


The Transformation of Timor Leste's Financial System: From a Cash Based Economy to Digital Financial Inclusion

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Article Info	ABSTRACT
<p>Keywords: Digital Financial Inclusion, Cash-Based Economy, Financial Transformation, Timor Leste, Fintech,</p>	<p>This study explores the transformation of Timor Leste's financial system from a cash-based economy toward inclusive digital finance. Using a qualitative approach and secondary data analysis, the research examines the structural barriers of a cash-dominated system, the progress of digital initiatives, and the strategic steps required for sustainable transformation. Findings reveal that while over 70% of transactions are still cash-based, financial access points have increased by 200% between 2019 and 2020. Initiatives such as mobile wallets and branchless banking have shown promise but are hindered by poor infrastructure, weak regulatory frameworks, and low digital and financial literacy. The study identifies strong potential in the country's young demographic and high mobile phone penetration. A phased five-year strategy is recommended, emphasizing infrastructure development, regulatory reform, and public trust-building. This research contributes to the discourse on financial inclusion in emerging economies and offers practical insights for policymakers, financial institutions, and development partners in Timor Leste.</p>
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INTRODUCTION

Timor Leste, since gaining independence in 2002, has faced the dual challenge of nation-building and developing its financial infrastructure. Despite efforts to modernize its economy, the country remains heavily dependent on cash-based transactions, which dominate over 70% of daily financial activities (Banco Central de Timor-Leste, 2023). This overreliance on physical cash has far-reaching implications, including inefficiencies in the payment system, limited financial transparency, and restricted access to formal credit systems, particularly for small businesses and rural populations.

The continued use of cash as the primary medium of exchange reflects not only structural constraints, such as limited banking coverage and inadequate telecommunications, but also behavioral and cultural preferences. Many communities, especially in remote areas, demonstrate a deep-seated distrust of formal financial institutions and a lack of awareness regarding the benefits of digital financial services. These patterns create an entrenched cycle of financial exclusion that disproportionately affects the poor, women, and micro-enterprises.

In response to these challenges, the global rise of financial technology (fintech) offers developing countries new pathways to promote financial inclusion. Rather than following the incremental stages of banking development seen in advanced economies, countries like Timor Leste can “leapfrog” directly to digital financial systems. According to Van Dijk (2020), the leapfrog theory emphasizes the ability of low-income nations to bypass intermediate development stages by adopting advanced digital solutions such as mobile money and branchless banking. Kenya's experience with M-Pesa serves as a widely cited success story, demonstrating how mobile platforms can significantly expand financial access (Suri & Jack, 2016).

Financial inclusion, as defined by the World Bank (2018), involves access to affordable and appropriate financial services, including payments, savings, credit, and insurance. However, achieving inclusion requires more than just technological availability; it demands the readiness of infrastructure, a supportive regulatory framework, and the financial and digital literacy of the population. Demirgüç-Kunt and Klapper (2013) emphasize that financial exclusion in developing countries stems from a convergence of barriers, including geographic isolation, cost, documentation requirements, and limited consumer trust in formal institutions.

In the context of Timor Leste, studies have identified the dominance of cash transactions, poor infrastructure, and low digital literacy as major impediments to financial modernization (De Sousa, 2017; UNCDF, 2022). While government and donor-backed initiatives—such as the UNDP's INFUSE program and Telemor's mobile wallet service—have made promising strides, their reach remains limited, and digital financial adoption is still in its infancy. A report from UNCDF (2022) revealed that although mobile penetration stands at 80%, actual usage of digital financial services is significantly lower due to trust issues and language barriers, as many platforms are not yet accessible in the Tetum language.

From a theoretical standpoint, the Technology Acceptance Model (TAM) proposed by Davis (1989) and extended by Venkatesh & Davis (2000) provides a valuable lens to understand why certain digital services gain traction while others do not. The model identifies perceived usefulness and ease of use as critical factors driving user acceptance of technology. When applied to Timor Leste, these theories underscore the need to design user-friendly, culturally appropriate digital tools that are supported by adequate consumer education and service reliability.

Despite these available frameworks and previous empirical studies, current literature tends to focus on isolated aspects of the problem, such as digital literacy or telecom access, without offering a holistic view of the transformation process from a cash-based to a digital financial ecosystem. There is a lack of integrated research that combines macroeconomic, technological, behavioral, and regulatory perspectives in analyzing Timor Leste's financial transformation. This fragmentation of knowledge presents a significant research gap that this study seeks to address.

Additionally, much of the prior research has relied on cross-sectional data and high-level policy analyses without grounding the discussion in field-based evidence or stakeholder perspectives. There is limited exploration of the lived experiences of consumers, fintech operators, and government regulators navigating this transformation. This creates a

disconnect between national strategies and the realities on the ground, which can undermine the effectiveness of policy implementation and financial innovation.

Therefore, this study aims to fill these gaps by conducting a comprehensive and context-specific analysis of Timor Leste's financial system transformation. Using a qualitative approach supported by stakeholder interviews and secondary data, the research seeks to understand not only the systemic challenges but also the socio-cultural dynamics that shape financial behavior. By identifying critical enablers and inhibitors of digital financial inclusion, this research will provide actionable insights for policymakers, development partners, and financial institutions committed to building an inclusive and sustainable financial ecosystem in Timor Leste.

Ultimately, this study is expected to contribute to the academic discourse on financial inclusion in emerging economies while serving as a practical roadmap for stakeholders in Timor Leste. It emphasizes the need for a phased, participatory, and localized approach that aligns global best practices with national priorities and grassroots realities. In doing so, it reinforces the broader development goal of inclusive economic growth through equitable access to financial services.

METHODS

This study adopts a qualitative research approach with a descriptive-analytical method to explore the complex phenomenon of financial system transformation in Timor Leste. A qualitative approach is deemed appropriate due to the multifaceted nature of the issues being investigated, which span across technological, institutional, socio-cultural, and regulatory domains. The research aims to provide an in-depth understanding of the barriers, opportunities, and implementation strategies related to digital financial inclusion in the country.

Data collection was primarily based on secondary data sources and supported by semi-structured interviews with key stakeholders. Secondary data were obtained from official publications of the Banco Central de Timor-Leste (BCTL), government policy documents, reports from international organizations such as the World Bank, International Monetary Fund (IMF), United Nations Development Programme (UNDP), and the UN Capital Development Fund (UNCDF), as well as peer-reviewed academic literature and relevant statistical databases. These sources provided foundational insights into the current state of financial inclusion and the ongoing digital initiatives in the country.

To complement the documentary analysis, semi-structured interviews were conducted with five categories of informants: (1) Central Bank officials from BCTL, (2) commercial bank executives, (3) local fintech practitioners, (4) representatives from credit unions, and (5) community members who are users or potential users of financial services. These interviews aimed to capture diverse perspectives and lived experiences regarding the accessibility, usability, and trustworthiness of digital financial tools.

Additionally, field observations were conducted (where feasible) to validate documentary and interview data. These observations included visits to banking agents, fintech outlets, and rural communities to assess the availability and actual use of mobile

banking and payment technologies. Such observations provided contextual understanding of the infrastructure and social dynamics influencing digital adoption.

Data were analyzed using thematic analysis, a qualitative technique that enables the identification, categorization, and interpretation of recurring patterns within the data. The analytical process followed four steps: (1) transcription of interviews and compilation of documentary sources, (2) open coding to identify key themes such as infrastructure challenges, digital literacy, regulatory support, and user behavior, (3) axial coding to examine relationships among themes, and (4) synthesis into narrative explanations that reflect the lived realities and systemic conditions affecting financial inclusion.

The rigor of the study was maintained through triangulation of data sources, stakeholder validation, and continuous reflexivity during the research process. Ethical considerations were also observed by securing informed consent from all interview participants and ensuring data confidentiality. This methodological framework allows for a comprehensive and grounded exploration of the research problem while aligning with academic standards and practical relevance.

RESULTS AND DISCUSSION

Characteristics of a Cash-Based Economy in Timor Leste

The study found that the financial landscape of Timor Leste is still predominantly driven by cash transactions. According to the 2023 report from the Banco Central de Timor-Leste (BCTL), over 70% of daily transactions in the country are conducted using physical currency. This reliance is rooted in both structural and behavioral factors. Structurally, limited banking infrastructure—particularly in rural and remote areas—alongside dependence on cash-based social assistance and remittance systems have reinforced the dominance of cash. Behaviorally, strong cultural preferences for cash, distrust in formal financial institutions, and low levels of financial literacy contribute to this persistent pattern.

This cash-based system results in several inefficiencies. Firstly, transaction costs are high for users who must travel long distances to access banking services. Secondly, there are security risks associated with storing and transporting large sums of cash. Thirdly, small businesses and microenterprises often struggle to access credit due to the absence of digital transaction records. Lastly, the slow and manual nature of cash payments reduces economic efficiency, especially in government transfers and commercial activities.

Progress in Digital Financial Inclusion

Despite these challenges, the country has made notable progress in expanding digital financial access. Between 2019 and 2020, the number of financial access points increased by 200%, growing from 1,642 to 4,925 locations. Bank account ownership also rose from 57% in 2018 to 61% in 2020. One of the key drivers of this growth has been the adoption of agent-based models and mobile money services, particularly through initiatives led by Telemor Fintech, which introduced mobile e-wallets and digital loan platforms in collaboration with local credit unions.

Further support came from international development programs such as UNDP's INFUSE, which promoted branchless banking and mobile money research for rural

communities. The integration of these services has allowed underserved populations—especially those outside Dili—to access basic financial services via mobile phones, demonstrating the feasibility of leapfrogging conventional banking infrastructure.

Persistent Challenges in the Digital Transition

Despite measurable progress, the transition to a digitally inclusive financial system remains hindered by several structural and socio-cultural barriers. Infrastructure remains a major issue, particularly in remote regions where 4G connectivity is limited and electricity supply is unreliable. The network of ATMs and Point-of-Sale (POS) terminals is unevenly distributed across the country, restricting consistent access to digital payments.

Regulatory challenges also persist. The current fintech regulatory framework is still under development, which creates uncertainty for new market entrants and limits innovation. Mechanisms for consumer protection, data privacy, and dispute resolution are not yet fully institutionalized, which diminishes public confidence in digital financial platforms. Moreover, many platforms do not support local languages such as Tetum, which presents additional barriers to adoption.

Social and behavioral factors compound these issues. Digital and financial literacy remain low across large segments of the population, particularly among older generations. A 2022 UNCDF survey revealed that while mobile phone ownership exceeds 80%, the usage rate of digital financial services remains limited due to a lack of trust and understanding of how these platforms operate.

Opportunities for Transformative Growth

Despite these barriers, Timor Leste possesses key strengths that position it for digital financial transformation. A significant demographic dividend exists, with 60% of the population under the age of 30. This young population is more likely to adopt new technologies and drive the uptake of digital services. The high mobile penetration rate—combined with growing governmental and donor commitment to digitalization—forms a strong foundation for broader financial inclusion.

Government initiatives such as the National Digital Economy Strategy and BCTL's Financial Inclusion Roadmap demonstrate institutional willingness to support innovation. In addition, regulatory sandboxes are being piloted to test new fintech products in a controlled environment. These efforts, supported by international organizations such as the World Bank, ADB, and UNCDF, provide not only funding but also technical expertise.

Strategic Recommendations for Implementation

Based on these findings, the study suggests that the digital financial transformation in Timor Leste should follow a phased, five-year implementation strategy. This approach should prioritize infrastructure development—particularly in telecommunications and electricity—as the first step. Parallel to this, regulatory frameworks must be finalized and harmonized to foster innovation while ensuring consumer protection.

In tandem, massive investments in digital and financial literacy programs are needed, particularly those targeted at rural populations, women, and micro-entrepreneurs. The government can play a catalytic role by digitizing public sector transactions, such as social

assistance and civil servant salaries, which can build trust and generate demand for digital financial services.

In summary, while Timor Leste's transformation journey faces numerous challenges, it also presents immense opportunities. A coordinated, inclusive, and contextually adapted strategy will be crucial to building a resilient digital financial ecosystem that not only improves economic efficiency but also promotes equitable development.

CONCLUSION

This study concludes that Timor Leste's financial system remains predominantly cash-based, with over 70% of daily transactions relying on physical currency. This reliance has created inefficiencies, limited access to credit, and perpetuated financial exclusion, particularly in rural and underserved areas. Despite these challenges, significant progress has been made in expanding access to financial services. Between 2019 and 2020, access points increased by 200%, and mobile wallet initiatives have emerged as promising solutions. However, the transition toward digital financial inclusion faces multifaceted challenges, including inadequate infrastructure, low digital and financial literacy, incomplete regulatory frameworks, and socio-cultural resistance. These barriers highlight the need for a comprehensive, phased transformation strategy. Opportunities lie in Timor Leste's youthful population, high mobile phone penetration, and strong government and international support. A five-year strategic approach is recommended, focusing on digital infrastructure development, regulatory harmonization, public trust-building, and community-based education programs. By aligning global best practices with local realities, Timor Leste can successfully leapfrog traditional banking models and achieve inclusive financial development. Ultimately, digital financial inclusion has the potential to enhance economic participation, reduce poverty, and promote equitable growth across the country.

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