

Governance, compliance, and digital transformation: Pathways to sustainable people's credit funds in Vietnam

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Abstract: This study investigates the critical factors influencing the sustainability of People's Credit Funds (PCFs) in Vietnam, which are vital cooperative institutions for promoting financial inclusion in rural areas. Utilizing structural equation modeling (SEM) and survey data collected from 202 PCF employees across Northern, Central, and Southern Vietnam, the research assesses the impact of Governance Structure, Strategic Planning, Financial Compliance, and Information Management on institutional sustainability. The findings reveal that Financial Compliance has the most significant influence on PCF sustainability, followed by Information Management. Governance Structure and Strategic Planning also demonstrate positive, albeit smaller, significant effects. Notably, Information Management is found to partially mediate the relationship between Governance Structure and institutional sustainability, adding depth to the understanding of these interconnections. Based on these results, the study recommends that PCFs adopt International Financial Reporting Standards for Small and Medium Enterprises (IFRS for SMEs), invest in digital platforms, standardize governance practices, and implement risk-based strategic planning. These findings not only contribute to the existing microfinance literature but also offer practical, actionable insights for policymakers to enhance the resilience and effectiveness of PCFs in Vietnam's transitional economy.

Keywords: Financial compliance, Financial inclusion, Governance structure, Information management, Institutional sustainability, People's credit funds, Strategic planning.

1. Introduction

People's Credit Funds (PCFs) in Vietnam are cooperative financial institutions pivotal to fostering financial inclusion and socio-economic development, particularly in rural and underserved regions. Operating under principles of mutual assistance and democratic governance, PCFs enable members to act as both users and co-owners, providing affordable credit and savings services to enhance community welfare [1, 2]. As defined by Vietnam [3], PCFs aim to improve members' productive capacity and living standards through collective financial mechanisms [2]. Their role aligns with national strategies for sustainable development, addressing gaps left by commercial banks in serving low-income populations [4, 5].

Despite their significance, PCFs face mounting challenges that threaten their long-term sustainability. Intensifying competition from commercial financial institutions, evolving regulatory requirements, and the imperative for digital transformation expose operational vulnerabilities, including fragmented oversight, limited technological adoption, and inadequate human resource development [4, 5]. Institutional sustainability for PCFs extends beyond financial stability to encompass operational

resilience, effective risk management, and alignment with community needs, necessitating robust governance, transparent financial practices, and modernized systems [1, 6, 7].

This study investigates the determinants of PCF sustainability in Vietnam, focusing on governance structure, strategic planning, financial compliance, and information management. Using structural equation modeling (SEM) with survey data from 202 PCF employees across diverse regions (Northern, Central, and Southern Vietnam), the research examines how these factors influence institutional sustainability. The sample was selected using stratified sampling to ensure representation across rural and urban PCFs, enhancing the generalizability of findings within the Vietnamese context. By identifying key drivers and offering evidence-based recommendations, this study contributes to the literature on cooperative finance in transitional economies and provides actionable insights for policymakers and practitioners to strengthen PCFs' resilience and alignment with sustainable development goals [8, 9]. The findings bridge theoretical frameworks and practical strategies, addressing critical gaps in understanding PCF sustainability amidst modern financial challenges.

2. Literature Review

2.1. People's Credit Funds: Definition and Characteristics

People's Credit Funds (PCFs) in Vietnam are cooperative financial institutions rooted in principles of mutual assistance, democratic governance, and community development. As defined by Vietnam [3], PCFs are member-owned entities established to enhance productive capacity and welfare through collective financial services [2]. Members act as both users and co-owners, participating in decision-making via a "one person, one vote" mechanism, ensuring equitable governance regardless of capital contributions [1, 4]. This cooperative model distinguishes PCFs from commercial banks, as their capital is derived from member contributions rather than external shareholders, prioritizing social impact over profit maximization [5].

PCFs exhibit several defining characteristics. Legally, they operate as independent entities under the supervision of the State Bank of Vietnam (SBV), mobilizing deposits and extending credit within regulatory frameworks [2]. Their voluntary formation reflects community self-reliance, fostering trust and autonomy [4]. By focusing on underserved populations, particularly in rural areas, PCFs provide affordable credit and savings services, contributing to financial inclusion and poverty reduction [5]. However, challenges such as limited resources, weak internal controls, and slow technological adoption constrain their competitiveness and operational efficiency [1, 4].

2.2. Activities and Role in Sustainable Development

PCFs engage in diverse activities to support their members and communities. They mobilize capital through member deposits, borrowings from the SBV, and syndicated loans with the Cooperative Bank of Vietnam, ensuring liquidity and operational stability [2]. Lending primarily targets members, with provisions for non-members such as low-income households, subject to prudential limits and transparent reporting to the SBV [4]. Additional services, such as payment accounts, financial consultancy, and insurance agency roles, enhance their contribution to financial inclusion [5]. These activities align with PCFs' mission to support local economies and reduce socio-economic disparities.

Sustainable development, as conceptualized by Brundtland [10], emphasizes meeting present needs without compromising future generations [6]. For PCFs, sustainability entails balancing financial stability with social impact, requiring profitability, risk resilience, and reliable service delivery [7]. Key indicators include Return on Assets (ROA), Return on Equity (ROE), and Institutional Self-Sufficiency (ISS), reflecting financial health and operational autonomy [2, 8]. PCFs contribute to sustainable development by providing accessible financial services to smallholder farmers and micro-entrepreneurs, fostering job creation and community welfare [4, 5]. However, their sustainability is influenced by external factors (e.g., regulatory frameworks, technological infrastructure) and internal factors (e.g., governance, financial management) [8, 9, 11-14].

2.3. Determinants of PCF Sustainability

Empirical studies identify governance structure, strategic planning, financial compliance, and information management as critical drivers of sustainability in cooperative financial institutions. Effective governance enhances operational efficiency and risk management, enabling PCFs to navigate economic challenges and attract investment [15, 16]. Vietnam's Law on Credit Institutions provides a legal foundation for PCF governance, but fragmented oversight and limited board independence necessitate further reforms [2, 17]. Strategic planning is vital for setting long-term objectives and allocating resources efficiently. Adaptive planning enables PCFs to respond to market fluctuations, ensuring competitiveness and profitability [1, 18]. However, the effectiveness of strategic planning in PCFs remains underexplored, particularly in integrating sustainability goals [19].

Financial compliance, including adherence to international standards (e.g., IFRS for SMEs) and independent audits, builds stakeholder trust and mitigates risks [20, 21]. Transparent reporting reduces credit risks and operational losses, as evidenced in regions like Dong Nai and Thanh Hoa [17]. Similarly, robust information management systems enhance operational efficiency by ensuring accurate, transparent data handling, which is critical for credit risk analytics and regulatory compliance [22, 23]. These systems bridge governance and compliance, addressing systemic challenges such as bad debt accumulation [17]. Collectively, these factors shape PCFs' ability to balance financial stability and social impact, aligning with broader sustainable development objectives [11, 13, 14].

2.4. Hypotheses and Research Model

Based on the literature, this study proposes four hypotheses:

- H1: Governance structure (BC) positively influences institutional sustainability (TC) of PCFs [15, 16].
- H2: Strategic Planning (CT) positively affects the Institutional Sustainability (TC) of PCFs [1, 18, 19].
- H3: Financial Compliance (KH) positively influences Institutional Sustainability (TC) of PCFs [17, 20, 21].
- H4: Information Management (QL) positively affects Institutional Sustainability (TC) of PCFs [22, 23].

The research model (Figure 1) posits that BC, CT, KH, and QL directly influence TC, with QL potentially mediating the relationship between BC and TC. This framework integrates governance, compliance, and digital transformation to explain PCF sustainability in Vietnam's transitional economy.

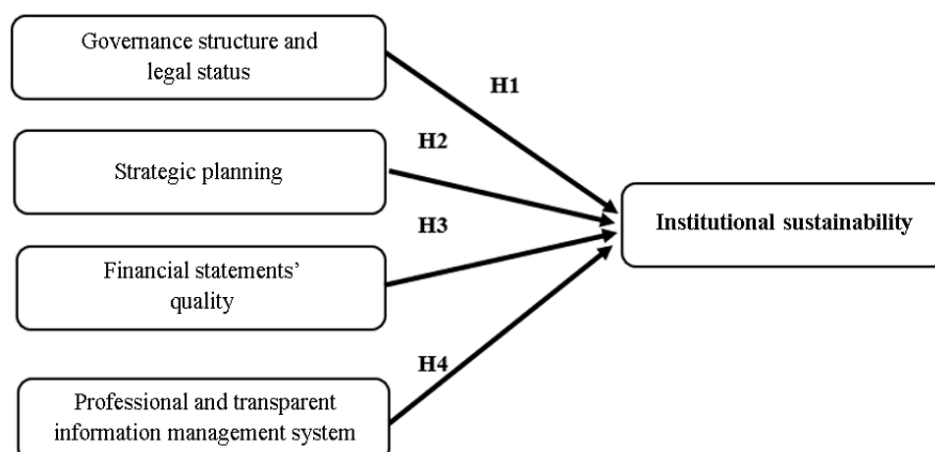


Figure 1.
Research Model.

3. Methodology

3.1. Research Sample

This study surveyed 202 employees from PCF across Vietnam, using stratified sampling to ensure representation from Northern (40%), Central (30%), and Southern (30%) regions, encompassing both rural and urban PCFs. The sample comprised 52% females (105 respondents) and 48% males (97 respondents), with age distributions as follows: 28.8% under 35 years (42 respondents), 27.7% aged 35–45 (56 respondents), 38.1% aged 46–55 (77 respondents), and 13.4% over 55 (27 respondents). Educational qualifications included 39.6% with bachelor's degrees (80 respondents), 45.1% with master's degrees (91 respondents), and 15.3% with doctorates (31 respondents). Professional roles were diverse: Directors (21.8%, 44 respondents), Staff/Professionals (28.2%, 57 respondents), Middle Managers (23.8%, 48 respondents), Supervisory Board Members (17.8%, 36 respondents), and Board Members (8.4%, 17 respondents). Tenure distribution was 20.3% with less than 3 years (41 respondents), 53% with 3–10 years (107 respondents), and 26.7% with over 10 years (54 respondents). This diversity ensures comprehensive perspectives on governance, strategic planning, financial compliance, and information management, enhancing the validity of responses [24].

3.2. Data Collection

Data were collected from October to December 2024 using a structured questionnaire adapted from validated scales [1, 15–17, 20–23, 25, 26] with minor modifications to suit the PCF context. The questionnaire was pilot-tested with 20 respondents to ensure clarity and reliability, with feedback incorporated to refine the instrument. Of 250 distributed questionnaires, 202 valid responses were obtained (80.8% response rate), which is sufficient for PLS-SEM analysis given the model's complexity [24]. A five-point Likert scale (1 = strongly disagree, 5 = strongly agree) measured constructs: Governance Structure (BC), Strategic Planning (CT), Financial Compliance (KH), Information Management (QL), and Institutional Sustainability (TC). The TC1 indicator was excluded due to a low outer loading (<0.7) during preliminary analysis, ensuring construct convergence without compromising model validity (see Supplementary Material for sensitivity analysis) [24].

3.3. Data Analysis

Structural Equation Modeling (SEM) with Partial Least Squares (PLS) estimation, using SmartPLS 4.0, was employed due to its suitability for exploratory research and moderate sample sizes [24]. The analysis proceeded in two stages: (1) Measurement Model Evaluation, assessing indicator reliability (outer loadings >0.7), convergent validity (AVE >0.5), discriminant validity (Fornell-Larcker criterion and HTMT ratio <0.85), and internal consistency (Cronbach's Alpha and Composite Reliability >0.7); and (2) Structural Model Evaluation, testing path coefficients, t-statistics, and p-values for hypotheses H1–H4. Common method bias was assessed using the Full Collinearity Test, with all indicator VIFs below 3.3, confirming no bias [24]. Multicollinearity among constructs was checked via VIF values (<3), and model fit was evaluated using the Standardized Root Mean Square Residual (SRMR <0.08). Mediation effects were tested using bootstrapping (5,000 samples) to explore indirect relationships (e.g., QL mediating BC \rightarrow TC). Cross-loadings were analyzed to ensure indicator specificity (see Supplementary Material). These rigorous procedures ensure robust and reliable findings, aligning with best practices in PLS-SEM [24].

4. Results

4.1. Measurement Model

The measurement model was evaluated to ensure the reliability and validity of the constructs: Governance Structure (BC), Strategic Planning (CT), Financial Compliance (KH), Information Management (QL), and Institutional Sustainability (TC). Outer loadings for all indicators, except TC1, exceeded 0.7, confirming indicator reliability (Table 1). TC1 was excluded due to a low outer loading

(<0.7) in preliminary analysis, with sensitivity tests showing minimal impact on model outcomes (see Supplementary Material) [24].

Table 1.
Outer Loadings.

Indicator	BC	CT	KH	QL	TC
BC1	0.876				
BC2	0.884				
BC3	0.901				
CT1		0.882			
CT2		0.875			
CT3		0.884			
KH1			0.883		
KH2			0.870		
KH3			0.891		
QL1				0.895	
QL2				0.869	
QL3				0.870	
TC1					-
TC2					0.871
TC3					0.894

Cronbach's Alpha (0.841–0.855) and Composite Reliability (0.909–0.917) surpassed 0.7, indicating strong internal consistency (Table 2). Convergent validity was established with Average Variance Extracted (AVE) values ranging from 0.757 to 0.773, exceeding 0.5 (Table 2). Discriminant validity was confirmed via the Fornell-Larcker criterion, with square roots of AVE greater than inter-construct correlations (Table 3), and the Heterotrait-Monotrait (HTMT) ratio, with all values below 0.85 (Table 4). Cross-loadings further validated indicator specificity, with each indicator loading highest on its respective construct (see Supplementary Material). The Full Collinearity Test yielded indicator VIFs below 3.3, confirming no common method bias [24].

Table 2.
Construct Reliability and Validity

Construct	Cronbach's Alpha	Composite Reliability	AVE
BC	0.855	0.917	0.773
CT	0.845	0.911	0.761
KH	0.846	0.912	0.763
QL	0.841	0.909	0.757
TC	0.846	0.912	0.763

Table 3.
Fornell-Larcker Criterion.

	BC	CT	KH	QL	TC
BC	0.896				
CT	0.433	0.889			
KH	0.549	0.545	0.890		
QL	0.613	0.484	0.569	0.887	
TC	0.636	0.590	0.753	0.695	0.890

Table 4.
Heterotrait-Monotrait (HTMT) Ratio.

	BC	CT	KH	QL	TC
BC					
CT	0.451				
KH	0.572	0.568			
QL	0.639	0.506	0.593		
TC	0.662	0.615	0.784	0.723	

4.2. Structural Model

The structural model tested hypotheses H1–H4, with results summarized in Table 5. All hypotheses were supported: Governance Structure (H1: $\beta = 0.176$, $p = 0.006$, $f^2 = 0.057$), Strategic Planning (H2: $\beta = 0.161$, $p = 0.016$, $f^2 = 0.054$), Financial Compliance (H3: $\beta = 0.412$, $p < 0.001$, $f^2 = 0.304$), and Information Management (H4: $\beta = 0.279$, $p = 0.002$, $f^2 = 0.135$) positively influenced institutional sustainability. Financial compliance exhibited the strongest effect, followed by information management, while governance structure and strategic planning had smaller but significant impacts.

Table 5.
Structural Model Results.

Path	β	Mean	SD	T-Statistic	P-Value
BC \rightarrow TC	0.176	0.177	0.068	2.654	0.006
CT \rightarrow TC	0.161	0.160	0.069	2.388	0.016
KH \rightarrow TC	0.412	0.407	0.093	4.537	0.000
QL \rightarrow TC	0.279	0.282	0.086	3.338	0.002

The model explained 68.2% of the variance in Institutional Sustainability ($R^2 = 0.682$, Adjusted $R^2 = 0.673$), indicating strong explanatory power. The Standardized Root Mean Square Residual (SRMR = 0.065) confirmed a good model fit [24]. Variance Inflation Factors (VIFs) ranged from 1.481 to 1.810, indicating no multicollinearity (Table 6).

Mediation analysis (bootstrapping, 5,000 samples) revealed that Information Management partially mediates the relationship between Governance Structure and Institutional Sustainability (indirect effect: $\beta = 0.082$, $p = 0.032$), thereby enhancing the model's theoretical depth. No significant mediation was found for other paths.

Table 6.
Collinearity and Effect Sizes.

Construct	VIF	f^2
BC	1.706	0.057
CT	1.481	0.054
KH	1.759	0.304
QL	1.810	0.135
TC	$R^2: 0.682$	Adjusted $R^2: 0.673$

5. Discussion

The findings confirm that Financial Compliance (KH, $\beta = 0.412$, $p < 0.001$) exerts the strongest influence on Institutional Sustainability (TC) of People's Credit Funds (PCFs), followed by Information Management (QL, $\beta = 0.279$, $p = 0.002$), Governance Structure (BC, $\beta = 0.176$, $p = 0.006$), and Strategic Planning (CT, $\beta = 0.161$, $p = 0.016$). These results align with prior studies emphasizing the pivotal role of financial transparency and regulatory adherence in sustaining cooperative financial institutions [15, 17, 20]. The strong effect of financial compliance underscores the importance of transparent reporting and independent audits in building stakeholder trust and mitigating risks, consistent with evidence from microfinance institutions in Vietnam and globally [4, 17]. This finding

extends Lassoued's [15] work on financial stability in cooperative banking, highlighting compliance as a cornerstone of sustainability in transitional economies [15].

Information Management's significant impact and partial mediation of the Governance Structure–Sustainability relationship ($\beta = 0.082$, $p = 0.032$) emphasize its role as a strategic enabler. Robust information systems facilitate data-driven decision-making and regulatory compliance, addressing systemic challenges like bad debt accumulation, as noted in Vietnamese PCFs [17, 23]. This aligns with Adonis [22], who underscored the importance of information management in enhancing operational efficiency [22]. Governance structure and strategic planning, while significant, exhibit smaller effects ($f^2 = 0.057$ and 0.054 , respectively), suggesting they serve as foundational elements that require integration with compliance and information systems to maximize impact. This finding contrasts with studies prioritizing governance over compliance in developed markets, indicating context-specific dynamics in Vietnam's cooperative sector [16]. The prioritization of financial compliance and information management offers a replicable model for cooperative financial institutions in other transitional economies, such as Indonesia or Cambodia, where similar regulatory and digitalization challenges prevail [11].

The model's explanatory power ($R^2 = 0.682$) demonstrates robust predictive capacity, comparable to studies on microfinance sustainability [13, 14]. However, the smaller effects of Governance Structure and Strategic Planning suggest a need for tailored strategies to enhance their impact in PCFs. The Vietnamese context, characterized by regulatory transitions and digitalization pressures, amplifies the role of compliance and information management [4, 11]. These insights contribute to the microfinance literature by identifying prioritized drivers of sustainability in cooperative models, offering a framework applicable to other transitional economies [8, 9]. Limitations, such as the exclusion of TC1 and the Vietnam-specific sample, warrant further exploration to enhance generalizability, as discussed in the conclusion.

6. Practical Implications

The findings highlight Financial Compliance ($\beta = 0.412$, $p < 0.001$) and Information Management ($\beta = 0.279$, $p = 0.002$) as the primary drivers of People's Credit Funds (PCFs) sustainability, with Governance Structure ($\beta = 0.176$, $p = 0.006$) and Strategic Planning ($\beta = 0.161$, $p = 0.016$) playing supportive roles. These results offer actionable recommendations for PCF managers and policymakers to enhance institutional resilience and align with sustainable development goals in Vietnam's cooperative finance sector.

1. Strengthen financial compliance: PCFs should adopt International Financial Reporting Standards for Small and Medium-sized Enterprises (IFRS for SMEs) to ensure transparent and standardized financial reporting, as supported by evidence from microfinance institutions [20]. Regular independent audits, mandated by the State Bank of Vietnam, can mitigate credit risks and enhance stakeholder trust, particularly in regions like Dong Nai and Thanh Hoa, where compliance gaps have led to operational losses [17].

2. Enhance information management systems: Investing in digital platforms for credit risk analytics and regulatory reporting is critical. Robust systems enable data-driven decision-making and compliance with evolving regulations, addressing systemic issues like bad debt accumulation [22, 23]. PCFs should prioritize cloud-based solutions to improve operational efficiency, drawing on successful digitalization efforts in Asian microfinance [11].

3. Professionalize governance structures: Developing standardized governance codes, including clear board responsibilities and independent oversight, can strengthen accountability and risk management [15]. Training programs for board members and managers, supported by the Cooperative Bank of Vietnam, should focus on aligning governance with sustainability objectives [4].

4. Adopt Dynamic Strategic Planning: PCFs should implement risk-based strategic planning that integrates compliance and digitalization goals. Adaptive strategies, responsive to market and regulatory

changes, can enhance competitiveness and long-term viability [1, 18]. Policymakers should facilitate capacity-building initiatives, such as workshops and technical assistance, to standardize these practices across PCFs, ensuring alignment with Vietnam's sustainable development agenda [2, 11].

These recommendations provide a roadmap for PCFs to navigate competitive and regulatory challenges, fostering resilience and contributing to financial inclusion and socio-economic development in Vietnam [1, 8].

7. Conclusion

This study confirms that Financial Compliance ($\beta = 0.412$, $p < 0.001$) and Information Management ($\beta = 0.279$, $p = 0.002$) are the primary drivers of Institutional Sustainability for People's Credit Funds (PCFs) in Vietnam, with Governance Structure ($\beta = 0.176$, $p = 0.006$) and Strategic Planning ($\beta = 0.161$, $p = 0.016$) providing foundational support. The partial mediation of Information Management in the Governance–Sustainability relationship ($\beta = 0.082$, $p = 0.032$) underscores its strategic role in enhancing operational efficiency and regulatory adherence. The model's robust explanatory power ($R^2 = 0.682$, $SRMR = 0.065$) offers reliable insights into PCF sustainability, contributing to the microfinance literature by identifying prioritized drivers in a cooperative context [1, 8, 13, 15]. These findings provide a framework for strengthening PCFs' resilience in transitional economies, aligning with sustainable development goals [2, 11].

Limitations include the exclusion of the TC1 indicator due to low outer loading, potentially affecting the Institutional Sustainability construct's comprehensiveness, though sensitivity analysis confirmed minimal impact (see Supplementary Material). The Vietnam-specific sample limits generalizability, necessitating further research in other cooperative finance contexts. Future studies should incorporate additional indicators, explore dynamic regulatory impacts, and test the model in diverse economic settings to enhance applicability [4, 9]. Developing visual models and integrating advanced digital tools could further refine PCF sustainability strategies, fostering financial inclusion and socio-economic development [11, 23].

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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