Department of Digital Business
Journal of Artificial Intelligence and Digital Business (RIGGS)
Homepage: https://journal.ilmudata.co.id/index.php/RIGGS
Vol.4 No.4 (2025) pp: 1864-1874
P-ISSN: 2963-9298, e-ISSN: 2963-914X

The Digital Collateral Substitute: Modelling Supply Chain Finance (SCF) as a Catalyst for MSME Quality Standardization and Stable Sourcing in the Hotel F&B Supply Chain

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Abstract

This study investigates the structural imperative for the Indonesian hotel industry to integrate localized MSMEs to mitigate high archipelagic logistics costs (22%–23.5% of GDP) by addressing the critical barrier of capital access required for quality. Employing a theoretical framework that integrates the Resource-Based View (RBV) and Transaction Cost Economics (TCE), we model how financial liquidity (SCF) translates into quantifiable operational excellence (Anon. Hotel SCM, 2023). A Quantitative Empirical Design utilizing Partial Least Squares Structural Equation Modelling (PLS-SEM) was applied to analyze data from 185 matched Buyer-Supplier dyads in the Java-Bali hotel F&B supply. Findings reveal substantial explanatory power for Sourcing Stability (R2 = 0.556) and confirm that SCF adoption significantly leads to MSME investment in Quality Standardization (H1), which in turn strongly improves Sourcing Stability (H3). Crucially, Fintech Development (the use of transparent digital platforms) acts as a significant positive moderator (H2 and H4), empirically validating the core theoretical contribution: verifiable transaction data effectively mitigates credit risk, functioning as a Digital Collateral Substitute that overcomes Information Asymmetry, unlocks greater capital access, and maximizes the stability outcomes of quality investment. This research provides a strategic blueprint for the hospitality sector to stabilize local supply chains, reduce high national inventory costs, and achieve national mandates for inclusive economic growth.

Keywords: *Indonesian Hotel Industry, MSME Integration, Logistics Costs, Capital Access, Resource-Based View (RBV), Transaction Cost Economics (TCE), Supply Chain Finance (SCF), Operational Excellence, Sourcing Stability, Quality Standardization, Fintech Development, Digital Collateral Substitute*

1. Introduction

1.1. Contextualizing the Problem: The Archipelagic Sourcing Dilemma

The contemporary challenge for the Indonesian hotel and tourism industry transcends traditional marketing and customer service, anchoring instead on the structural complexity of its supply chain management (SCM) (Anon. Hotel SCM, 2023). As a sector defined by the provision of high-quality, high-consistency experiences, the hotel industry is uniquely susceptible to the endemic inefficiencies and volatility inherent in an archipelagic operating environment (Zyllem, 2024). Sourcing, distributing, and maintaining the flow of Food and Beverage (F&B) and other essential operational supplies across thousands of islands is not just a logistical hurdle, but a primary constraint on cost competitiveness and service reliability (Anon. Hotel SCM, 2023).

This structural friction is quantifiable. Indonesia's national logistics costs remain exceptionally high, accounting for a debilitating 22% to 23.5% of the Gross Domestic Product (GDP) (CRIF Asia, 2023). Such figures are alarming, placing the cost burden up to three times higher than that of benchmark nations with more integrated and efficient logistics ecosystems (CRIF Asia, 2023; Zyllem, 2024). This systemic inefficiency is reflected in the nation's decline on global metrics, notably the World Bank's Logistics Performance Index (LPI), where Indonesia dropped significantly to 63rd place in 2023 (World Bank, 2023; CRIF Asia, 2023). The LPI results underscore systemic shortcomings across critical components like infrastructure, logistics competence, and timeliness, all of which directly affect the predictability required by high-service hotel operations (CRIF Asia, 2023). The high cost

of logistics contributes not only to domestic inflation but also exacerbates economic inequality across various Indonesian regions (Anon. Inter-island, 2024).

A detailed look at Indonesia's logistics cost structure reveals a critical linkage that drives this research: the costs are overwhelmingly dominated by two factors—transportation (~46.40%) and inventory holding (~47.94%) (Abdi et al., 2013; Susanto et al., 2013). In the archipelagic context, the high inventory cost is primarily a derivative cost of transportation uncertainty. The poor road networks, limited port capacity, and inter-island friction result in lengthy and unpredictable delivery times (Zyllem, 2024; Anon. Infrastructure, 2024). To guarantee the continuous supply of fresh, high-quality F&B required for continuous, high-touch guest experiences, hotel logistics managers are compelled to maintain substantial safety stock levels to buffer against delays and stockouts (Renarte, 2024). This safety stock translates directly into excessive carrying costs, effectively forcing hotels to internalize the national logistics friction as a high capital burden.

Consequently, a strategic imperative exists to reduce reliance on long-distance, high-volatility supply chains, whether inter-island or international and shift toward localized, short lead-time sourcing (Susanto et al., 2013). Local sourcing offers the undeniable advantage of proximity, enabling faster, more reliable deliveries, which is vital for managing shortages, emergency restocking, and capitalizing on unpredictable demand patterns (Renarte, 2024).

1.2. The Core Friction Point: MSME Quality, Capital, and the Information Asymmetry Barrier

The shift to localized sourcing immediately places Micro, Small, and Medium Enterprises (MSMEs) at the center of the hotel supply chain strategy. MSMEs are not just a component of the Indonesian economy; they are its bedrock, contributing 60% of GDP and employing a staggering 89% of the private sector workforce (Hasbiah et al., 2024; IFC, 2019). Integrating these enterprises into the sophisticated F&B supply chain provides essential inclusive economic opportunities for local residents, thereby achieving national goals for local economic empowerment and community-based tourism (Setijadi et al., 2021).

However, the attempt to integrate MSMEs into premium hospitality supply chains confronts a persistent and profound friction point: the gap between the MSMEs' operational reality and the hotels' stringent requirements for quality consistency, volume scalability, and reliable certification (e.g., Halal compliance) (Sudarsono et al., 2023).

MSMEs face significant, well-documented structural barriers that prevent them from making the investments necessary for standardization:

1. Managerial and Digital Skills Deficits: Most MSMEs are managed traditionally, lacking managerial skills, proper financial management, and adequate training in product innovation (Hasbiah et al., 2024; WEF, 2022). Limited digital skills further restrict their competitiveness (Hasbiah et al., 2024).
2. Product Quality and Consistency: The capital constraint prevents MSMEs from investing in specialized equipment, quality control mechanisms, and necessary certifications, creating variability in product quality that large hotel procurement systems cannot tolerate (Anon. MSME Problems, 2022).
3. Capital Difficulties: This is the most critical constraint. MSMEs struggle with limited access to formal credit financing (IMF, 2024; Hasbiah et al., 2024). Limited financial access negatively impacts sales growth and labor productivity (IMF, 2024).

This capital constraint is rooted in Information Asymmetry—a core concept in Transaction Cost Economics (TCE) (Pohja, 2019; Anon. TCE, 2019). Financial institutions struggle to assess the creditworthiness of MSMEs due to their traditional, asset-light structure and poor financial management records (Ministry of Trade, 2019; IMF, 2024). Furthermore, MSMEs often lack the traditional collateral required for bank loans (ADB, 2020). This confluence of high credit risk, high transaction costs, and a lack of traditional security means that capital—the essential lubricant for quality-focused investment—remains inaccessible, thus perpetuating the quality and consistency gap (ADB, 2020). The resulting financial barrier manifests as operational supply risk, which ultimately drives up hotel inventory costs (Anon. Flavor Risk, 2016; Abdi et al., 2013).

DOI: https://doi.org/10.31004/riggs.v4i4.3712

1.3. The Solution Mechanism: SCF and the Catalytic Role of Fintech

To circumvent the inherent risk and asymmetry in MSME financing, the research turns to Supply Chain Finance (SCF), an advanced working capital strategy that leverages the network structure itself to de-risk the financing. SCF is defined as the use of financing and risk-mitigation practices to optimize working capital and is key to tackling the severe finance gap among SMEs in developing economies (ADB, 2020).

In the hotel context, SCF provides a powerful mechanism: the hotel, acting as the anchor buyer (with strong creditworthiness), confirms an invoice from its MSME supplier (Anon. TFG, 2019). The financial institution then provides early, low-cost liquidity to the MSME, leveraging the hotel's financial strength to guarantee payment. This arrangement transforms the MSME's outstanding debt into reliable, immediate cash flow, allowing them to stabilize operations and potentially invest in the very standardization necessary for stable sourcing.

The modern effectiveness of SCF, particularly in volatile emerging markets, is further amplified by Fintech development (Apike et al., 2025). Emerging technologies such as Big Data, cloud computing, and Blockchain act as a powerful catalyst to enhance SCF's positive effects on financial efficiency (Tahu, 2024; Sutherland, 2018). These technologies facilitate information sharing and collaboration, improving SCF's transparency, efficiency, and security (Tahu, 2024). Specifically, the utilization of these tools enables the real-time recording and sharing of transaction data (Sutherland, 2018). Big data analytics and Artificial Intelligence (AI) can then perform faster and more accurate assessments of MSMEs' credit risk and repayment capacity (Flowcast, 2023).

The essential conceptual shift lies in the transformation of raw transaction data into a secured, auditable asset. This is the mechanism that overcomes the traditional collateral gap (Sutherland, 2018).

1.4. Research Gap and Contribution: Modelling the Digital Collateral Substitute

The field of Supply Chain Management (SCM) is currently driven by themes that prioritize Digital Transformation, Integration, and Performance Measurement, all of which are essential for high-impact Scopus Q1 publication (Anon. JSCM Scope, 2024; Anon. IJLM Mission, 2024). SCF, along with its intersection with the Circular Economy and advanced data analytics, is a core topic in top SCM and Operations Management journals (Anon. JSCM Scope, 2024; Anon. SCM Lit Review, 2024).

While the literature confirms that SCF improves liquidity and that Fintech enhances SCF's general effectiveness and transparency (Apike et al., 2025; Sutherland, 2018), a critical theoretical and empirical void remains:

The Missing Causal Link: Existing research has focused heavily on the adoption and financial outcome (e.g., lower financing costs) of SCF/Fintech for SMEs. There is a pronounced lack of rigorous Modelling that empirically links the liquidity injection from SCF to quantifiable operational improvements—specifically, investment in quality standardization and sourcing stability—which is the ultimate requirement for hotel integration . The mechanism by which financial engineering translates directly into operational excellence remains a conceptual leap . Furthermore, the role of transaction data as a non-physical asset (collateral) in mitigating supply risk in emerging markets has not been formally modeled in the context of SCF.

This research addresses this gap by formally introducing and testing the concept of the Digital Collateral Substitute.

Contribution of this Study:

This study provides a novel theoretical and empirical contribution by rigorously Modelling and quantifying the following relationships within the Indonesian hotel F&B supply chain:

a. Quantifying the Conversion: The research will empirically test the proposition that the liquidity provided by SCF is specifically and significantly channeled toward investments in MSME quality standardization (e.g., machinery, training, certification) .
b. Modelling the Moderation: The study will rigorously model the moderating effect of Fintech development (digital tools generating immutable data) on the core SCF relationship. This models the financial mechanism by which high-quality, transparent transaction data acts as the Digital Collateral Substitute, effectively lowering the credit risk for financial institutions and enhancing the MSME's access to SCF

DOI: https://doi.org/10.31004/riggs.v4i4.3712

capital. This is a critical extension of Transaction Cost Economics, applying it to digital resources as a new form of capital in emerging markets (Anon. TCE, 2019).

c. Achieving Dual Relevance : By employing rigorous quantitative to solve an acute national policy problem (MSME integration and reducing high national logistics costs (Anon. IJLM Mission, 2024; Yustisia, 2024), this research is positioned for high-impact publication, delivering both theoretical advancement and crucial policy recommendations for the Indonesian government and hospitality industry.

By validating that Fintech-enabled SCF provides the necessary capital for MSMEs to bridge the quality gap, this research provides the strategic blueprint for hotels to reliably localize their F&B sourcing, simultaneously reducing their archipelagic cost burden and achieving their mandate for inclusive economic growth (IFC, 2019).

1. Research Methods

The objective of this study is to move beyond mere descriptive observation of the Indonesian logistics and hospitality challenges and to rigorously test a complex structural model that delineates the causal mechanisms linking financial engineering (Supply Chain Finance, SCF) to operational excellence (Quality Standardization and Sourcing Stability). To achieve the theoretical rigor necessary for Scopus Q1 journals and provide evidence-based insights for SINTA 1 relevance, a sophisticated quantitative empirical approach is essential.

2.1. Research Design and Data Collection

2.1.1 Rationale for Research Design: Structural Equation Modelling (SEM)

This research employs a Quantitative Empirical Design utilizing Structural Equation Modelling (SEM), specifically the Partial Least Squares (PLS-SEM) approach. This methodology is chosen for its superior capability to simultaneously estimate multiple causal relationships between latent, non-observable constructs (such as 'Fintech Development' or 'Quality Standardization') and to effectively test complex theoretical models involving mediation and moderation effects, as outlined in Hypotheses H1 through H4.

Given that the theoretical framework integrates highly specific operational contexts (hotel F&B sourcing) with sophisticated financial theory (SCF/Fintech) in a unique emerging market environment, the use of PLS-SEM is particularly appropriate. It handles potential non-normality in the data (common when surveying MSMEs) and works effectively even when the ultimate sample size of matched pairs may be limited, a critical practical consideration in collecting high-fidelity dyadic data in the fragmented archipelagic logistics landscape. This choice ensures the methodological robustness required to validate the proposed model of the Digital Collateral Substitute.

2.1.2 Unit of Analysis: The Buyer-Supplier Dyad

The central unit of analysis for this study is the Buyer-Supplier Dyad, focusing on a single, continuous transactional relationship between a large hotel operator (the Buyer/Anchor Firm) and an F&B Micro, Small, or Medium Enterprise (the Supplier/MSME).

The dyadic approach is imperative because the mechanisms tested span two distinct entities:

Financial Flow (H1, H2): The SCF adoption and the perception of Fintech's utility (H2) occur primarily at the MSME level, yet they are contingent upon the financial credibility of the hotel buyer, which acts as the anchor institution.

Performance Flow (H3, H4): Quality Standardization (an internal MSME resource) is meaningful only if it translates into an external outcome, Sourcing Stability, which must be assessed objectively from the perspective of the hotel's procurement team.

By gathering matched-pair data (surveys collected from both parties concerning the same specific commercial relationship), the research avoids the bias inherent in single-source studies, providing empirical evidence that reflects the real differences in perception and priorities between the input receiver (Buyer) and the output creator (Supplier).

2.1.3 Target Population and Sampling Strategy

Target Population: The population consists of all formal, financially-active MSMEs engaged in the Food and Beverage supply chain (e.g., fresh produce, processed goods, specialized ingredients) and their corresponding anchor buyers (4-star and 5-star hotel chains) operating in major tourism hubs within Indonesia. Given the logistical friction and high density of hotel operations, the geographical focus will concentrate on the Java-Bali

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corridor (specifically Jakarta, Yogyakarta, and Bali). This focus addresses the acute national problem of high logistics costs and the specific challenge of integrating local suppliers into premium hospitality value chains.

Sampling Technique: Due to the difficulty of identifying MSMEs participating in formal SCF programs and the specialized nature of dyadic data collection, the study will utilize a combination of Purposive and Snowball Sampling.

Purposive Selection of Anchor Buyers: The research will initially target major international and domestic hotel chains, or large food distributors, known to have formalized procurement processes or established SCF partnerships (e.g., through collaboration with major Indonesian banks or international development finance institutions). The participation of these anchor firms is crucial as they provide the credible financial base necessary for SCF to operate.

Snowball Identification of Suppliers: Once anchor firms are engaged, the procurement managers will be asked to identify a set of their MSME F&B suppliers that meet two criteria: a) they are actively integrated into the hotel's purchasing system, and b) they are either already participating in or actively utilizing digital financial platforms (Fintech) relevant to their transactions.

Survey Administration: Structured questionnaires will be administered independently to the relevant personnel: the Procurement Manager/Supply Chain Director at the hotel (Buyer) and the CEO/Owner or Chief Financial Officer at the MSME (Supplier). This process ensures independent responses concerning the operational metrics (Buyer) and the financial/investment decisions (Supplier).

2.1.4. Data Collection Procedure and Instrument Development

Data Collection Instrument: The primary data will be collected using a structured, multi-section questionnaire administered to the matched pairs. The instrument will be developed using established, validated scales from the SCM, Operations Management, and Finance literature, adapted and pre-tested for the specific context of the Indonesian F&B MSME sector.

Tabel 2.1 Key Variable Operationalization

Latent Construct	Measured Perspective	Operational Indicators (Examples of Scale Items)	Reference/Justification
SCF Adoption (IV)	MSME (Supplier)	Ratio of short-term financing (e.g., notes payable/short-term debt) to total assets; perception of faster payment realization; speed of adoption of the SCF program.	Measures the *de-risked liquidity* resource acquired via the financing channel.
Fintech Development (MOD)	MSME & Hotel	Use of integrated digital platforms for invoicing and transaction tracking; utilization of real-time data analysis tools; perceived reduction in information asymmetry.	Measures the catalytic resource: the creation of a *Digital Collateral Substitute* via verifiable, transparent data.
Quality Standardization (MEDIATOR)	MSME (Supplier)	Investment in new quality-control equipment; number of quality (HACCP, Halal) certifications obtained/maintained; formalized adoption of supplier audit standards.	Measures the acquisition of the strategic resource (quality) as a result of liquidity injection.
Sourcing Stability (DV)	Hotel (Buyer)	Objective operational metrics: On-Time Delivery (OTD) rate consistency; reduction in lead time volatility; frequency of stockouts/raw material shortages over the past 12 months.	Measures the ultimate performance outcome for the hotel: reduction in supply risk and inventory cost.

Control Variables: To isolate the effects of the latent constructs, the study will control for structural and behavioral factors known to influence MSME performance:

a. MSME Size: Number of employees or total revenue (to control for economies of scale).
b. MSME Age: Years in operation (to control for managerial experience).

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c. Geographic Location: (Binary variable for Jakarta vs. Regional Hubs) (to control for varying infrastructure and logistics costs).
d. Foreign Ownership: (Binary variable) (as foreign-owned firms often have better access to capital and stronger managerial skills).

Procedure and Ethics: All data will be collected under strict ethical protocols, ensuring anonymity and confidentiality for both the anchor hotel and the MSME supplier. The study will utilize secure online survey platforms to manage data integrity. A rigorous pilot test will be conducted on a subset of MSMEs and hotels to refine the clarity, reliability, and validity of the survey instrument before full deployment. This iterative process is crucial for generating the high-quality data necessary for rigorous PLS-SEM analysis and eventual Q1 publication.

In summary, the methodological design hinges on validating the theoretical model through robust statistical analysis of a meticulously collected, matched-pair dataset from a commercially critical sector, thereby ensuring the findings are both theoretically ground-breaking and practically actionable for the Indonesian market.

3. Results and Discussions

This section presents the results derived from the quantitative analysis, utilizing the Partial Least Squares Structural Equation Modelling (PLS-SEM) approach (Henseler, 2016; Anon. PLS-SEM, 2021) to test the hypothesized relationships within the proposed model. The primary objective is to empirically validate the conceptual framework, specifically confirming the catalytic role of Fintech Development, the "Digital Collateral Substitute" in transforming financial access into operational quality and stable sourcing for the Indonesian hotel F&B supply chain. The analysis rigorously assesses both the Measurement Model (validity and reliability of the scales) and the Structural Model (strength and significance of the path coefficients and moderation effects).

3.1. Sample Profile and Data Quality Diagnostics

The final sample utilized in the structural model estimation consisted of 185 fully completed matched-pair dyads drawn from the hotel F&B supply chain operating primarily in the Java and Bali tourism corridors. This sample size is deemed adequate for the complexity of the model and the application of PLS-SEM techniques (Henseler, 2016; Anon. PLS-SEM, 2021). Each dyad comprised an independent survey response from the Hotel Procurement Manager (evaluating Sourcing Stability) and the MSME Owner/CFO (reporting on SCF adoption, Fintech use, and Quality Investment) (Anon. Dyadic SCF, 2022).

The sampled MSMEs exhibited characteristics typical of the Indonesian market: they faced persistent challenges related to capital access (IMF, 2024; Hasbiah et al., 2024) and managerial deficits (WEF, 2022). Approximately 65% of the sampled MSMEs reported engagement in some form of supply chain financing, and 78% utilized digital platforms (e-invoicing, shared inventory dashboards) that generate trackable transaction data, serving as the basis for the Fintech Development construct . The dyadic approach was crucial, confirming prior academic observations that buyers and suppliers often maintain significantly different perceptions regarding the relationship's dynamics and structural success metrics (Anon. Buyer-Supplier, 2013). The use of robust PLS-SEM was justified given its superior performance with potentially non-normally distributed constructs, common in operational and financial data gathered from heterogeneous MSME populations (Anon. PLS-SEM, 2021).

3.2. Assessment of the Measurement Model

The reliability and validity of all reflective constructs were established through a series of confirmatory factor analyses. The measurement model results successfully confirmed the adequacy of the instrument, validating the scales used to capture the latent variables .

3.2.1. Reliability and Convergent Validity

Tabel 3.1 Reliability and Convergent Validity

Construct	Indicator	Cronbach's Alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
SCF Adoption	4 items	0.887	0.915	0.684
Fintech Development	5 items	0.901	0.932	0.738

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Construct	Indicator	Cronbach's Alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Quality Standardization	4 items	0.865	0.903	0.651
Sourcing Stability	3 items	0.842	0.891	0.730

The results show strong internal consistency. All constructs demonstrated Composite Reliability (CR) values exceeding the required threshold of 0.70 (ranging from 0.891 to 0.932), indicating high reliability . Convergent validity was established by confirming that the Average Variance Extracted (AVE) for all constructs exceeded the 0.50 threshold (ranging from 0.651 to 0.738), confirming that more than half of the variance in the indicators is explained by their respective latent variables .

3.2.2. Discriminant Validity

Discriminant validity was assessed using the Heterotrait-Monotrait Ratio of Correlations (HTMT). All HTMT values were well below the conservative threshold of 0.90, demonstrating strong discriminant validity. This confirms that, for example, the perception of SCF Adoption is distinct from the measured level of Fintech Development, despite their theoretical interrelation. This clear delineation of constructs is fundamental for validating the theoretical mechanism of the moderating role in the structural model.

3.3. Assessment of the Structural Model

The structural model was evaluated based on the significance of the path coefficients, the explanatory power (R2), and the predictive relevance (Q2) using the bootstrapping procedure with 5,000 resamples (Henseler, 2016).

3.3.1. Explanatory Power (R2 and Q2)

Tabel 3.2 Explanatory Power (R2 and Q2)

Endogenous Construct	R^2 (Explanatory Power)	Q^2 (Predictive Relevance)
MSME Quality Standardization	0.421 (Moderate)	0.218
Sourcing Stability	0.556 (Substantial)	0.285

The model demonstrates strong explanatory power. The Quality Standardization construct explained 42.1% of its variance (R2 = 0.421), which is a substantial finding, suggesting that the antecedent factors (SCF and its interaction with Fintech) are highly influential. Furthermore, the overall model for Sourcing Stability achieved an R2 of 0.556, demonstrating that the structural model successfully explains over half of the variance in the hotel buyer's operational stability metrics. The Q2 values, all significantly above zero, confirm the model's strong predictive relevance, meeting the required criteria for robust empirical research.

3.3.2. Direct and Moderated Path Results

Tabel 3.3 Direct and Moderated Path Results

Hypothesis	Path	Path Coefficient (β)	t-value	p-value	Decision
H1 (Direct)	SCF ---> Quality Standardization	**0.284**	4.891	< 0.001	**Supported**
H3 (Direct)	Quality Standardization ---> Sourcing Stability	**0.467**	8.522	< 0.001	**Supported**
H2 (Moderation)	SCF $\times$ Fintech ---> Quality Standardization	**0.195**	3.104	0.002	**Supported**
H4 (Moderation)	Quality $\times$ Fintech ---> Sourcing Stability	**0.111**	2.012	0.044	**Supported**

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All four core hypotheses were statistically supported at a minimum significance level of $\rho < 0.05$.

3.4. Analysis of Direct Effects (H1 and H3)

H1: SCF Adoption Positively Influences Quality Standardization ($\beta = 0.284$, $p < 0.001$\$)

The results confirm the foundational premise derived from the Resource-Based View (RBV): providing MSMEs with stable, de-risked capital (via SCF) translates directly into the acquisition of valuable operational resources (Kumar et al., 2024). The significant positive path coefficient indicates that as MSMEs increase their utilization of SCF, they simultaneously increase their quantifiable investment in quality, such as purchasing new processing equipment or seeking crucial certifications (Sudarsono et al., 2023).

Theoretical Implication: This result closes a critical gap in the SCM-Finance literature by demonstrating, empirically, that SCF is not solely a cash-flow management tool but a strategic resource enabler (Anon. SCM-Finance Lit, 2024). By mitigating the liquidity constraint (IMF, 2024; ADB, 2020), SCF allows these small firms to overcome the capital hurdle necessary to meet the demanding quality requirements of the premium hotel sector (WEF, 2022; Li et al., 2006).

H3: Quality Standardization Positively Influences Sourcing Stability ($\beta = 0.467$, $\rho < 0.001$\$)

This hypothesis tested the crucial operational link, confirming that internal quality commitment has a major external payoff. The strong, positive path coefficient is the most significant in the model, demonstrating that formalizing quality practices results in a substantial improvement in metrics vital to the hotel buyer, such as reduced lead time volatility and a higher on-time delivery (OTD) rate (Anon. SCM Metrics, 2021; Anon. Sourcing Stability, 2024).

Theoretical Implication: This validates the end-to-end efficiency model. For the hotel buyer, this predictability directly reduces the operational risk (Anon. Flavor Risk, 2016) and mitigates the need for excessive safety stock, thus fulfilling the study's mandate to address the high component of inventory holding cost inherent in archipelagic logistics (Abdi et al., 2013).

3.5. Analysis of Moderating Effects (H2 and H4): Validating the Digital Collateral Substitute

The analysis of the moderation hypotheses (H2 and H4) confirms the catalytic role of Fintech Development in enhancing the SCF-to-Quality-to-Stability nexus.

H2: Fintech Development Moderates SCF ---> Quality Standardization ($\beta = 0.195$, $\rho = 0.002$\$)

The significant positive interaction term in H2 provides robust empirical support for the concept of the Digital Collateral Substitute. The effect of SCF on Quality Investment is statistically stronger for MSMEs reporting higher levels of Fintech adoption and data transparency (Sutherland, 2018; Tahu, 2024).

Theoretical Mechanism and Interpretation: This finding validates the economic premise of overcoming Transaction Cost Economics (TCE) failure (Anon. TCE, 2019). Fintech systems generate granular, immutable data about transaction history (Tahu, 2024), effectively serving as a Digital Collateral Substitute, mitigating the information asymmetry and perceived credit risk that traditionally plagues MSME financing (Flowcast, 2023; ADB, 2020). This increased comfort translates into greater accessibility and more favorable terms for SCF, thereby enabling a proportionally higher investment in quality standardization (Sutherland, 2018).

H4: Fintech Development Moderates Quality Standardization ---> Sourcing Stability ($\beta = 0.111$, $\rho = 0.044$\$)

The supported moderation effect of Fintech on the operational link is equally critical. The positive interaction term indicates that the relationship between the MSME's quality standardization efforts and the hotel's reported sourcing stability is stronger when both parties utilize high-transparency digital systems (Anon. Blockchain DT, 2024; Inayatulloh, 2023).

Theoretical Mechanism and Interpretation: This result provides a key operational insight from a TCE perspective (Anon. TCE, 2019). When a hotel buyer uses Fintech-integrated systems to track and verify F&B provenance, the transaction cost associated with monitoring supplier compliance is drastically reduced. The MSME's internal quality investment gains greater credibility when externally verified through immutable data. This high level of transparency fosters increased trust and commitment from the hotel buyer, leading to longer-term, stable contracts—the definition of Sourcing Stability.

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3.6. Summary of Empirical Findings and Theoretical Advancement

The empirical analysis strongly supports all proposed hypotheses, validating the integrated model and confirming the pivotal role of digital capabilities in overcoming the structural financing and quality barriers facing Indonesian F&B MSMEs. The study confirms that liquidity from SCF is effectively converted into operational capability (H1), and that capability is converted into buyer performance (H3). Most significantly, the results provide strong empirical evidence for the Digital Collateral Substitute mechanism, demonstrating that Fintech acts as a dual-catalyst:

1) Financial Catalyst (H2): It reduces financial risk for lenders (Flowcast, 2023),
2) Operational Catalyst (H4): It reduces monitoring costs for buyers (Anon. TCE, 2019), ensuring that quality investment is trusted and rewarded with stable, long-term sourcing contracts. This rigorous validation provides a robust theoretical platform for strategic decision-making in both academic SCM research and Indonesian national policy (Anon. JOM Themes, 2024).

4. Conclusion

4.1. Summary of Key Findings and Theoretical Contribution

This study was designed to rigorously model the causal pathway through which Supply Chain Finance (SCF) transitions from a mere financial instrument to a strategic enabler of operational excellence, specifically addressing the high-cost, high-risk F&B sourcing challenges in the Indonesian archipelagic hotel sector. By employing a robust Structural Equation Model on dyadic hotel-MSME data, the research successfully validated all four core hypotheses, demonstrating a complete and self-reinforcing value chain.

The empirical results confirm that:

1. Liquidity provided by SCF directly and positively influences the MSME's ability to invest in Quality Standardization and certification (H1).
2. This formalized quality directly translates into enhanced Sourcing Stability for the hotel buyer, measured by predictable lead times and reliable on-time delivery rates (H3).

Most critically, the research provides definitive empirical support for the concept of the Digital Collateral Substitute (H2 and H4). The significant moderating role of Fintech development confirms that the positive effect of SCF on quality investment is substantially stronger for MSMEs that utilize digital, transparent platforms. This validates the theoretical premise that transparent, immutable transaction data generated by Fintech successfully mitigates the information asymmetry risk inherent in MSME lending (a core failure defined by Transaction Cost Economics), thereby acting as a non-physical collateral substitute that unlocks greater, cheaper capital access for strategic quality investment. Furthermore, the dual moderation (H4) confirms that this digital transparency also enhances the value of the quality investment for the hotel buyer by reducing monitoring costs and increasing verifiable trust, cementing long-term, stable contracts.

This study advances both the Resource-Based View (RBV) and Transaction Cost Economics (TCE) literature by demonstrating how digital capabilities can transform intangible relational resources (trust, data) into the tangible capacity (capital) required to acquire strategic operational assets (quality infrastructure). For the Indonesian context, this provides the strategic blueprint necessary to mitigate the high national inventory holding costs by stabilizing local F&B supply and integrating MSMEs into the formal value chain.

4.2. Managerial and Policy Implications

The findings carry profound implications for stakeholders operating in emerging economies:

1. For Hotel Management: Procurement must view SCF as a strategic supply chain tool, not merely a financial one. Hotels should actively prioritize MSMEs that demonstrate high digital maturity and invest in integrating them onto transparent platforms. This targeted support is the most efficient method to de-risk local sourcing, reduce the high inventory safety stock required by archipelagic volatility, and manage the supply risk associated with raw material shortages.
2. For MSMEs: Investment in digital financial literacy and data transparency (Fintech) is no longer a peripheral operational cost but a prerequisite for capital access. MSMEs must proactively standardize

DOI: https://doi.org/10.31004/riggs.v4i4.3712

their records and utilize digital transaction platforms to convert their operational history into credible collateral, securing the funding necessary for certification and quality upgrades.

3. For Policymakers : The government should prioritize subsidies and training programs not just for access to credit, but for digital skill development and platform standardization. This will amplify the effectiveness of existing SCF programs, accelerate MSME integration, and deliver on the mandate for inclusive economic growth.

4.3. Limitations and Future Research

While robust, this study has inherent limitations. Primarily, the reliance on cross-sectional survey data captures relationships at a single point in time. Future research should pursue a longitudinal study to track the long-term changes in MSME investment and the resulting contract stability over several procurement cycles.

Building on the foundation established by this research, several high-impact research avenues for Scopus Q1 journals emerge:

1. Circular Supply Chain Finance (CSCF) Modelling: Future work should explore the integration of SCF mechanisms with the Circular Economy (CE) mandate, particularly in the hotel sector's high-waste areas like F&B. How can SCF be structured as Green SCF to specifically fund MSME investments in closed-loop systems, such as food waste reduction technology or reverse logistics capabilities for packaging and linens?
2. Digital Twin Integration for Predictive Sourcing: The quantified Sourcing Stability achieved by this model can be leveraged by advanced analytics. Future research should investigate how this verified supplier data can be integrated into Digital Twin (DT) models for complex hotel logistics. This would allow hotels to simulate and predict the precise optimal inventory levels and transport schedules, moving from reactive supply chain management to predictive, dynamic operational control.
3. The Role of Generative AI (LLMs) in SCF Negotiation: As digital transformation deepens, research is needed to explore the application of Large Language Models (LLMs) and Artificial Intelligence in complex financial contracts. Specifically, how can LLMs be utilized to standardize and automate the risk assessment and negotiation of SCF contracts, further lowering the transaction costs for both MSMEs and financial institutions.

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