Organizational and external determinants of financial sustainability in Vietnam's people's credit funds: A structural equation modeling approach

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Abstract

This study investigates the key organizational determinants influencing the financial sustainability of Vietnam's People's Credit Funds, which serve a foundational role in grassroots finance by mobilizing local capital and fostering rural economic stability. Despite their importance, significant gaps persist in understanding the factors crucial for their long-term viability, especially concerning the interplay between internal capacities and discretionary financial behaviors in a changing policy environment. To address this, the research employs a quantitative methodology, analyzing survey data from 269 managers, staff, and board members of People's Credit Funds across diverse regions in Vietnam. Structural Equation Modeling was used to test a hypothesized model featuring six core constructs: organizational capacity, operational efficiency, loan portfolio management, governance quality, client outreach, and transparency. The findings confirm that all six factors positively and significantly influence financial sustainability. Specifically, governance quality was identified as the most critical determinant, followed by operational efficiency and effective loan portfolio management. Organizational capacity, client outreach, and transparency also demonstrated significant positive effects on financial resilience. These results provide a comprehensive empirical framework and offer actionable insights for regulators, policymakers, and practitioners to strengthen governance, guide strategic management, and ensure People's Credit Funds remain viable in a dynamic economic landscape.

1. Introduction

People's Credit Funds (PCFs) in Vietnam have consistently fulfilled an essential role as a foundational model of grassroots finance. These institutions have effectively mobilized idle capital from the population and redirected it into productive and consumption-oriented lending. In addition to their financial utility, PCFs serve as catalysts for social development by reinforcing communal solidarity, reducing dependence on informal lending networks, and supporting economic stability in rural areas. Over the years, PCFs have been subject to significant institutional transformation, particularly under the framework of Decision No. 1058/QD-TTg dated July 19, 2017. This decision outlines a strategic program aimed at restructuring the national credit institution system while simultaneously addressing issues related to non-performing loans. In response, PCFs have undertaken organizational reforms to enhance their operational effectiveness and strengthen financial resilience. Several key financial metrics, including charter capital, mobilized funds, outstanding loan balances, liquidity reserves, membership growth, and the ratio of non-performing loans, have shown substantial improvement across different regions. Notably, many PCFs have maintained non-performing loan ratios at levels approaching zero.

A considerable body of academic research has emerged to explore the determinants of financial sustainability among PCFs in Vietnam. Investigations in the Mekong Delta region indicate that capital sufficiency and income generation positively influence long-term sustainability, while excessive credit growth and elevated levels of non-performing loans negatively affect it. Additional studies have emphasized the importance of financial literacy, governance capacity, and macroeconomic stability in shaping institutional performance. Research contributions by Schaltegger et al. [1] and Kaiser and Lusardi [2] expand the theoretical discussion by proposing frameworks that underscore the relevance of financial education, operational transparency, and sound governance practices within microfinance institutions. Further empirical work by Pham [3] and Phan and Tran [4] reinforces the argument that managerial competence, leadership quality, and efficient financial management are critical to enhancing institutional resilience and ensuring sustainable development.

Nevertheless, important gaps remain in the existing literature. One such gap is the limited exploration of how discretionary financial behaviors affect long-term sustainability. This includes behaviors such as earnings management, selective financial disclosures, and decisions regarding the allocation of dividends. Moreover, there is a lack of integrated analysis concerning the interplay between cash holding policies, capital adequacy, client outreach strategies, and the exercise of managerial discretion in the context of Vietnam's unique socio-economic and legal conditions. Recent developments in policy reform, the introduction of digital technologies, and the occurrence of external shocks such as the COVID-19 pandemic have created new layers of complexity and strategic opportunities that are insufficiently addressed in current research. Without a comprehensive understanding of these dimensions, it is difficult to evaluate the performance of PCFs using metrics comparable to those applied in the commercial banking sector. This limitation constrains the development of practical and regulatory approaches aimed at securing their financial sustainability.

In light of these gaps, the present study seeks to investigate the core factors that determine financial sustainability among PCFs in Vietnam. By drawing upon foundational theories in financial sustainability, microfinance, and banking performance, this research examines the influence of organizational capacity, operational efficiency, loan portfolio management, quality of governance, financial transparency, dividend policy, discretionary managerial behavior, liquidity strategies, and capital structure on financial resilience. The study employs rigorous quantitative methodologies and utilizes a nationally representative dataset to construct an empirical model that captures the complex interactions among financial, managerial, and institutional variables. The results are expected to enrich the theoretical understanding of sustainability in the microfinance sector and provide actionable insights for regulators, policymakers, and practitioners. These insights can serve to strengthen regulatory systems, improve institutional governance, and guide strategic management efforts to ensure that PCFs remain viable and effective in a rapidly changing economic and social environment.

The structure of this paper is organized as follows. The next section presents a comprehensive review of the existing literature, with particular attention to financial sustainability theory, microfinance mechanisms, and discretionary financial behavior. Following this, the methodology section outlines the research design, data collection procedures, and analytical techniques employed in the study. The results section presents the empirical findings in detail. This is followed by a discussion section that interprets the results in the context of prior research. The final section concludes by summarizing the theoretical contributions, practical implications, and suggestions for future research directions.

2. Literature Review and Proposed Hypotheses

2.1. Definitions

Financial sustainability is defined by Merriam-Webster Dictionary as the capacity of an organization, individual, or nation to manage and maintain its financial resources over the long term without jeopardizing its ability to meet future financial obligations. This concept emphasizes the efficient utilization of resources, the ability to replenish financial capital, and the maintenance of long-term fiscal health without imposing burdens on future generations.

According to the Law on Credit Institutions [5]. PCFs are non-profit credit institutions voluntarily established by businesses, individuals, or households in the form of cooperatives. The core objective of these entities is to support mutual production and business development, and to improve members' living standards. Operating based on cooperation principles, members contribute to and benefit from the financial activities of the fund.

2.2. Fundamental Theories

2.2.1. Microfinance Theory

Microfinance Theory centers on the provision of financial services to individuals or groups with low income who are

typically excluded from access to formal financial systems [6, 7]. It emphasizes the importance of delivering fundamental financial tools, including microcredit, savings facilities, and insurance services [6]. By extending such services, microfinance promotes financial inclusion and supports the economic participation of disadvantaged communities. The ultimate objective of this approach is to alleviate poverty by offering financial instruments that improve household welfare, enhance entrepreneurial opportunities, and contribute to broader economic stability [7-9].

Within this theoretical framework, MFIs play a critical role as intermediaries that serve low-income clients. These institutions often utilize lending methodologies specifically designed to accommodate the needs of borrowers who lack access to collateral or formal credit histories. Common practices include group-based lending and unsecured credit arrangements [8]. The theory also underscores the significance of improving financial literacy among borrowers, as this fosters better personal financial management and strengthens borrowers' ability to utilize financial resources effectively [6]. Through the provision of accessible financial services and the promotion of financial education, MFIs seek to empower individuals and communities who have traditionally been excluded from the formal financial system [10, 11].

In the Vietnamese context, this theory is particularly relevant, as PCFs share objectives and functions similar to MFIs. PCFs operate at the grassroots level and provide financial services to populations that traditional banks often underserve. The application of microfinance theory enables a comprehensive understanding of how PCFs contribute to sustainable development and inclusive financial systems. It also provides a theoretical lens through which to analyze the determinants of financial sustainability in PCFs and assess their role in enhancing the economic resilience of local communities [12].

2.2.2. Financial Sustainability Theory

Financial Sustainability Theory focuses on the ability of an organization to maintain long-term financial viability while continuing to fulfill its mission and meet its operational responsibilities [13]. This theory involves the strategic and prudent management of financial resources to ensure institutional continuity, particularly under conditions characterized by economic uncertainty, regulatory change, or shifting policy environments [14].

Several core dimensions underpin the concept of financial sustainability. These include profitability, which ensures the generation of financial surpluses; liquidity, which provides the capacity to meet immediate financial obligations; capital adequacy, which serves as a buffer against unforeseen losses; and risk management, which helps institutions minimize exposure to financial and operational risks [15]. For microfinance institutions, including PCFs, financial sustainability entails the ability to recover costs and maintain operations without compromising service delivery to economically vulnerable groups [14].

The theory also emphasizes the importance of revenue diversification, operational efficiency, effective capital utilization, and adaptability in response to external pressures, such as changes in legislation or macroeconomic conditions. These elements are particularly important for non-profit and community-based financial organizations, whose sustainability depends not only on economic performance but also on the capacity to align financial practices with social missions [14].

In the case of Vietnam, this theoretical perspective offers a valuable foundation for evaluating the long-term viability of PCFs. By applying the principles of financial sustainability, researchers and policymakers can identify mechanisms to optimize resource allocation, enhance institutional resilience, and mitigate the impact of external disruptions. This framework provides insight into how PCFs can maintain operational integrity while contributing meaningfully to the socio-economic advancement of the communities they serve.

2.3. Hypotheses and Research Model
2.3.1. Organizational Capacity

Organizational capacity is a multidimensional construct encompassing the resources, capabilities, and operational processes of an institution, all of which influence employee behavior in achieving organizational objectives [16]. It includes key elements such as human resources, financial planning, leadership, infrastructure, and stakeholder engagement [16]. This capacity is directly linked to financial sustainability, defined as an organization's ability to meet its expenditures through internally generated revenues and diversified funding sources [17]. Strengthening organizational capacity enhances financial planning, optimizes resource allocation, and improves fund mobilization efficiency [18]. Additionally, it fosters institutional adaptability and innovation, which are critical for developing alternative revenue streams and responding to financial shortfalls, thereby enhancing long-term financial sustainability [19].

Hypothesis 1: Organizational capacity positively affects financial sustainability.

2.3.2. Operational Efficiency

Operational efficiency refers to an organization's capacity to deliver services or outputs while utilizing the least possible amount of resources, all without compromising on quality [20]. Within the realm of microfinance, operational efficiency is commonly evaluated through indicators such as the operating expense ratio and the cost per borrower. Higher levels of operational efficiency are generally associated with improved profitability and a reduced reliance on external sources of financial support [21]. By minimizing administrative and operational costs while optimizing the use of internal processes, financial institutions can allocate greater resources to service expansion and investment. This, in turn, contributes meaningfully to long-term financial sustainability [22].

Hypothesis 2: Operational efficiency positively affects financial sustainability.

2.3.3. Loan Portfolio Management

Effective loan portfolio management constitutes a core element of financial sustainability in People's Credit Funds. This process involves evaluating credit risk, monitoring loan performance, and implementing appropriate collection strategies aimed at minimizing the proportion of non-performing loans and enhancing overall asset quality. Empirical research has demonstrated that variables such as loan size, the intensity of lending activities, and the effectiveness of debt recovery measures significantly influence the financial viability of microfinance institutions [23]. Nevertheless, in practice, many PCFs in Vietnam face persistent challenges due to inadequately designed credit assessment mechanisms and permissive loan approval procedures. These weaknesses frequently result in elevated default rates and financial instability [24]. To mitigate such risks, it is essential to strengthen internal control systems, adopt rigorous credit policies, and conduct routine internal audits. These actions support a more resilient financial structure and help secure sustainable institutional performance [25].

Hypothesis 3: Loan portfolio management positively affects financial sustainability.

2.3.4. Governance Quality

Governance quality exerts a substantial influence on the financial sustainability of PCFs. Institutions that are governed with transparency and accountability are better positioned to manage operational risks, make sound strategic decisions, and maintain the confidence of stakeholders. According to Hartarska [26], robust governance practices are positively correlated with the financial performance of microfinance institutions. Conversely, PCFs that have been placed under special control due to governance failures often experience administrative mismanagement, escalating non-performing loans, and, in some cases, fraudulent activities committed by executives [23]. To counteract such vulnerabilities, it is necessary to implement governance structures based on ethical leadership, adherence to regulatory requirements, and the establishment of mechanisms for internal accountability. Furthermore, the adoption of sustainable and socially responsible lending practices, such as environmentally focused credit strategies, has been associated with enhanced institutional stability through better risk management outcomes [27].

Hypothesis 4: Governance quality positively affects financial sustainability.

2.3.5. Client Outreach

Client outreach represents a critical factor in driving financial sustainability among PCFs. Expanding the client base not only increases revenue through broader lending activity but also contributes to the diversification of the loan portfolio, which in turn mitigates the concentration of risk [28]. A larger and more diverse borrower pool, particularly when it includes demographic segments with strong repayment behavior, such as female borrowers, can enhance financial performance and institutional resilience. In addition, diversification across various sectors and customer groups reduces exposure to market volatility and lessens the likelihood of systemic loan default. This is especially important in avoiding over-reliance on high-growth industries that may become unstable or oversaturated over time [3].

Hypothesis 5: Client outreach positively affects the financial sustainability of PCFs.

2.3.6. Transparency

Transparency in financial and operational matters is indispensable for maintaining stakeholder trust, ensuring institutional accountability, and attracting long-term funding. Practices that promote transparency, including the publication of audited financial statements and the provision of clear financial disclosures, enable stakeholders to make informed decisions and monitor the organization's performance effectively [29]. Moreover, transparency contributes to the reduction of corruption by increasing the visibility of financial transactions and decision-making processes, which in turn discourages fraudulent behavior and mismanagement [30]. For PCFs, which are often subject to public attention and regulatory oversight, strengthening transparency is not only a regulatory necessity but also a strategic imperative to achieve sustainable growth and financial resilience.

Hypothesis 6: Organizational transparency positively affects the financial sustainability of PCFs.
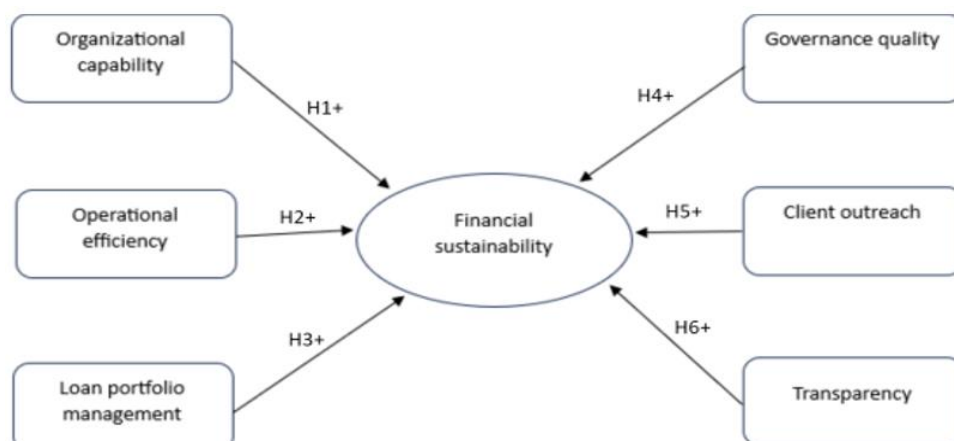

Figure 1.
Research Model.

3. Methodology and Research Design

3.1. Data Collection Method

To explore factors influencing financial sustainability in Vietnam's PCFs, a structured survey was conducted targeting managers, staff, and employees across various regions. Respondents were selected based on fund size, location, and operational maturity to ensure broad representation. A hybrid sampling method, simple random sampling combined with snowball sampling, was used to reach knowledgeable participants. After collection, the data were cleaned based on completion time, consistency, and plausibility to ensure validity and reliability.

3.2. Questionnaire Design and Variables

The questionnaire comprised two sections. The first captured demographic information (age, gender, education, position, and experience). The second measured six constructs aligned with the research hypotheses: H1 – Organizational Capacity: Internal capabilities and adaptability; H2 – Operational Efficiency: Productivity and resource utilization; H3 – Loan Portfolio Management: Risk control and allocation strategies; H4 – Governance Quality: Oversight and decision-making; H5 – Customer Outreach: Market access and diversification; H6 – Transparency: Information disclosure and trust.

Each item was rated on a 5-point Likert scale. A pilot test was conducted to refine clarity and neutrality. Reliability was ensured via Cronbach's alpha ($\alpha \geq 0.70$), and content validity was verified by referencing established literature and frameworks.

3.3. Data Analysis Method

Descriptive statistics summarized demographic and construct-level data. Reliability was confirmed through Cronbach's alpha, and EFA was used to explore factor structures, eliminating items with loadings below 0.50. CFA was conducted using AMOS, and model fit was assessed with indices such as CFI, TLI (> 0.90), and RMSEA (< 0.08). Convergent validity was confirmed with AVE values > 0.50.

Structural Equation Modeling (SEM) was used to test the hypothesized relationships (H1–H6). Standardized path coefficients, significance levels, and R^2 values were analyzed. Model assumptions, linearity, independence, homoscedasticity, and absence of multicollinearity were verified to ensure robustness and explanatory power.

4. Research Results

4.1. Demographic Characteristics of Survey Respondents

To ensure broad data coverage and representation, data were collected through an online survey disseminated across various social media platforms using a snowball sampling technique. This approach encouraged participants to share the questionnaire within their professional networks, thereby increasing reach and diversity. The target respondents included staff members, employees, and managers of PCFs across Vietnam. This sampling strategy contributed to the heterogeneity and representativeness of the dataset.

Table 1.
Demographic Statistics of Respondents.

No	Variable		Frequencies	Percentage
1	Gender	Male	112	41.64%
		Female	157	58.36%
2	Age	Under 35	122	45.35%
		35-45	91	33.83%
		46-55	37	13.75%
		Above 55	19	7.06%
3	Job	Member of the Board of Directors	87	32.34%
		Member of the Supervisory Board	34	12.64%
		Director	33	12.27%
		Accountant	21	7.81%
		Employee	29	10.78%
		Other	65	24.16%
4	Education Level	High School	7	2.60%
		Bachelor's Degree	235	87.32%
		Master's Degree	20	7.43%
		Doctorate	7	2.60%
5	Years of Experience	Less than 3 years	80	29.74%
		3–10 years	55	20.43%
		Over 10 years	134	49.81%

The survey was conducted over a four-month period, from September 2024 to January 2025. A total of 312 responses were received, of which 269 were deemed valid for analysis. Among the valid respondents, 58.36% were female, and 41.64% were male. In terms of age distribution, the largest proportion of respondents (45.35%) was under 35 years old, followed by those aged 35 to 45 (33.83%). Regarding job positions, 32.34% of respondents were members of the Board of

Directors, 12.64% were members of the Supervisory Board, and 12.27% held director-level positions. The survey also captured other demographic information, such as work experience and job tenure, providing a comprehensive view of the participants' backgrounds. These variations across demographic groups offer a valuable basis for further analysis of how such factors may influence perceptions and assessments related to the financial sustainability of PCFs.

4.2. Reliability and Suitability of the Measurement Model

Tables 2 and 3 present key statistical indicators used to assess the reliability and appropriateness of the quantitative dataset, thereby confirming the quality of the constructed measurement instruments.

Table 2.
Reliability Testing of Measurement Scales.

Ratio	Number of observed variables that meet the requirements	Minimum item-total correlation coefficient	Cronbach's Alpha
Organizational capacity	04	0.636	0.827
Operational efficiency	04	0.621	0.836
Loan portfolio management	04	0.627	0.819
Quality of Governance	03	0.541	0.753
Customer Accessibility	04	0.627	0.819
Transparency of the Organization	03	0.537	0.747
Financial sustainability	04	0.638	0.841

The analysis of internal consistency reveals the following insights: All measurement scales demonstrated Cronbach's Alpha values of 0.7 or above, indicating acceptable to high levels of internal consistency. Notably, the Financial Sustainability scale recorded the highest reliability with a Cronbach's Alpha of 0.841, reflecting strong internal coherence among its observed variables. In contrast, the Organizational Transparency scale, while still acceptable with a value of 0.747, showed the lowest reliability and may benefit from refinement to strengthen the coherence among items. This indicator evaluates the contribution of each item to the overall scale. A minimum threshold of 0.3 is recommended, with higher values indicating stronger contributions. The results indicate that all items surpassed this threshold. The Financial Sustainability construct recorded the highest minimum item-total correlation (0.638), underscoring the robustness of its observed indicators. Conversely, Organizational Transparency had the lowest minimum correlation (0.537), suggesting weaker contributions from individual items to the construct's overall consistency. The adequacy of each measurement construct was also examined in terms of the number of items retained. Scales such as Organizational Capacity, Operational Efficiency, Loan Portfolio Management, and Customer Outreach retained four valid items each, ensuring sufficient coverage of the respective constructs. In contrast, the Governance Quality and Organizational Transparency constructs retained only three valid items, which may limit the extent to which these dimensions are comprehensively captured.

The KMO value was 0.828 ($\geq$ 0.8), indicating a high degree of sampling adequacy and sufficient inter-item correlations, which are appropriate for conducting factor analysis. The test yielded a Chi-square value of 2281.230 with a significance level of $p < 0.001$. This result rejects the null hypothesis that the correlation matrix is an identity matrix, thereby confirming that sufficient correlations exist among the items to justify factor analysis. The extracted factors explained 66.9% of the total variance, well above the minimum acceptable threshold of 50%. This suggests that the retained factors account for a substantial proportion of the data's variance, enhancing both the statistical validity and practical utility of the proposed research model.

Table 3.
Results of Measurement Validity Testing.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.828
Bartlett's Test of Sphericity	Approx. Chi-Square	2281.230
	df	231
	Sig	0.000
Total extracted variance		66.9 %

4.3. EFA and Factor Structure Confirmation

The results presented in Tables 2 and 3 provide a robust foundation for developing and evaluating the measurement instrument within this quantitative study. Specifically, all measurement scales demonstrated acceptable reliability, with Cronbach's Alpha values equal to or greater than 0.7. Moreover, the data met the statistical prerequisites for EFA, with a KMO value of 0.828 and a total variance explained of 66.9%, both indicating the dataset's adequacy for factor extraction. However, a few constructs may benefit from further refinement to enhance internal coherence and content coverage.

Based on these results, the study proceeded with EFA to identify the underlying factor structure. Variables that did not contribute significantly to the model were eliminated to ensure construct validity. Table 4 presents the results of EFA after applying varimax rotation to the 26 observed variables. The analysis extracted six principal components corresponding to the six independent variables hypothesized in the conceptual model. These six factors represent the dimensions influencing the financial sustainability of PCFs, as detailed below:

Factor 1 – Operational Efficiency (H2): This factor includes four variables (HQHD1, HQHD2, HQHD3, HQHD4), all exhibiting primary loadings above 0.7, indicating a high level of item convergence. The results confirm that operational efficiency is strongly associated with improvements in financial sustainability among PCFs.

Factor 2 – Organizational Capacity (H1): Variables NLTC1, NLTC2, and NLTC4 loaded significantly onto this factor, reflecting the organization's internal capacity for maintaining and enhancing its operations. These capabilities positively contribute to long-term financial sustainability.

Factor 3 – Customer Outreach (H5): The three indicators (TCKH1, TCKH2, TCKH3) demonstrated strong loadings on this factor, suggesting that expanding the customer base helps diversify revenue streams and mitigate financial risks.

Factor 4 – Loan Portfolio Management (H3): This factor comprises four variables (QLDM1, QLDM2, QLDM3, QLDM4) with high loadings, underscoring the critical role of effective loan portfolio management in reducing credit risk and enhancing financial performance.

Factor 5 – Organizational Transparency (H6): Four indicators (TMB1, TMB2, TMB3, TMB4) loaded strongly on this dimension, highlighting the importance of transparency in strengthening stakeholder trust and supporting effective oversight.

Factor 6 – Governance Quality (H4): Variables CLQT1, CLQT2, CLQT3, and CLQT4 were grouped under this factor, confirming the decisive role of governance quality in maintaining operational stability and contributing to financial sustainability.

Table 4.
Rotated Component Matrix.

	1	2	3	4	5	6
HQHD 3	0.838					
HDHQ4	0.803					
HDHQ1	0.803					
HDHQ2	0.775					
NLTC2		0.790				
NLTC1		0.787				
NLTC4		0.782				
NLTC3		0.776				
TCKH2			0.790			
TCKH4			0.783			
TCKH1			0.774			
TCKH3			0.762			
QLDM3				0.789		
QLDM1				0.784		
QLDM4				0.760		
QLDM5				0.742		
TMB1					0.839	
TMB2					0.774	
TMB3					0.719	
CLQT3						0.834
CLQT2						0.721
CLQT1						0.721

In this analysis, a factor loading threshold of 0.5 was considered the minimum acceptable level for practical significance, while loadings above 0.7 were regarded as indicative of strong convergence. Most items met or exceeded the 0.7 benchmark, and there were no severe cross-loading issues, which reinforces both the convergent and discriminant validity of the identified factors.

4.4. EFA and CFA Results: Validating the Measurement Model

Table 5 presents the summary indicators of the EFA, confirming the suitability and reliability of the dataset for factor extraction. Specifically: (i) The KMO measure is 0.806 (> 0.8), indicating a high level of intercorrelation among observed variables and justifying the application of factor analysis; (ii) Bartlett's Test of Sphericity yields an approximate chi-square value of 417.809 with degrees of freedom (df) = 6 and a significance level (Sig.) < 0.001. This result rejects the null hypothesis that the correlation matrix is an identity matrix, thereby confirming significant relationships among variables; (iii) The total variance explained is 67.781%, exceeding the minimum threshold of 50%. This indicates that the six extracted factors sufficiently account for the majority of variance in the data, reflecting a solid underlying theoretical structure consistent with hypotheses H1 to H6.

Table 5.
Results of EFA.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.806
Bartlett's Test of Sphericity	Approx. Chi-Square	417.809
	df	6
	Sig	<.001
Total extracted variance		67.781 %

Overall, the evaluation indices (KMO = 0.806; Sig. < 0.001; total variance explained > 67%) affirm the adequacy of the data for EFA. The extracted factor structure demonstrates strong convergent validity, with most factor loadings above 0.7, and clearly distinct conceptual domains, supporting discriminant validity. The grouping of items into six factors reflects alignment between the measurement model and the theoretical framework, highlighting the practical relevance of the scale in testing the factors affecting the financial sustainability of PCFs.

Table 6 reports the CFA results, providing evidence on the quality of the measurement model. All constructs show CR values above 0.7, indicating strong internal consistency and reliability of the observed items within each latent factor. Average Variance Extracted (AVE) values exceed 0.5 for all factors, suggesting that each construct explains more than 50% of the variance in its indicators, thereby confirming convergent validity. Low Shared Variance (SV) values indicate clear distinctions among the latent constructs, supporting discriminant validity. MaxR(H) values closely approximate CR values, further confirming the model's stability and the reliability of the constructs. The theoretical relationships among the constructs are statistically significant and align with hypothesized associations: Sustainability and Customer Accessibility: r = 0.488, p < 0.001; Sustainability and Loan Portfolio Management: r = 0.547, p < 0.001; Sustainability and Transparency: r = 0.551, p < 0.001; Transparency and Organizational Capacity: r = 0.445, p < 0.001; Governance Quality and Organizational Capacity: r = 0.147, p < 0.05.

These correlations support the theoretical assumptions regarding inter-construct relationships while also validating discriminant validity within the measurement model. In summary, the CFA results confirm the scale's reliability, convergent validity, and discriminant validity, thus providing a solid foundation for the subsequent application of SEM in further analysis.

Table 6.
Results of CFA.

	CR	AVE	MSV	MaxR(H)	TBV	TCKH	QLDM	NLTC	TMB	CLQT	HQHD
TBV	0.842	0.571	0.500	0.843	0.756						
TCKH	0.820	0.532	0.238	0.821	0.488 ***	0.730					
QLDM	0.820	0.532	0.299	0.820	0.547 ***	0.376 ***	0.729				
NLTC	0.827	0.545	0.304	0.829	0.551 ***	0.320 ***	0.326 ***	0.738			
TMB	0.752	0.504	0.364	0.764	0.604 ***	0.276 ***	0.351 ***	0.445 ***	0.710		
CLQT	0.757	0.510	0.500	0.762	0.707 ***	0.444 ***	0.547 ***	0.417 ***	0.354 ***	0.714	
HQHD	0.837	0.563	0.193	0.840	0.439 ***	0.274 ***	0.260 ***	0.147*	0.260 **	0.236 **	0.750

The CFA results presented in Table 6 demonstrate that all key indicators, Composite Reliability (CR), Average Variance Extracted (AVE), and MaxR(H) meet the established thresholds, indicating the robustness of the measurement model. The low SV values further confirm strong discriminant validity among the constructs. The majority of correlations between latent variables are statistically significant, thereby supporting the theoretical assumptions regarding their interrelationships. These findings confirm that the measurement model possesses high reliability, strong convergent validity, and well-established discriminant validity, thus providing a solid foundation for subsequent SEM analysis. The SEM results reveal the key determinants of financial sustainability for PCFs in Vietnam. Six hypotheses (H1–H6) were tested, and the model fit indices Chi-square/df = 1.274, GFI = 0.910, TLI = 0.968, CFI = 0.972, and RMSEA = 0.032 indicate a good model fit. The relationships among latent variables are confirmed, showing statistically significant correlation coefficients. Specifically:

NLTC is positively associated with TBV, with a correlation coefficient of r = 0.445 (p < .001). NLTC reflects internal management capabilities, operational efficiency, and adequate infrastructure. Institutions with strong organizational capacity are more likely to operate stably, minimize errors, and adapt effectively to economic fluctuations, thereby enhancing financial sustainability.

TMB also shows a strong positive association with TBV, with a correlation of r = 0.604 (p < .001). This factor reflects the capacity to optimize resources, reduce operational costs, and increase profitability. PCFs with high operational efficiency are better positioned to maintain long-term financial stability.

QLDM is positively correlated with TBV, with a coefficient of r = 0.547 (p < .001). Effective loan management

involves credit risk control through portfolio diversification and reduced exposure to high-risk lending, which minimizes financial losses and enhances resilience to economic shocks.

CLQT exhibits the strongest relationship with TBV, with a coefficient of r = 0.707 (p < .001). Governance quality pertains to leadership's ability to oversee operations, make informed strategic decisions, and maintain transparency. Strong governance reduces managerial risks and establishes a firm foundation for sustainable development.

TCKH is moderately associated with TBV, with a coefficient of r = 0.488 (p < .001). This construct represents the institution's ability to broaden its client base and diversify service offerings. Expanding outreach increases mobilized capital and diversifies income streams, thereby mitigating financial risk.

HQHD also shows a moderate positive relationship with TBV, with a coefficient of r = 0.439 (p < .001). Transparency involves clear and comprehensive financial and operational disclosures. This enables stakeholder oversight, builds trust among customers and investors, and contributes positively to financial sustainability.

In addition to these direct effects on financial sustainability, several significant interrelationships among the latent variables were identified:

TCKH positively influences QLDM, with a coefficient of r = 0.376. Effective outreach supports better risk diversification and improves the overall quality of the loan portfolio.

QLDM contributes positively to NLTC, with a coefficient of r = 0.326. Efficient credit management strengthens institutional capacity by enhancing internal risk control mechanisms.

HQHD positively impacts CLQT, with a coefficient of r = 0.236**. Clear disclosure of institutional activities facilitates informed strategic decision-making and strengthens overall governance.

In conclusion, all six factors positively influence the financial sustainability of PCFs in Vietnam. Specifically, NLTC supports internal stability, TMB enhances resource optimization, QLDM mitigates credit risk, CLQT drives strategic coherence, TCKH diversifies income sources, and HQHD reinforces stakeholder trust. These findings offer a comprehensive understanding of the structural drivers of financial sustainability within Vietnam's microfinance sector.

5. Discussion

The findings from EFA and CFA confirm six key organizational factors influencing the financial sustainability of Vietnam's PCFs: Organizational Capacity (H1), Operational Efficiency (H2), Loan Portfolio Management (H3), Governance Quality (H4), Customer Outreach (H5), and Transparency (H6). All statistical indices (factor loadings, CR, AVE, MaxR(H)) meet the recommended thresholds, ensuring the model's reliability and validity [31, 32].

SEM results indicate that strong organizational capacity (NLTC) positively contributes to financial sustainability (r = 0.445), enhancing resilience through internal management and infrastructure. This supports prior research emphasizing internal capability as key to financial stability [33, 34].

Operational efficiency (TMB) also shows a strong effect (r = 0.604), highlighting the importance of cost control and resource optimization, consistent with findings by Altunbas et al. [35] though partially contrasting with Berger and Bouwman [36] who view its role as secondary in emerging markets.

Loan portfolio management (QLDM) significantly impacts sustainability (r = 0.547), reflecting the importance of risk control through diversification [37]. However, the direct application of commercial banking models remains challenging for PCFs.

Governance quality (CLQT) has the highest correlation (r = 0.707), confirming its crucial role in oversight and stakeholder trust [38]. This study uniquely explores how effective governance supports both transparency and board independence.

Customer outreach (TCKH) and transparency (HQHD) also show significant positive impacts (r = 0.488*** and r = 0.439***, respectively). These findings align with research emphasizing the value of client diversification and open communication in boosting institutional trust.

The interrelations among constructs, such as the influence of TCKH on QLDM (r = 0.376***) and QLDM on NLTC (r = 0.326***) highlight a synergistic framework for sustainable performance. This supports Cull et al. [39] who emphasized the integration of outreach and governance to attract investment and enhance resilience.

6. Conclusion, Limitations, and Future Research

This study identifies six significant organizational factors (NLTC, TMB, QLDM, CLQT, TCKH, HQHD) that drive the financial sustainability of Vietnam's PCFs. The results emphasize the importance of management capacity, efficiency, governance, credit risk control, outreach, and transparency. Their interconnectivity suggests a need for integrated strategies to foster long-term stability.

The study is limited by its cross-sectional design, which restricts causal interpretations. Additionally, the focus on Vietnam's PCFs limits generalizability to other contexts. External macroeconomic variables were not included, which may influence sustainability outcomes. Future studies should adopt longitudinal designs, explore the role of fintech and digital transformation, and assess external economic impacts. Comparative research across institutions and countries may uncover universal versus context-specific sustainability drivers.

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