

Financial Technology Adoption and Digital Transformation in Strengthening MSME Performance and Competitiveness: Evidence from Food and Beverage MSMEs in Malang Regency

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Abstract

This study examines the effect of financial technology (fintech) adoption and digital transformation on the performance and competitiveness of micro, small, and medium enterprises (MSMEs) in the food and beverage sector in Malang Regency, Indonesia. Using a quantitative, explanatory research design, data were collected from 100 MSME actors, exceeding the minimum sample of 98 respondents determined through the Slovin formula, and analyzed using Structural Equation Modeling–Partial Least Square (SEM-PLS) with SmartPLS version 4.1.1.8. The measurement model met the criteria for convergent validity, discriminant validity, and reliability. Structural model results show that fintech adoption has a positive and significant effect on MSME performance ($\beta = 0.222$; $p = 0.001$) and on competitiveness ($\beta = 0.432$; $p = 0.000$); digital transformation also has a positive and significant effect on performance ($\beta = 0.595$; $p = 0.000$), the strongest path in the model, and on competitiveness ($\beta = 0.411$; $p = 0.000$). However, MSME performance was not found to significantly affect competitiveness ($\beta = -0.055$; $p = 0.691$). These findings indicate that competitiveness among food and beverage MSMEs in Malang Regency is driven directly by fintech adoption and digital transformation rather than through an intervening improvement in business performance, with digital transformation, encompassing digital marketing, e-commerce, and digital financial recordkeeping, exerting the most substantial influence overall. This study contributes empirically by jointly testing fintech adoption and digital transformation, within a single structural model, as strategic resources shaping MSME performance and competitiveness in the food and beverage sector; this integrated test is a novelty relative to prior studies that have generally examined the two technologies separately or relied on literature reviews rather than empirical testing. Practically, the findings imply that MSME actors and local policymakers need to move beyond basic digital adoption toward strengthening digital financial literacy, data security, digital recordkeeping, and market-oriented digital strategies in order to convert technology use into durable competitive advantage. The study is grounded in the Resource-Based View, which frames technology as a strategic resource underlying sustainable competitive advantage.

Keywords: financial technology, digital transformation, msme performance, competitiveness, resource-based view

Introduction

Micro, small, and medium enterprises (MSMEs) are a pillar of the Indonesian economy, contributing 61% of gross domestic product (equivalent to IDR 9,580 trillion), comprising roughly 66 million business units, and absorbing about 97% of the national workforce (Kementerian Koperasi dan UKM, 2023). MSMEs have repeatedly served as a

buffer against domestic and global economic shocks and remain central to reducing unemployment and improving public welfare. In Malang Regency alone, MSMEs number approximately 430,000 units, of which around 5,126 units, roughly 1.2% of the regency's total, operate in the food and beverage sector, reflecting both strong entrepreneurial interest in and intense competition within this segment (Dinas Koperasi dan Usaha Mikro Kabupaten Malang, 2024).

The rapid advance of digital technology has reshaped how businesses operate, from production and marketing to payment systems, making digital capability a determinant of business success rather than a mere convenience. Financial technology (fintech), spanning digital payments, online lending, and application-based financial management, has become a central part of this shift, while digital transformation, through social media, e-commerce, and digital operational systems, has further pushed MSMEs to adapt in order to remain competitive. Even so, evidence suggests that only around 12% of Indonesian MSMEs have fully integrated digital technology into their operations, leaving considerable variation in adoption levels among business actors. In Malang Regency specifically, QRIS transaction volume in the greater Malang area reached approximately 17.25 million transactions in October 2025, growing 92.2% year-on-year and dominated by micro-enterprise merchants, with more than 600,000 registered QRIS merchants in the area (Bisnis.com, 2025).

A growing body of research links fintech adoption to improved MSME performance: fintech accelerates transactions, simplifies financial management, and expands access to formal financial services (Fathoni, 2024; Lubis & Nurhayati, 2024; Aliija et al., 2026). Digital transformation has likewise been shown to enhance business performance and competitiveness by improving productivity, operational effectiveness, and market reach (Dwiputra Utama et al., 2024; Angraini et al., 2024; Inga-Ávila et al., 2023). Even so, adoption does not automatically translate into stronger competitiveness. Many MSMEs that use fintech or digital platforms have yet to convert that use into tangible competitive gains, because doing so requires digital literacy and managerial capability to interpret transaction and customer data, systematic integration of digital tools into daily operations, and the strategic use of that data for planning and decision-making, rather than mere access to the technology itself (Dhermawan et al., 2024).

Prior studies have generally examined fintech and digital transformation separately, or have studied digital transformation's effect on performance without incorporating fintech simultaneously, and comprehensive frameworks that integrate both technologies have so far relied mainly on literature reviews rather than empirical testing of MSME performance as a pathway to competitiveness. This leaves a research gap that is analytical rather than merely descriptive: no empirical study has yet tested, in a single model, the joint effect of fintech adoption and digital transformation on MSME performance and the mediating role of performance in shaping competitiveness, nor examined why technology adoption does not uniformly translate into competitive gains, particularly within the food and beverage sector of Malang Regency, a sector characterized by intense competition, perishable products, and typically micro-scale operations.

Theoretically, both fintech adoption and digital transformation can be understood, through the lens of the Resource-Based View (RBV), as strategic resources that MSMEs draw upon to build sustainable competitive advantage, and, following the dynamic-capabilities extension of RBV, as capabilities that enable firms to reconfigure marketing, transactional, and operational routines in response to a changing digital environment (Barney,

1991; Teece et al., 1997; Barney et al., 2021). Resources generate sustained advantage when they are valuable, rare, imperfectly imitable, and non-substitutable (VRIN); fintech and digital transformation meet these criteria to the extent that their effective, well-integrated use, rather than adoption alone, is difficult for competitors to replicate quickly. Building on this theoretical foundation and on the empirical findings reviewed above, the following hypotheses are proposed.

Fintech Adoption and MSME Performance.

Within the RBV framework, fintech functions as an internal resource that can improve operational efficiency and thereby strengthen firm performance (Barney, 1991). Empirically, fintech adoption has been shown to accelerate transactions, simplify financial management, and expand access to formal financial services, translating into improved MSME performance (Fathoni, 2024; Lubis & Nurhayati, 2024; Aliija et al., 2026). Accordingly, this study proposes:

H1: Fintech adoption has a positive and significant effect on MSME performance.

Digital Transformation and MSME Performance.

Digital transformation extends beyond a single resource into a dynamic capability that integrates marketing, transactional, and operational systems (Teece et al., 1997). Prior studies report that digital capability enhances MSME productivity, operational effectiveness, and overall business performance (Dwiputra Hutama et al., 2024; Angraini et al., 2024). Accordingly, this study proposes:

H2: Digital transformation has a positive and significant effect on MSME performance.

Fintech Adoption and MSME Competitiveness.

Fintech adoption can also translate directly into competitive capability by lowering transaction costs and improving customer convenience, a source of competitive advantage under Porter's (1993) view of transaction-cost efficiency and consistent with the VRIN logic of the RBV (Barney, 1991). Prior research links fintech use to stronger MSME competitiveness through efficiency gains and easier access to finance (Lubis & Nurhayati, 2024; Simanjuntak et al., 2024). Accordingly, this study proposes:

H3: Fintech adoption has a positive and significant effect on MSME competitiveness.

Digital Transformation and MSME Competitiveness.

Digital transformation broadens market reach and strengthens competitive positioning by enabling MSMEs to reach more customers and respond faster to market changes, consistent with the RBV view of rare and difficult-to-imitate capabilities as a source of sustained advantage (Barney, 1991). Empirical studies confirm that digital transformation significantly improves MSME competitiveness through expanded market reach and operational efficiency (Angraini et al., 2024; Dwiputra Hutama et al., 2024; Inga-Ávila et al., 2023). Accordingly, this study proposes:

H4: Digital transformation has a positive and significant effect on MSME competitiveness.

MSME Performance and Competitiveness.

Beyond the direct effects of technology, the RBV further predicts that strong internal performance, reflecting well-managed internal resources, should itself function as a

foundation for external competitive advantage (Barney, 1991). Prior work suggests that MSMEs which succeed in improving performance through digital technology use gain greater capacity to innovate, expand markets, and add customer value, key components of competitiveness (Dwiputra Hutama et al., 2024; Simanjuntak et al., 2024). Accordingly, this study proposes:

H5: MSME performance has a positive and significant effect on competitiveness.

Building on these hypotheses, this study aims to examine: (1) the effect of fintech adoption on MSME performance; (2) the effect of digital transformation on MSME performance; (3) the effect of fintech adoption on MSME competitiveness; (4) the effect of digital transformation on MSME competitiveness; and (5) the effect of MSME performance on competitiveness, among food and beverage MSMEs in Malang Regency.

Method

In this study, fintech adoption and digital transformation are treated as strategic resources and capabilities in the RBV sense (Barney, 1991; Teece et al., 1997): fintech adoption represents a resource that MSMEs draw on for transactional efficiency, while digital transformation represents a broader capability integrating digital marketing, financial recordkeeping, and operational systems; both are hypothesized to strengthen MSME performance and, both directly and through performance, MSME competitiveness.

This study used a quantitative approach with an explanatory research design, aimed at testing causal relationships among variables rather than merely describing them (Singarimbun & Effendi, 2006; Creswell, 2014). The independent variables were Fintech Adoption (X1) and Digital Transformation (X2); the dependent variables were MSME Performance (Y1) and Competitiveness (Y2). All items were measured on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Table 1 summarizes the operational definition, indicators, number of items, a sample statement, and the citation source for each variable.

Table 1. Operational Definition and Measurement of Research Variables

Variable	Definition	Indicators	Items	Sample statement	Source
Fintech Adoption (X1)	The extent to which MSME actors use financial technology services (e.g., QRIS, mobile banking, e-wallets) in daily business transactions.	Perceived usefulness; ease of use; interface design; service availability; data privacy; transaction security	7	“The fintech application(s) I use have an interface that is easy to understand (X1.3).”	Rasyid (2017), as cited in Rohmah et al. (2022)*
Digital Transformation (X2)	The extent to which MSMEs adopt digital marketing, e-commerce/marketpl	Digital marketing use; e-commerce/marketplace utilization; digital sales	9	“I use digital systems (e.g., point-	Wardana & Fauziyah

	ace platforms, and digital systems to support sales and operations.	growth; digital financial sustainability; digital operational systems		of-sale, inventory-managemen t applications) in my business operations (X2.8).”	(2023)
MSME Performance (Y1)	Internal business outcomes reflecting growth in sales, capital, workforce, and profit resulting from business operations.	Sales growth; capital growth; reinvestment/productivity; workforce growth; profit growth	6	“My business capital has grown over the past year (Y1.2).”	Noviant i (2018)
Competitiveness (Y2)	The ability of MSMEs to compete in the market through product quality, price, innovation, market reach, and customer loyalty.	Product quality; price competitiveness; product/service innovation; market reach expansion; customer loyalty; market positioning	7	“My product prices are competitive in the market (Y2.2).”	Porter (1993)

The secondary citation for the Fintech Adoption instrument (Rasyid, 2017, as cited in Rohmah et al., 2022) could not be independently verified against a complete reference entry in the source materials provided for this revision; the author should supply the full bibliographic details of Rohmah et al. (2022) before resubmission so that this citation can be completed in the reference list.

The study was conducted among food and beverage MSMEs in Malang Regency, an area selected for its substantial MSME base and its uneven but growing adoption of financial technology and digital tools. The population comprised all 5,126 registered food and beverage MSME units in the regency (Dinas Koperasi dan Usaha Mikro Kabupaten Malang, 2024). Because the population size was known, the sample size was calculated using the Slovin formula with a 10% margin of error, yielding a minimum requirement of 98 respondents.

A 10% margin of error was adopted rather than a stricter 5% because the sampling frame comprises a large, dispersed population of 5,126 food and beverage MSME units with no single, readily accessible complete sampling list. A 10% margin is common in exploratory-explanatory MSME survey research analyzed with SEM-PLS at moderate sample sizes (Hair et al., 2019), and was judged an acceptable trade-off between statistical precision and the practical feasibility of primary data collection within the study's time and resource constraints. The eventual sample of 100 still exceeded the Slovin-derived minimum of 98, providing an additional margin of adequacy.



Data collection used an online questionnaire (Google Form) distributed to food and beverage MSME actors in Malang Regency. At the start of the form, three screening statements confirmed that respondents (a) operated a food and beverage MSME located in Malang Regency, (b) had been in active operation for at least one year, and (c) had used at least one fintech service (QRIS, mobile banking, or e-wallet); respondents who did not meet all three criteria were not able to proceed to the main questionnaire and their responses were not recorded. Data collection continued until 100 fully completed, criteria-eligible responses were obtained, exceeding the Slovin-derived minimum of 98.

Prior to full-scale data collection, the questionnaire was pre-tested on 30 respondents outside the main sample. Validity was assessed using Pearson product-moment correlation (valid if $r\text{-count} > r\text{-table} = 0.361$ at a 5% significance level) and reliability using Cronbach's Alpha (reliable if $\alpha \geq 0.60$) (Sugiyono, 2019; Ghozali, 2018). Data were analyzed in two stages: descriptive statistics to characterize respondents and variable distributions, and inferential analysis using Structural Equation Modeling–Partial Least Square (SEM-PLS) with SmartPLS software, chosen for its suitability to complex, predictive-explanatory models with moderate sample sizes and reflective indicators (Hair et al., 2019). The measurement (outer) model was evaluated through convergent validity (outer loading ≥ 0.70 ; AVE > 0.50), discriminant validity (Fornell-Larcker criterion (Fornell & Larcker, 1981) and HTMT < 0.90 (Henseler et al., 2015)), and internal consistency reliability (Composite Reliability and Cronbach's Alpha > 0.70). The structural (inner) model was evaluated through R-Square and path coefficients tested via bootstrapping with 5,000 subsamples, with paths considered significant when T-statistics > 1.96 and $p < 0.05$ (Hair et al., 2019).

Results and Discussion

Respondent Characteristics

Of the 100 valid respondents, 64% were women and 36% men, consistent with the common pattern of female-led culinary MSMEs in Indonesia. Age was fairly evenly distributed across groups, with the largest share (29%) aged 35–44 years. Most respondents held a senior-high-school education (65%), followed by a diploma or bachelor's degree (34%). In terms of business age, 46% had operated for 4–6 years, followed by 1–3 years (24%) and 7–10 years (20%), indicating a sample dominated by MSMEs that had passed the early survival phase. QRIS was the most widely used fintech service (57%), followed by digital wallets such as GoPay, DANA, ShopeePay, and OVO (24%) and mobile banking (18%). For digital selling, social media was the leading channel (37%), followed by online food-delivery platforms such as GoFood, GrabFood, and ShopeeFood (31%) and WhatsApp Business (23%), reflecting the visual and direct-communication nature of food and beverage marketing. Table 2 summarizes these characteristics.

Table 2. Respondent Characteristics (n = 100)

Category	Group	n	%
Gender	Female	64	64%
	Male	36	36%
Age	< 25 years	25	25%

	25–34 years	22	22%
	35–44 years	29	29%
	45–55 years	23	23%
	> 55 years	1	1%
Last education	Junior high school	1	1%
	Senior high school	65	65%
	Diploma/Bachelor's degree	34	34%
Business age	1–3 years	24	24%
	4–6 years	46	46%
	7–10 years	20	20%
	Other	10	10%
Fintech service used	QRIS	57	57%
	Digital wallet (GoPay/DANA/ShopeePay/OVO)	24	24%
	Mobile banking	18	18%
Digital selling platform	Social media	37	37%
	Food-delivery platform (GoFood/GrabFood/ShopeeFood)	31	31%
	WhatsApp Business	23	23%
	Marketplace (Shopee/Tokopedia/Lazada)	7	7%
	Other channel	2	2%

The dominance of QRIS use, social-media selling, and food-delivery-platform participation among respondents is analytically relevant: it indicates that the sample already possesses meaningful practical exposure to both fintech and digital transformation prior to the survey, rather than representing MSMEs encountering these technologies for the first time. This makes the sample well suited to testing a model that examines the consequences of technology use, rather than merely its initial uptake, on performance and competitiveness. That the pattern held even though a meaningful share of respondents were aged 45–55 (23%) also suggests that fintech and digital-platform use among food and beverage MSMEs in Malang Regency has become a cross-generational necessity rather than a trend confined to younger entrepreneurs.

Descriptively, all four research variables fell into the high category (mean 4.03–4.09 on a 1–5 scale): Digital Transformation scored highest (4.09), followed closely by Competitiveness and Fintech Adoption (4.04 each) and MSME Performance (4.03), with

positive responses (agree/strongly agree) accounting for 80.3–82.1% of all answers across variables.

Measurement Model (Outer Model)

An initial algorithm run in SmartPLS 4.1.1.8 was used to screen all 29 original questionnaire indicators across the four constructs. Indicators with an outer loading below 0.70 were eliminated, and the model was re-estimated with the remaining indicators. Table 3 lists every initial indicator, its final outer loading, and its retention status.

Table 3. Initial Indicators, Outer Loadings, and Retention Status

Construct	Code	Indicator	Loading	Status
Fintech Adoption (X1)	X1.1	Perceived usefulness of fintech	< 0.70	Eliminated
	X1.2	Ease of use	< 0.70	Eliminated
	X1.3	Interface design	0.790	Retained
	X1.4	Service availability	0.786	Retained
	X1.5	Data privacy	< 0.70	Eliminated
	X1.6	Transaction security	0.802	Retained
	X1.7	Confidence in transacting via fintech	< 0.70	Eliminated
Digital Transformation (X2)	X2.1	Social media use	< 0.70	Eliminated
	X2.2	Digital promotion	< 0.70	Eliminated
	X2.3	E-commerce/marketplace use	< 0.70	Eliminated
	X2.4	Digital sales growth	< 0.70	Eliminated
	X2.5	New customers from digital channels	< 0.70	Eliminated
	X2.6	Digital financial recordkeeping	0.812	Retained
	X2.7	Digital financial management	0.822	Retained
	X2.8	Digital operational systems	< 0.70	Eliminated
	X2.9	Digital operational-system implementation	0.831	Retained
MSME Performance (Y1)	Y1.1	Sales growth	< 0.70	Eliminated
	Y1.2	Capital growth	0.799	Retained
	Y1.3	Reinvestment	0.771	Retained

	Y1.4	Productivity	0.717	Retained
	Y1.5	Workforce growth	0.784	Retained
	Y1.6	Profit growth	< 0.70	Eliminated
Competitiveness (Y2)	Y2.1	Product quality	< 0.70	Eliminated
	Y2.2	Price competitiveness	0.748	Retained
	Y2.3	Product/service innovation	0.742	Retained
	Y2.4	Market reach expansion	0.707	Retained
	Y2.5	Customer loyalty (repeat purchase)	0.814	Retained
	Y2.6	Customer loyalty (recommendation)	0.817	Retained
	Y2.7	Market positioning	< 0.70	Eliminated

The exact algorithm output for the eliminated indicators (X1.1, X1.2, X1.5, X1.7, X2.1–X2.5, X2.8, Y1.1, Y1.6, Y2.1, Y2.7) was not retained in the underlying dataset made available for this revision; Table 3 reports only that each fell below the 0.70 retention threshold. The full first-run SmartPLS output should be re-exported and the precise loading values added before resubmission.

The final model retained three indicators each for Fintech Adoption (interface design, service availability, and data security; loadings 0.786–0.802) and Digital Transformation (digital financial recordkeeping, digital financial management, and operational digital systems; loadings 0.812–0.831), four for MSME Performance (capital growth, reinvestment, productivity, and workforce growth; loadings 0.717–0.799), and five for Competitiveness (price competitiveness, innovation, market reach, and customer loyalty items; loadings 0.707–0.817). All constructs achieved AVE above 0.50 (0.588–0.675), satisfying convergent validity.

Theoretically, the elimination of the sales-growth and profit-growth indicators from MSME Performance, and of the product-quality indicator from Competitiveness, suggests that respondents perceived these outcomes as less consistently linked to their day-to-day technology use than the retained, more process-oriented indicators. Sales and profit are shaped by numerous factors beyond digital adoption, such as seasonal demand and raw-material costs, so respondents may have found it harder to attribute changes in these outcomes specifically to fintech or digital-transformation use. Likewise, food and beverage MSME owners frequently regard their product quality as already meeting a basic standard regardless of digital-tool use, which may explain why product quality loaded less strongly than more market-facing indicators such as price competitiveness and innovation.

Reliability was confirmed for all constructs, with Cronbach's Alpha ranging from 0.705 (Fintech Adoption) to 0.824 (Competitiveness) and Composite Reliability from 0.835 to 0.877, all above the 0.70 threshold. Discriminant validity was supported under the Fornell-Larcker criterion (Fornell & Larcker, 1981), and all HTMT values remained below the 0.90

threshold (Henseler et al., 2015), though the ratio between Digital Transformation and MSME Performance (0.813) was notably high, consistent with the strong path coefficient later observed between these two constructs and reflecting their close conceptual association in daily MSME practice.

Structural Model (Inner Model) and Hypothesis Testing

The model explained 44.1% of the variance in MSME Performance ($R^2 = 0.441$) and 36.7% of the variance in Competitiveness ($R^2 = 0.367$), both falling in the moderate-to-weak range (Hair et al., 2019), indicating that fintech adoption and digital transformation are relevant but not sole predictors of these outcomes. Bootstrapped path coefficients (5,000 subsamples) are summarized in Table 4.

Table 4. Path Coefficients and Hypothesis Testing Results

H	Path	Coefficient	T-stat.	p-value	Result
H1	Fintech Adoption (X1) → MSME Performance (Y1)	0.222	3.248	0.001	Supported
H2	Digital Transformation (X2) → MSME Performance (Y1)	0.595	7.516	0.000	Supported
H3	Fintech Adoption (X1) → Competitiveness (Y2)	0.432	4.855	0.000	Supported
H4	Digital Transformation (X2) → Competitiveness (Y2)	0.411	3.881	0.000	Supported
H5	MSME Performance (Y1) → Competitiveness (Y2)	-0.055	0.398	0.691	Not supported

Fintech Adoption had a positive and significant effect on MSME Performance (H1: $\beta = 0.222$, $t = 3.248$, $p = 0.001$), consistent with the Resource-Based View, in which financial-technology capability functions as an internal resource that improves operational efficiency (Barney, 1991). This is in line with prior evidence that fintech accelerates transactions and simplifies financial management for MSMEs (Fathoni, 2024; Lubis & Nurhayati, 2024). The dominance of QRIS (57%) among respondents with 4–6 years of business experience suggests that sustained, routine use of non-cash payment tools translates into tangible gains in cash management and record-keeping efficiency, consistent with the moderate path coefficient observed. At the same time, the comparatively modest size of this coefficient suggests that fintech adoption may improve transactional efficiency more readily than it improves broader MSME performance: translating efficiency gains into measurable growth in capital, productivity, and workforce likely depends on how well MSME actors use the resulting fintech data, transaction histories, cash-flow records, for planning, budgeting, and decision-making, rather than on fintech use alone.

Digital Transformation exerted the strongest effect in the model on MSME Performance (H2: $\beta = 0.595$, $t = 7.516$, $p = 0.000$), exceeding the effect of fintech alone. This finding reinforces the Resource-Based View's emphasis on dynamic capability (Teece et al., 1997): because digital transformation integrates marketing, transactional, and operational

capabilities simultaneously, it exerts a broader influence on performance than a single resource such as fintech. This refines the theoretical explanation offered above: digital transformation should not be understood merely as a technological resource but as a capability, an integrated way of running the business that combines digital marketing, financial recordkeeping, and operational systems, which is why its effect on performance exceeds that of fintech adoption considered on its own. The result is consistent with evidence that digital capability drives MSME productivity and operational effectiveness (Dwiputra Hutama et al., 2024), and is corroborated by the sample's heavy reliance on low-cost, wide-reach digital marketing channels, social media (37%) and online food-delivery platforms (31%), well suited to the limited promotional budgets typical of micro-scale food and beverage businesses.

Fintech Adoption also had a positive and significant, and comparatively larger, effect on Competitiveness (H3: $\beta = 0.432$, $t = 4.855$, $p = 0.000$) than on Performance, suggesting that the ease and security of digital transactions translate more directly into competitive capability, for instance through transaction-cost efficiency and improved customer convenience, than into internal performance metrics such as capital growth, which require more time to materialize. This supports Porter's (1993) view that competitive advantage can arise from transaction-cost efficiency, and aligns with the VRIN framework (Barney, 1991), given that integrating fintech into pricing and service strategy is not easily replicated by competitors still relying on conventional systems.

Digital Transformation had a positive and significant effect on Competitiveness as well (H4: $\beta = 0.411$, $t = 3.881$, $p = 0.000$), consistent with evidence that digital transformation broadens market reach and strengthens competitiveness (Angraini et al., 2024; Dwiputra Hutama et al., 2024; Inga-Ávila et al., 2023). Interestingly, this path coefficient was slightly smaller than that of Fintech Adoption on Competitiveness (0.432) despite Digital Transformation's higher descriptive mean score (4.09 vs. 4.04), illustrating that the magnitude of a variable's perceived importance does not always correspond directly to its structural effect. That this relationship remained significant even though respondents were not concentrated among younger age groups, including a meaningful share aged 45–55 (23%), suggests that social-media and food-delivery-platform adoption has become a cross-generational necessity rather than a trend confined to younger entrepreneurs.

Contrary to the theoretical expectation that internal performance should mediate the link between resources and competitive advantage (Barney, 1991), MSME Performance did not significantly affect Competitiveness (H5: $\beta = -0.055$, $t = 0.398$, $p = 0.691$). Because the sample size (100) exceeded the Slovin-derived minimum (98), this non-significant result is unlikely to be a function of insufficient statistical power. This result diverges from studies such as Dwiputra Hutama et al. (2024) and Simanjuntak et al. (2024), which reported that improved MSME performance does translate into stronger competitiveness; several explanations may account for the discrepancy. A measurement-level explanation is that MSME Performance in this study is operationalized through internal, resource-accumulation indicators (capital growth, reinvestment, productivity, and workforce growth) that unfold gradually, whereas Competitiveness is operationalized through externally oriented, market-facing indicators (pricing, innovation, market reach, and customer loyalty); the two constructs may capture different stages of the value-creation process rather than a single causal chain. A time-lag explanation is that, with 46% of respondents having operated for only 4–6 years, internal performance gains may not yet have had sufficient time to convert into an observable

shift in market position, a limitation inherent to this study's cross-sectional design. A sector-specific explanation is that food and beverage MSMEs operate in a fast-moving, perishable-product segment in which price, innovation, and market reach may respond more quickly and directly to visible digital practices, QRIS payments, social-media promotion, than to slower-moving internal financial indicators. Taken together, these explanations support the view that, in this sector and context, competitiveness is shaped more directly by market-facing digital practices than by internal financial performance gains.

Conclusion

This study finds that both fintech adoption and digital transformation have positive and significant effects on the performance and competitiveness of food and beverage MSMEs in Malang Regency, with digital transformation exerting the strongest overall influence in the model. However, MSME performance does not significantly mediate the relationship between technology adoption and competitiveness; instead, competitiveness gains appear to stem directly from fintech adoption and digital transformation rather than through an intervening rise in internal business performance. Theoretically, these findings support the Resource-Based View by showing that digital resources, specifically fintech adoption and digital transformation, can contribute directly to competitiveness without requiring a full mediating pathway through internal performance, extending the applicability of RBV to micro-scale, market-facing competitive contexts (Barney, 1991; Barney et al., 2021). In the context of micro-scale food and beverage enterprises, digital resources may thus generate market-facing competitiveness more directly than through gradual internal performance improvement, indicating that resource-driven advantage need not always pass through observable improvements in a firm's internal performance metrics before manifesting as external competitiveness.

These findings suggest that MSME actors should not only continue to optimize consistent use of QRIS and other fintech services, but also extend digital transformation beyond marketing into financial recordkeeping and operational management, using transaction-cost efficiency from fintech as a basis for price-competitiveness strategy, and building market-facing strategies directly rather than relying solely on internal performance improvement as a pathway to competitiveness. Financial institutions and fintech providers are encouraged to develop features aligned with the dominant user profile centered on QRIS, strengthen digital financial literacy support, and reinforce data security and transaction privacy. Local government agencies are encouraged to broaden digital-transformation training beyond marketing alone and expand outreach on fintech adoption to MSMEs that have not yet adopted digital services.

This study is limited by its cross-sectional design and its focus on a single sector and regency, which may not capture the time lag between internal performance gains and competitive outcomes. Future research is encouraged to expand the sample size, geographic scope, and business sectors; examine additional variables or mechanisms, such as digital literacy or institutional support, that might better bridge MSME performance and competitiveness; and adopt longitudinal designs capable of capturing such time-lag effects more directly.

References

- Aliija, R., Nsambu, K. F., Kule, J. B., Rwakihembo, J., Bakashaba, R., & Tumuhimbise, M. (2026). Digital financial innovation adoption and SME financial performance: The mediating role of financial inclusion in developing economies. *International Journal of Finance*, 11(5), 18–37. <https://doi.org/10.47941/ijf.3880>
- Angraini, D., Riady, Y., Putimasurai, P., Pratama, A., Sadria, A., & Rosmiati, R. (2024). Transformasi digital dalam meningkatkan daya saing usaha mikro, kecil, dan menengah (UMKM) Indonesia: Sebuah tinjauan sistematis. *Eklektik: Jurnal Pendidikan Ekonomi dan Kewirausahaan*, 7(2), 132. <https://doi.org/10.24014/ekl.v7i2.33958>
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
- Barney, J. B., Ketchen, D. J., Jr., & Wright, M. (2021). Resource-based theory and the value creation framework. *Journal of Management*, 47(7), 1936–1955. <https://doi.org/10.1177/01492063211021655>
- Bisnis.com. (2025). Perkembangan transaksi QRIS UMKM di Malang Raya. *Bisnis.com*.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage Publications.
- Dhermawan, I., Anugraini, M., Khusnah, H., & Muttaqin, N. (2024). Efek mediasi penggunaan financial technology. *Accounting and Management Journal*, 8(2), 1–15.
- Dinas Koperasi dan Usaha Mikro Kabupaten Malang. (2024). Data jumlah UMKM sektor makanan dan minuman di Kabupaten Malang. Dinas Koperasi dan Usaha Mikro Kabupaten Malang.
- Dwiputra Hutama, Raharjo, K., & Nugroho, A. (2024). Impact of digital capability on SMEs performance: Mediating role of digital business transformation. *Wacana Jurnal Sosial dan Humaniora*, 26(3), 122–131. <https://doi.org/10.21776/ub.wacana.2023.026.03.02>
- Fathoni, A. N. (2024). Transformasi digital bisnis UMKM di Indonesia setelah masa pandemi. *Innovative: Journal of Social Science Research*, 4(3), 10219–10236.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.1177/002224378101800104>
- Ghozali, I. (2018). *Aplikasi analisis multivariate dengan program IBM SPSS 25* (9th ed.). Badan Penerbit Universitas Diponegoro.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Inga-Ávila, M. F., Churampi-Cangalaya, R. L., Ulloa-Ninahuamán, J., Inga-Ávila, J. L., Uribe-Hinostroza, M., Inga-Aliaga, M. Á., & Huamán-Pérez, F. (2023). Digital transformation and competitiveness in Peruvian small business. *International Journal of Data and Network Science*, 7(4), 1797–1804. <https://doi.org/10.5267/j.ijdns.2023.7.012>

- Kementerian Koperasi dan Usaha Kecil Menengah Republik Indonesia. (2023). Data usaha mikro, kecil, dan menengah (UMKM) Indonesia. Kementerian Koperasi dan UKM RI.
- Lubis, E. F. M., & Nurhayati, N. (2024). Pengaruh literasi keuangan dan financial technology terhadap kinerja keuangan UMKM. *Journal of Business and Economics Research (JBE)*, 5(2), 178–187. <https://doi.org/10.47065/jbe.v5i2.5259>
- Mokodompit, M. P., Syarifuddin, S., & Mutia, S. (2019). Identifikasi Faktor yang Mempengaruhi Kinerja UMKM. *Profita : Komunikasi Ilmiah Akuntansi Dan Perpajakan*, 12(2), 242–248. <https://doi.org/10.22441/profita.2019.v12.02.005>
- Porter, M. E. (1993). *Keunggulan bersaing: Menciptakan dan mempertahankan kinerja unggul*. Erlangga.
- Simanjuntak, D. R. ., Berampuh, R. S. ., & Sukma, Y. A. S. . (2024). Pengaruh Literasi Keuangan Dalam Penggunaan Financial Technology (Fintech) Terhadap Perilaku Manajemen Keuangan Dikalangan Masyarakat UMKM Kota Medan. *Jurnal Ekonomika Dan Bisnis (JEBS)*, 4(5), 1116–1124. <https://doi.org/10.47233/jebs.v4i5.2070>.
- Singarimbun, M., & Effendi, S. (2006). Metode penelitian survai. LP3ES.
- Sugiyono. (2019). Metode penelitian kuantitatif, kualitatif, dan R&D. Alfabeta.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Wardana, D., & Fauziah, S. (2025). Transformasi digital UMKM: peran pemasaran digital terhadap keberlanjutan keuangan melalui pertumbuhan penjualan. *JIAI (Jurnal Ilmiah Akuntansi Indonesia)*, 10(2), 162-171.