments, and merchant adoption.

3.2 Overall Satisfaction Levels

Empirical research consistently reveals generally positive satisfaction levels across various digital payment platforms in Ethiopia, though significant variations exist across user segments and service types.

Telebirr Users: Studies investigating Telebirr, Ethiopia's leading mobile money platform, demonstrate high levels of user satisfaction across multiple dimensions. Besrat Nigussie (2024) examined the relationships between trust, security perceptions, and user experience within the Telebirr Wallet ecosystem in Addis Ababa, surveying 384 respondents with 347 valid responses. The findings revealed that high levels of trust, security perception, and user experience satisfaction are observed among Telebirr users, with trust emerging as the primary adoption driver, followed by user experience and finally perceived security (Besrat Nigussie, 2024). These findings are consistent with research by Abdulaziz Nassir (2025), who investigated the mediating role of customer trust in the relationship between Telebirr payment service and customer satisfaction. The study found that convenience, speed, security, and cost have a positive and significant effect on customer satisfaction both directly and indirectly (Abdulaziz Nassir, 2025).

Research on Telebirr financial service quality further supports these findings. Tesfaye (2024) examined the effect of Tele Birr financial service quality on customer satisfaction, revealing that reliability, efficiency, privacy, and contact had positive significant effects on customer satisfaction (Tefaye, 2024). Additionally, a usability study of Ethio telecom Telebirr reported high usability and overall user satisfaction (Besrat Nigussie, 2024).

Banking Sector Digital Payments: Satisfaction levels extend beyond mobile money to traditional banking sector digital payment services. Nazrawit Endale (2024) examined the effect of electronic payment systems on customer satisfaction at the Bank of Abyssinia, surveying 357 customers across five branches in Addis Ababa. The study found that mobile banking was the most popular e-banking product, followed by ATM access, internet banking, and Giza Pay (Nazrawit Endale, 2024). Overall, customers expressed positive ratings for meeting service delivery timelines and round-the-clock availability. However, the study

identified room for improvement in areas such as availability everywhere, accommodation of large volume transactions, and language clarity (Nazrawit Endale, 2024). Participants generally expressed moderate satisfaction with mobile banking, internet banking, Giza Pay, and overall customer satisfaction (Nazrawit Endale, 2024).

App store ratings provide additional evidence of satisfaction levels across Ethiopian banking apps. Commercial Bank of Ethiopia maintains a rating of 4.5, Dashen Bank 4.4, and Bank of Abyssinia 4.3, reflecting generally positive user sentiment (Addisfortune, 2025).

Merchant and SME Satisfaction: The merchant segment demonstrates notably high satisfaction levels. A Visa study conducted by 4Sight Research & Analytics, based on face-to-face interviews with 259 SME owners or managers, revealed that over 80% of surveyed SMEs have started accepting digital payments in the last two years, citing increased convenience, reduced fraud risk, and improved efficiency as key factors in adoption (Visa, 2025). Notably, 92% of SMEs using digital payments reported satisfactory support from the government and major institutions, as well as quicker payment processing (Visa, 2025). This satisfaction is encouraging 64% of SMEs to consider investing in additional payment technologies, signalling a strong commitment to a digital future (Visa, 2025).

The broader merchant landscape similarly reflects positive trends. Most merchants cite increased customer convenience, reduced fraud risk, and improved efficiency as key advantages, benefits that translate into real improvements in operational efficiency, cost savings, and enhanced customer satisfaction (Addisfortune, 2025). Furthermore, 64% of digitally enabled SMEs plan to expand their digital payment capabilities (Visa, 2025).

M-Pesa User Satisfaction: M-Pesa Ethiopia has also garnered positive user feedback. User reviews indicate that most users praise the app for ease of use, strong connectivity, and overall quality, with the app maintaining an average rating of approximately 4.6 out of 5 (The East African, 2025). However, users have reported intermittent outages, occasional interruptions, and slowdowns as drawbacks (The East African, 2025).

3.3 Key Determinants of Satisfaction

a. Trust as a Mediating Factor

Trust emerges as perhaps the most critical determinant of user satisfaction in Ethiopia's digital payment ecosystem. Abdulaziz Nassir (2025) conducted a comprehensive investigation into the mediating role of customer trust in the relationship between Telebirr payment service and customer satisfaction. Utilising an explanatory research design with a quantitative approach, data were collected from 368 Ethiopian Telecom customers and analysed using Structural Equation Modelling (SEM) (Abdulaziz Nassir, 2025). The study found that customer trust partially mediates the relationship between Telebirr payment service and customer satisfaction (Abdulaziz Nassir, 2025). The model predictive relevance ($Q^2_{predict}$) score was 0.542, demonstrating that the model can reliably predict more than 54% of the variance in customer satisfaction (Abdulaziz Nassir, 2025). The R-squared value of 0.675 indicates that the predictors in the model account for roughly 67.5% of the variability in customer satisfaction (Abdulaziz Nassir, 2025).

Besrat Nigussie (2024) similarly found that trust emerges as the primary adoption driver among Telebirr users, followed by user experience and finally perceived security (Besrat Nigussie, 2024). Research on e-service quality further confirms that the quality of electronic service has a significant impact on customer behaviour and increases trust, satisfaction, loyalty

and intention to use the electronic service (Gonfa, 2026). These findings underscore the centrality of trust in the Ethiopian digital payment context, where concerns about fraud, payment disputes, and system reliability remain prevalent (Addisfortune, 2025).

b. Convenience, Speed, Security, and Cost

The four dimensions of convenience, speed, security, and cost collectively constitute powerful determinants of user satisfaction. Abdulaziz Nassir (2025) demonstrated that these factors have a positive and significant effect on customer satisfaction both directly and indirectly (Abdulaziz Nassir, 2025). The R-squared value of 0.675 confirms that these predictors account for 67.5% of the variability in customer satisfaction (Abdulaziz Nassir, 2025).

Systematic literature reviews confirm these findings. Gonfa (2026) found that system reliability, responsiveness, and security predict user satisfaction and continued use of digital payment platforms in Ethiopia (Gonfa, 2026). Security perceptions are particularly salient, with trust related to payments closely linked to information security and data privacy security of consumers when making transactions (Besrat Nigussie, 2024).

c. User Experience

User experience emerges as the second most important adoption driver among Telebirr users, following trust. Besrat Nigussie (2024) found that user experience satisfaction is observed at high levels among Telebirr users (Besrat Nigussie, 2024). Usability assessments further support this finding, with Ethio telecom Telebirr demonstrating high usability and facilitating smooth interactions (Besrat Nigussie, 2024).

Research integrating the Technology Acceptance Model (TAM) and the Expectation-Confirmation Model (ECM) has demonstrated that both perceived usefulness and perceived ease of use have significant effects on customer satisfaction, which in turn significantly influences the continuance intention to use FinTech (Seyum et al., 2025). This finding highlights the importance of user-centred design in driving sustained satisfaction and continued usage (Seyum et al., 2025).

d. System Reliability and Responsiveness

System reliability and responsiveness are critical predictors of user satisfaction. Research confirms that system reliability, responsiveness, and security predict user satisfaction and continued use of digital payment platforms in Ethiopia (Gonfa, 2026). Studies examining Telebirr mobile money services have identified reliability, efficiency, privacy, and contact as factors with positive significant effects on customer satisfaction (Tsfaye, 2024).

3.4 Areas Requiring Improvement

Despite generally positive satisfaction levels, several areas require attention and improvement:

Availability and Accessibility: Customers have expressed concerns about limited availability of digital payment services in certain locations, with the Bank of Abyssinia study identifying availability everywhere and accommodation of large volume transactions as areas requiring improvement (Nazrawit Endale, 2024). The rural-urban digital divide remains a persistent challenge, with infrastructure gaps limiting access in underserved communities (World Bank, 2025).

Customer Service Limitations: Customers face difficulties accessing customer service, with service providers often unable to assist in transaction errors (Addisfortune, 2025). Unresponsive support and inadequate complaint resolution mechanisms undermine user confidence and satisfaction (Addisfortune, 2025). User reviews frequently mention weak in-app customer support as a significant drawback (The East African, 2025).

Transaction Failures and Technical Issues: Users have reported transaction failures, app glitches, and clunky interfaces (Addisfortune, 2025). User reviews indicate that Telebirr "feels glitchy, clunky, and often lags when you need it most," with simple actions like sending or receiving money sometimes taking longer than they should (Addisfortune, 2025). M-Pesa users similarly report intermittent outages and occasional interruptions (The East African, 2025).

High Fees and Hidden Charges: Transaction costs remain a significant barrier to satisfaction (Addisfortune, 2026). Bank-to-Telebirr transfers incur fees that make digital payments less appealing (Addisfortune, 2026). Hidden charges and opaque fee structures further undermine user trust (Addisfortune, 2026). Security concerns, including the potential for sending money to unknown numbers, verification and login frustrations, and weak in-app customer support, have been identified as areas of user dissatisfaction (The East African, 2025).

Language and Clarity Issues: Language clarity has been identified as an area requiring improvement, suggesting that digital payment interfaces may not adequately serve Ethiopia's diverse linguistic population (Nazrawit Endale, 2024).

3.5 Theoretical Frameworks for Understanding Satisfaction

The theoretical understanding of digital payment satisfaction in Ethiopia draws primarily on the integration of technology acceptance models with customer satisfaction theory.

Technology Acceptance Model (TAM): TAM, originally developed by Davis (1989), posits that perceived usefulness and perceived ease of use are primary determinants of technology acceptance (Davis, 1989). Studies in the Ethiopian context have extended TAM to incorporate trust, security, and user experience variables. Besrat Nigussie (2024) employed TAM to examine Telebirr adoption, finding that trust, security perceptions, and user experience collectively influence consumer adoption behaviour (Besrat Nigussie, 2024). Seyum et al. (2025) integrated TAM with the Expectation-Confirmation Model (ECM), demonstrating that both perceived usefulness and perceived ease of use have significant effects on customer satisfaction, which in turn significantly influences continuance intention to use FinTech (Seyum et al., 2025).

Diffusion of Innovation (DOI) Theory: DOI theory, articulated by Rogers (1995), explains how, why, and at what rate new ideas and technology spread through cultures (Rogers, 1995). This framework has been applied to examine the adoption of digital payment systems in Ethiopia, particularly in rural contexts (Gonfa, 2026). Studies have implemented DOI theory alongside the Unified Theory of Acceptance and Use of Technology (UTAUT) to understand mobile banking adoption at the Commercial Bank of Ethiopia (Gonfa, 2026). The theory's emphasis on relative advantage, compatibility, complexity, trialability, and observability provides a useful lens for understanding differential adoption and satisfaction patterns across user segments (Rogers, 1995).

Integration of TAM and Customer Satisfaction Theory: Abdulaziz Nassir (2025) made a significant theoretical contribution by integrating technology acceptance models with customer satisfaction theory, providing a comprehensive framework for understanding the dynamics of digital payment satisfaction (Abdulaziz Nassir, 2025). This integrated approach recognises that satisfaction is not merely a function of technological acceptance but is mediated by trust and influenced by service quality dimensions including convenience, speed, security, and cost (Abdulaziz Nassir, 2025). The expectation-confirmation model (ECM) has also been integrated with TAM to explore factors influencing customers' continuance intention to use FinTech (Seyum et al., 2025).

The theoretical frameworks applied in Ethiopian digital payment research share a common recognition that user satisfaction is multidimensional, influenced by technological, psychological, and contextual factors. The strong predictive power of models incorporating trust as a mediating variable ($R^2 = 0.675$) confirms the appropriateness of these theoretical approaches for the Ethiopian context (Abdulaziz Nassir, 2025).

3.6 Socio-Economic Impact of Digital Payments

The proliferation of digital payment systems in Ethiopia has generated profound socio-economic consequences that extend far beyond mere transaction convenience. This section examines the multifaceted impact of digital payments across financial inclusion, economic growth, social empowerment, enterprise development, and policy transformation.

3.7 Financial Inclusion

Digital financial services have played a pivotal role in addressing Ethiopia's historically low formal financial sector participation (Gonfa, 2026). The National Bank of Ethiopia (NBE) prioritised digital financial services, including mobile money, to achieve 70% adult financial inclusion by 2025. The subsequent launch of multiple mobile money platforms, including Telebirr and M-Pesa, spurred significant user growth (World Bank, 2025).

Empirical evidence demonstrates that FinTech dimensions, accessibility, service diversity, and cost and reliability—significantly impact financial inclusion outcomes, with digital financial literacy serving as a mediating factor (Mekonnen, 2025). Telebirr has improved access to basic financial services such as digital transfers and bill payments, though it remains limited in supporting deeper financial engagement like savings and credit usage (Mekonnen, 2025).

Research analysing 2018/2019 Ethiopian Socio-Economic Survey data using a multivariate Probit model presents new evidence that FinTech or mobile payments have a significant effect on Iddir, Ethiopia's traditional informal finance mechanism (Gebre et al., 2025). Additionally, FinTech significantly enhances formal savings and insurance uptake, though it shows no statistically significant effect on household account ownership or borrowing behaviour (Gebre et al., 2025). These findings suggest that policymakers should leverage the positive influence that FinTech has on informal financial systems by integrating digital payment solutions into platforms like Iddir (Gebre et al., 2025).

The digital financial literacy gap, however, remains a persistent barrier (Mudessir, 2025). Closing Ethiopia's financial inclusion gaps requires a holistic, strategic, innovative approach that combines literacy, technology, and adaptive policy, ensuring social justice and equitable access (Mudessir, 2025).

3.8 Economic Impact

The scale of Ethiopia's digital economy transformation is remarkable. Virtual transactions now total 12.5 trillion Birr, far exceeding traditional cash transactions, highlighting the accelerating shift toward a digital economy (Capital Ethiopia, 2025). Additionally, 24.5 billion Birr has been disbursed through virtual loans, reflecting the increasing accessibility and efficiency of financial services (Capital Ethiopia, 2025). Telebirr facilitated transactions worth over 2.38 trillion Birr in 2024/25 alone, with cumulative transactions since launch reaching nearly 5 trillion Birr (ENA, 2025).

The transition to a digital economy can generate significant economic growth. Studies indicate that a strong transition from cash to digital payments could increase Ethiopia's gross domestic product by one to two percent annually (World Bank, 2025). Modernising digital payments systems can help boost annual GDP by 3% points in emerging countries (World Bank, 2025). Ethiopia's digital transformation could add up to \$10.8 billion to its GDP by 2028, according to GSMA estimates (World Bank, 2025).

Ethiopia's National Digital Payments Strategy (NDPS) 2026–2030 sets ambitious targets: raising the 30-day active-use rate for transactional accounts from 16% to 60%, and increasing merchant-payment participation from 24% to 60% by 2030 (National Bank of Ethiopia, 2025). The strategy projects 275 transactions per adult annually by 2030. Full digitization of government-operated transport services targets 60% of fares collected digitally by 2030 (National Bank of Ethiopia, 2025).

The integration of digital payments with informal finance mechanisms represents a distinctive feature of Ethiopia's digital transformation. Research confirms that FinTech has different levels of influence across regions and urban-rural locations, with mobile payments significantly affecting Iddir, the traditional rotating savings and credit association that serves over 30% of Ethiopians (Gebre et al., 2025). Integration with informal systems like Iddir substantially enhances entrepreneurial participation, as Iddir facilitates risk-sharing and builds social trust (Gebre et al., 2025).

3.9 Discussion, Gaps, and Conclusion

a. Synthesis of Findings

This systematic review synthesises the existing body of knowledge on digital payment adoption in Ethiopia, revealing a complex and multidimensional landscape characterised by rapid growth alongside persistent structural challenges. The findings are organised across three interrelated dimensions: challenges, satisfaction determinants, and socio-economic impact.

Summary of Key Challenges: The review identifies five interconnected categories of barriers impeding digital payment adoption in Ethiopia. Infrastructure-related challenges, including limited internet connectivity, unreliable network penetration, power disruptions, and a pronounced rural-urban digital divide, remain fundamental obstacles (Mugoro & Makhura, 2025; World Bank, 2025). Trust and security challenges constitute perhaps the most critical barrier, with a widening trust deficit preventing millions from actively using digital financial services (Addisfortune, 2025). Ethiopia is creating accounts faster than it is building the trust institutions; effective consumer protection, accessible dispute resolution, meaningful digital literacy, and reliable systems that make digital dependence rational (Addis Standard, 2026). Economic and affordability barriers, including high transaction fees and smartphone costs averaging 77% of monthly income, further constrain adoption (World Bank, 2025). Organizational and institutional barriers, including low digital literacy, limited gender-

responsive innovation, and persistent regulatory uncertainty, further exacerbate these challenges (Ngusa, 2026). Finally, socio-cultural factors, particularly cash dominance and persistent gender disparities, present deeply entrenched barriers to digital payment adoption (UNCDF, 2025; UNCDF, 2026).

Summary of Satisfaction Determinants: Empirical research consistently demonstrates that user satisfaction with digital payments in Ethiopia is driven by four primary factors. Trust emerges as the most critical determinant, serving as a mediating variable between service quality and customer satisfaction (Abdulaziz Nassir, 2025). Convenience, speed, security, and cost collectively exert positive and significant effects on customer satisfaction (Abdulaziz Nassir, 2025). User experience ranks as the second most important adoption driver, while system reliability and responsiveness predict user satisfaction and continued use (Besrat Nigussie, 2024; Gonfa, 2026). The high predictive power of satisfaction models ($R^2 = 0.675$) confirms the robustness of these determinants (Abdulaziz Nassir, 2025).

Summary of Socio-Economic Impact: Digital payments have generated measurable socio-economic benefits across multiple domains. In financial inclusion, digital financial services have expanded access and reduced transaction costs, though adoption remains constrained by literacy gaps and infrastructure deficits (Gonfa, 2026; Gebre et al., 2025). Economically, digital transactions now exceed 18 trillion Birr annually (ENA, 2025), with evidence that FinTech significantly affects informal finance mechanisms such as Iddir (Gebre et al., 2025). Socially, digital payments demonstrate transformative potential for women's empowerment and agricultural livelihoods, though gender disparities persist (Ali & Ibrahim, 2025; Ali, 2025).

b. Theoretical Contributions

This systematic review makes several important theoretical contributions to the understanding of digital payment adoption in Ethiopia and similar developing country contexts.

Integration of TAM, UTAUT, and Customer Satisfaction Theories: The review synthesises studies employing the Technology Acceptance Model (TAM), the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2), and customer satisfaction theory, demonstrating their complementary applicability in the Ethiopian context. TAM's core constructs perceived usefulness and perceived ease of use has been consistently validated as significant predictors of digital payment adoption (Besrat Nigussie, 2024). UTAUT2 has been effectively applied to examine digital finance use in rural Ethiopia, confirming that both individual-level and structural factors significantly shape adoption and usage intensity (Mugoro & Makhura, 2025). The integration of these frameworks with customer satisfaction theory, as demonstrated in studies examining continuance intention, represents a significant theoretical advancement (Abdulaziz Nassir, 2025).

Trust as a Mediating Variable: A distinctive theoretical contribution emerging from this review is the centrality of trust as a mediating variable in digital payment adoption frameworks. Research confirms that customer trust partially mediates the relationship between payment service quality and customer satisfaction (Abdulaziz Nassir, 2025). Trust emerges as the primary adoption driver, followed by user experience and perceived security (Besrat Nigussie, 2024). This finding underscores that in contexts characterised by weak institutional trust and limited consumer protection, trust-building must precede or accompany technological deployment.

Validation of Predictive Models: The review validates the predictive power of integrated theoretical models in the Ethiopian context. Models incorporating trust, convenience, speed, security, cost, and user experience account for 67.5% of the variability in customer satisfaction ($R^2 = 0.675$), with a predictive relevance score (Q^2_{predict}) of 0.542 (Abdulaziz Nassir, 2025). These robust metrics confirm the appropriateness of these theoretical approaches for understanding digital payment dynamics in Ethiopia.

Technological and organizational Factors: Recent empirical work confirms the dual dependency on technological infrastructure and organizational readiness. Nationally representative analyses find that mobile ownership, ATM/debit card access, and internet connectivity are significant enablers of digital payment and e-banking uptake, while bank-level studies report that system reliability, responsiveness, and security predict user satisfaction and continued use (Gonfa, 2026). At the organisational level, perceived usefulness, defined as management's belief that digital initiatives will improve performance is consistently associated with higher adoption intent and resource allocation (Gonfa, 2026).

c. Policy Implications

The findings of this systematic review carry significant policy implications for Ethiopia's digital payment ecosystem.

Investments in Connectivity and Consumer Protection: Sustainable financial inclusion requires substantial investments in digital infrastructure, particularly internet connectivity and network reliability in rural and underserved areas (Mugoro & Makhura, 2025; World Bank, 2025). Equally important is strengthening consumer protection frameworks, including effective dispute resolution mechanisms, transparent fee structures, and accessible customer support, to build the institutional trust that makes digital dependence rational (Addis Standard, 2026). As Deputy Prime Minister Temesgen Tiruneh acknowledged, challenges remain in ensuring digital services reach underserved populations, with gaps in usage between urban and rural communities and between genders (Pulse of Africa, 2025).

Pro-Poor Financial Products: Policymakers should prioritise the development of pro-poor financial products that address the specific needs of low-income populations, informal traders, small-holder farmers, and women. This includes designing gender-responsive innovations that account for women's lower device ownership, digital literacy levels, and financial independence (Ngusa, 2026). The National Digital Payments Strategy 2026–2030 explicitly aims to enhance gender inclusivity in financial service design and create interoperable systems that facilitate cross-border payments (Pulse of Africa, 2025; Ecofin Agency, 2025).

Addressing Affordability: The National Bank of Ethiopia's draft strategy correctly identifies affordability as the key barrier holding back millions (Addisfortune, 2026). Policy interventions should mandate fee transparency, reduce charges for low-value and peer-to-peer transfers, and ensure that USSD-based services remain accessible to feature phone users (National Bank of Ethiopia, 2025). The strategy aims to increase the 30-day active rate from 16% to 60% by 2030 (Pulse of Africa, 2025).

Building Trust Through Security: Given the centrality of trust as a mediating variable, policymakers should prioritise robust cybersecurity frameworks, advanced fraud detection systems, and public awareness campaigns that build confidence in digital payment systems (Abdulaziz Nassir, 2025; Besrat Nigussie, 2024). The shift in Ethiopia's digital payments agenda "from access to trust" represents a necessary and timely policy reorientation (Addis

Standard, 2026). The NDPS 2026–2030 charts a five-year road map for interoperability, trust, and innovation in Ethiopia's digital finance landscape (Pulse of Africa, 2025).

Digital and Financial Literacy: Investments in digital and financial literacy programmes are essential, particularly for individuals with limited formal education, to foster confidence and digital engagement (Mugoro & Makhura, 2025). Both digital financial literacy and financial literacy are critical, statistically significant predictors of financial inclusion, with digital financial literacy exerting the strongest influences on the usage of digital financial services (Mudessir, 2025).

d. Research Gaps and Future Directions

This systematic review identifies several significant research gaps that warrant future investigation.

Long-Term Impacts on Competitive Advantage and Financial Performance: Future research should investigate the long-term impacts of digital marketing and payment adoption on competitive advantage and financial performance of Ethiopian banks and enterprises (Gonfa, 2026). Longitudinal studies are needed to assess whether digital payment adoption translates into sustained business growth and profitability.

Interplay of Technological, Organisational, and Environmental Factors: The interplay between technological, organisational, and environmental factors within the Ethiopian context remains under-explored (Gonfa, 2026). Research should examine how these multi-level factors interact to shape adoption patterns, satisfaction levels, and socio-economic outcomes.

Gender-Responsive Digital Financial Services: Despite growing recognition of the gender gap in digital financial access, research on gender-responsive innovation in Ethiopia remains limited (Ngusa, 2026). Future studies should investigate the specific barriers women face, including device access, digital literacy, financial independence, and social norms and evaluate the effectiveness of targeted interventions (UNCDF, 2026). The eight key barriers identified in recent systematic reviews, including exclusion from formal financial institutions, low digital financial literacy, gender inequality driven by patriarchal norms, and limited access to markets and business opportunities, demand further empirical investigation (Ngusa, 2026).

Rural-Urban Digital Divide and Adoption Patterns: The rural-urban digital divide in Ethiopia demands more granular investigation (Mugoro & Makhura, 2025; UNCDF, 2025). Research should examine how adoption patterns, usage behaviours, and socio-economic impacts differ between rural and urban populations, and identify context-specific strategies for bridging this divide. Women are less likely to own phones, smartphones, or digital money; rural areas have lower connectivity, device access, and digital literacy (FSD Ethiopia, 2025).

Impact on Household Welfare and Poverty Reduction: The relationship between digital payment adoption and household welfare, poverty reduction, and economic resilience remains under-researched (Gebre et al., 2025). Future studies should employ rigorous quantitative methods to establish causal links between digital financial inclusion and improvements in household income, consumption, and asset accumulation.

Cross-Border Payments and AfCFTA Integration: The NDPS 2026–2030 aims to enable low-value outbound cross-border transfers via cards, mobile wallets, and digital banking (National Bank of Ethiopia, 2025). Research should examine the potential of Ethiopia's digital payment infrastructure, including EthioPay and the Pan-African Payment

and Settlement System (PAPSS), to facilitate regional trade and economic integration under the African Continental Free Trade Area (ENA, 2025).

e. Limitations of the Review

This systematic review has several limitations that should be acknowledged.

Search Scope and Database Coverage: The review's findings are constrained by the scope of the search strategy and the databases accessed. Despite efforts to include multiple databases—Scopus, Web of Science, Google Scholar, AAU Institutional Repository, and AJOL—relevant studies may have been omitted due to database coverage limitations or search term specificity.

Language Restrictions: The review included only English-language publications, potentially excluding relevant research published in Amharic or other local languages. Given that significant policy documents, institutional reports, and academic work may be produced in Ethiopia's official languages, this represents a meaningful limitation.

Publication Bias: The review is susceptible to publication bias, as studies with statistically significant findings are more likely to be published than those with null or negative results. This may lead to an overestimation of the positive effects and adoption rates reported in the literature.

Geographic and Temporal Coverage: The review's geographic focus on Ethiopia, while intentional, limits the generalisability of findings to other developing country contexts. Additionally, the rapid evolution of Ethiopia's digital payment landscape means that some findings may become dated quickly.

Quality of Included Studies: The review included postgraduate theses and institutional reports alongside peer-reviewed journal articles. While this approach ensured comprehensive coverage, the varying methodological quality of included studies may affect the robustness of the synthesis.

Limited Empirical Research Base: The relative novelty of Ethiopia's digital payment ecosystem means that the empirical research base remains limited, with many studies employing small sample sizes, convenience sampling, or cross-sectional designs that limit causal inference (Mugoro & Makhura, 2025).

f. Conclusion

This systematic review has comprehensively examined the challenges, satisfaction determinants, and socio-economic impact of digital payments in Ethiopia. The findings reveal a digital payment ecosystem characterised by remarkable growth—exemplified by Telebirr's 46.6 million users and digital transactions exceeding 18 trillion Birr annually—alongside persistent structural challenges that impede the transition from access to meaningful usage (Besrat Nigussie, 2024; ENA, 2025).

The review identifies five interconnected categories of challenges: infrastructure deficits, trust and security concerns, economic and affordability barriers, organisational and institutional weaknesses, and socio-cultural factors. Among these, trust emerges as the most critical determinant of both adoption and satisfaction, serving as a mediating variable between service quality and customer outcomes (Abdulaziz Nassir, 2025; Besrat Nigussie, 2024).

User satisfaction is driven by trust, convenience, speed, security, cost, and user experience, with integrated theoretical models demonstrating strong predictive power ($R^2 = 0.675$) (Abdulaziz Nassir, 2025). The socio-economic impact of digital payments is evident across financial inclusion, economic formalisation, social empowerment, and enterprise development, though benefits remain unevenly distributed across gender, geographic, and socioeconomic lines (Gebre et al., 2025; Gonfa, 2026; Ngusa, 2026).

The National Bank of Ethiopia's National Digital Payments Strategy 2026–2030, with its emphasis on moving "from access to trust", represents a necessary policy reorientation (National Bank of Ethiopia, 2025; Pulse of Africa, 2025). However, successful implementation will require coordinated action across infrastructure development, consumer protection, affordability, digital literacy, and gender-responsive innovation (Mugoro & Makhura, 2025; UNCDF, 2026).

Future research should prioritise longitudinal studies examining long-term impacts, investigations of the rural-urban digital divide, gender-disaggregated analyses, and rigorous evaluations of the relationship between digital payment adoption and household welfare. Addressing these research gaps will be essential for building an inclusive, resilient, and sustainable digital payment ecosystem that serves all Ethiopians.

IV. Conclusion

This systematic review has comprehensively examined the challenges, satisfaction determinants, and socio-economic impact of digital payments in Ethiopia. Digital payments demonstrate transformative potential despite persistent challenges, including infrastructure deficits, trust and security concerns, economic barriers, organisational weaknesses, and socio-cultural factors. Among these, trust emerges as the critical mediating factor between service provision and user satisfaction, serving as the primary adoption driver. The socio-economic benefits of digital payments are evident across financial inclusion, economic formalization, and social empowerment, though these benefits remain unevenly distributed across gender, geographic, and socioeconomic lines.

The National Bank of Ethiopia's National Digital Payments Strategy 2026–2030 represents a necessary policy reorientation, emphasising that policy focus must shift from access to active usage and trust-building. As Deputy Prime Minister acknowledged, challenges remain in ensuring digital services reach underserved populations, with gaps in usage between urban and rural communities and between genders.

Recommendations

For Policymakers: Strengthen digital infrastructure, particularly internet connectivity in rural areas; reduce transaction costs through fee transparency and elimination of hidden charges; enhance consumer protection frameworks; and invest in digital and financial literacy programmes.

For Financial Institutions: Improve customer service responsiveness; build trust through robust security measures and transparent operations; invest in user experience and accessible interface design; and develop gender-responsive financial products.

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