

The Impact of Supplier Relationship Management and Customer Relationship Management on the Performance of Food and Beverage SMEs: The Mediating Role of Competitive Advantage in Bandung City

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Abstract

This study examines the effects of Supplier Relationship Management (SRM) and Customer Relationship Management (CRM) on the performance of food and beverage micro, small, and medium enterprises (MSMEs) in Bandung City, Indonesia, with Competitive Advantage as a mediating variable. A quantitative explanatory survey design was employed, with data collected through structured questionnaires from 100 owners and managers of food and beverage MSMEs using purposive sampling and analyzed via Structural Equation Modeling–Partial Least Squares (SEM-PLS). The findings show that SRM and CRM have positive and significant effects on Competitive Advantage, but neither directly affects MSME Performance; their effects are fully mediated by Competitive Advantage, which itself has the strongest direct effect on performance ($\beta = 0.691$). SRM contributes more strongly to Competitive Advantage than CRM ($\beta = 0.563$ vs. $\beta = 0.351$). These findings extend relationship management literature by clarifying Competitive Advantage's role as the primary mechanism linking SRM and CRM to MSME performance, and suggest that owners should direct relationship-management efforts explicitly toward building differentiation, cost efficiency, and service quality rather than treating them as performance drivers in themselves.

Keywords:

Supplier Relationship Management; Customer Relationship Management; Competitive Advantage; SME Performance; Food and Beverage MSMEs.

1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) represent a strategic pillar in national and regional economies, consistently demonstrating their capability to absorb labor, increase household income, and foster inclusive local economic growth (OECD, 2023; World Bank, 2023). In West Java Province, the MSME sector serves as the primary driver of economic activity, contributing significantly to the Gross Regional Domestic Product (GRDP), particularly through trading, processing industries, and food and beverage services (Badan Pusat Statistik Provinsi Jawa Barat, 2025; Kementerian Usaha Mikro, Kecil, dan Menengah Republik Indonesia, 2024). As the provincial capital and a hub for the creative economy and tourism, Bandung City exhibits highly dynamic market conditions (Badan Pusat Statistik Kota Bandung, 2024). Based on micro-enterprise sector data, the food and beverage (culinary) sector dominates the MSME structure in Bandung City, experiencing steady growth with thousands of operational units (Badan Pusat Statistik Kota Bandung, 2024). However, this massive growth brings forth intense and increasingly complex market competition (Kementerian Usaha Mikro, Kecil, dan Menengah Republik Indonesia, 2024).

Empirical data illustrate the scale of this phenomenon: the number of micro-scale culinary enterprises in Bandung City increased from 3,464 units in 2022 to 4,024 units in 2023 (Open Data Kota Bandung, 2024), a growth pattern concentrated disproportionately in high-density districts such as Bojongloa Kaler and Babakan

Ciparay. This rapid, spatially uneven expansion intensifies competitive pressure and exposes underlying relational weaknesses: supply-side instability characterized by inconsistent raw material availability and uncoordinated delivery schedules has been documented among small and medium enterprises in the Bandung Raya area, where poor supplier communication directly disrupted production continuity and reduced customer satisfaction (Lham & Ludiya, 2024). On the demand side, many culinary MSMEs continue to rely on one-time transactional selling rather than structured customer data management or loyalty programs, limiting their ability to build repeat patronage. These gaps indicate that relational capability, not merely production capacity, increasingly determines competitive survival in this sector.

The high level of competition in Bandung's culinary sector demands that business actors look beyond product quality alone and adopt comprehensive managerial strategies to manage their business ecosystems effectively (Jacobides, 2022); (Altman et al., 2022). Culinary MSMEs frequently face various operational challenges, including price fluctuations, raw material shortages, supply inconsistencies, delivery delays, low customer retention, and rapidly shifting consumer preferences (Nomleni et al., 2025; Sari et al., 2024). These phenomena indicate that MSME performance is not solely determined by internal production capabilities but heavily relies on the extent to which business owners can effectively integrate their supply chain processes across both upstream and downstream dimensions (Dung et al., 2021; Pu et al., 2023)

From the perspective of Supply Chain Management (SCM) Theory, business success depends on the effectiveness of cross-functional coordination and integration with external partners (Badwan, 2025; Li et al., 2022). Upstream integration is materialized through strategic partnerships with suppliers, known as Supplier Relationship Management (SRM) (Amiri et al., 2024; Butt et al., 2023). SRM emphasizes transparent information sharing, trust, long-term commitment, operational coordination, and supplier performance evaluation (Ike et al., 2021; Jones, 2025). Structured SRM practices enable MSMEs to secure reliable, high-quality raw material supplies, achieve procurement cost efficiencies, and mitigate production disruption risks (Bhattacharya et al., 2023; Mourtzis & Panopoulos, 2022). This aligns with local evidence from West Java, where supply chain management practices encompassing strategic supplier partnership, customer relationship, and information sharing have been shown to significantly strengthen the competitive advantage of food-based cooperatives in Bandung Barat Regency (Yun & Kurniawan, 2017).

Conversely, downstream integration is realized through Customer Relationship Management (CRM), which focuses on understanding customer needs, interactive communication, service personalization, and loyalty management (Pereira et al., 2025; Rane et al., 2023). Responsive customer relationship management has been proven to enhance customer satisfaction, drive repeat purchases, and strengthen market retention (Dwivedi et al., 2024; Ijomah et al., 2024).

While SRM and CRM play crucial roles, the influence of these two relational strategies on MSME performance is not always direct; rather, it requires a driving mechanism in the form of Competitive Advantage (Hariastuti et al., 2021; Susanti et al., 2023) (Barney & Clark, 2007). Grounded in the Resource-Based View (RBV) and SCM Theory, competitive advantage reflected through product differentiation, cost leadership, service quality, innovation, and brand reputation stems from effective supply chain collaboration (Kwak et al., 2018; Liao et al., 2017). This competitive advantage subsequently serves as the foundation for enhancing MSME performance across financial (revenue and profit), operational, marketing, and customer satisfaction dimensions (Bhalla, 2025; Rahmawati et al., 2025). Similarly, a study on dairy farmers in West Bandung Regency found that supply chain integration enhances competitive advantage through supply chain performance, reinforcing the mediating role competitive advantage plays in translating relational capabilities into measurable business outcomes (Yun & Kurniawan, 2019).

Although literature on SCM and firm performance has evolved substantially, most empirical studies have examined SRM and CRM in isolation or focused primarily on large corporations (Hult et al., 2022; Muratcehajic & Loureiro, 2024). Research that simultaneously integrates SRM (upstream integration) and CRM (downstream integration) in relation to MSME performance while positioning competitive advantage as a mediating variable remains limited, particularly within the spatial context of culinary MSMEs in Bandung City a gap made more pressing by the phenomenon above, where relational instability on both the supplier and customer side coexists with rapid, geographically concentrated market entry. (Lestari et al., 2025; Rahmi et al., 2025). Therefore, this study aims to empirically test and analyze the effects of SRM and CRM on the performance of food and beverage MSMEs in Bandung City, both directly and indirectly through the mediating role of competitive advantage. This study is expected to contribute theoretically to the enrichment of SCM literature in the MSME sector and provide practical insights for business owners and regional policymakers. Studies on MSME performance determinants in the Bandung and Cimahi area further indicate that entrepreneurial competence and orientation significantly affect business performance (Ludiya & Kurniawan, 2020), while business competence has also been linked to business survival among culinary MSMEs in Bandung (Kurniawan & Yun, 2018), underscoring the relevance of relational and capability-based factors to MSME sustainability in this region.

2. RESEARCH METHOD

2.1. Research Design

This study employed a quantitative research approach using an explanatory survey design to examine the causal relationships among Supplier Relationship Management (SRM), Customer Relationship Management (CRM), Competitive Advantage, and MSME Performance. A quantitative approach was considered appropriate because the objective of this study was to empirically test the proposed hypotheses through statistical analysis of numerical data collected from respondents. The explanatory design was selected to investigate both the direct and indirect effects among variables, particularly the mediating role of competitive advantage in the relationship between SRM, CRM, and MSME performance (Mulualet al., 2022; Najaf et al., 2018).

The research framework was developed based on Supply Chain Management (SCM) Theory and the Resource-Based View (RBV), proposing that upstream integration through supplier relationship management and downstream integration through customer relationship management contribute to the development of competitive advantage, which subsequently enhances MSME performance.

2.2. Research Population and Sample

The target population consisted of all food and beverage MSMEs operating within the administrative area of Bandung City, Indonesia, in 2025. According to the official Open Data Bandung database, there were 5,971 active micro food and beverage enterprises registered during the study period.

Considering the relatively large population size and the geographical distribution across 30 districts, a census approach was not feasible. Therefore, this study employed a sampling technique to obtain representative data from the population. The minimum sample size was determined using the Slovin formula with a margin of error of 10%, as follows:

$$n = \frac{N}{1 + Ne^2}$$

Where:

n = minimum sample size

N = population size (5,971 MSMEs)

e = margin of error (0.10)

The calculation resulted in a minimum sample requirement of 98.35 respondents, which was rounded up to 100 respondents to improve statistical reliability and compensate for incomplete or unusable questionnaires.

The study adopted purposive sampling, whereby respondents had to satisfy the following inclusion criteria. Owners or managers of micro-scale food and beverage MSMEs; actively operating within Bandung City; businesses operating for at least one year; willing to participate voluntarily in the research.

2.3. Research Variables

The study consisted of four latent variables. Supplier Relationship Management (SRM) as the first independent variable; Customer Relationship Management (CRM) as the second independent variable; Competitive Advantage as the mediating variable; MSME Performance as the dependent variable. The operational definitions and measurement indicators were adapted from previous validated studies to ensure construct validity.

2.4. Data Collection

Primary data were collected through a structured questionnaire administered to the selected MSME owners and managers. Data collection was conducted during 2025 using both offline and online survey distribution.

The questionnaire consisted of two sections. The first section gathered respondents' demographic information, while the second measured perceptions regarding SRM, CRM, Competitive Advantage, and MSME Performance.

Each construct was measured using multiple reflective indicators evaluated on a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree (Vidyanata et al., 2023).

Prior to the main survey, a pilot test was conducted to evaluate the clarity of questionnaire items and identify any ambiguous statements. Necessary revisions were made before large-scale data collection commenced.

Secondary data were obtained from academic journals, government reports, official statistics, and previous literature to support the theoretical framework and research background.

2.5. Measurement of Variables

The operationalization of variables was developed based on established literature. Supplier Relationship Management was measured through five dimensions: information sharing, trust, partnership commitment, operational coordination, and supplier evaluation (Awory et al, 2025; Uddin, 2025). Customer Relationship Management was measured using customer orientation, customer information management, interactive communication, service personalization, and loyalty management (Buttle & Maklan, 2019; Opoku et al., 2025). Competitive Advantage consisted of product differentiation, cost leadership, service quality, innovation, and business reputation (Guo & Fu, 2019; Nguyen et al., 2023). MSME Performance was evaluated using financial performance, operational performance, marketing performance, customer performance, and innovation performance (Patra & Chhatoi, 2026; Vijayakumar & Chandrasekar, 2022).

2.6. Data Analysis

The collected data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS 4 software. SEM-PLS was selected because it is suitable for predictive research models involving multiple latent constructs, mediation analysis, relatively small sample sizes, and data that do not necessarily meet multivariate normality assumptions (Sarstedt et al., 2020).

2.6.1. Measurement Model (Outer Model)

The measurement model evaluation assessed the reliability and validity of reflective constructs through: Indicator loading (> 0.70); Average Variance Extracted (AVE > 0.50); Composite Reliability (CR > 0.70); Cronbach's Alpha (> 0.70); Discriminant validity using the Fornell–Larcker criterion and cross-loadings. Indicators failing to satisfy the recommended thresholds would be removed before the structural model evaluation.

2.6.2. Structural Model (Inner Model)

The structural model was evaluated through: coefficient of determination (R^2); path coefficients; bootstrapping (5,000 resamples); effect size (f^2); predictive relevance (Q^2). A relationship was considered statistically significant when t-value > 1.96 and p-value < 0.05 .

2.7. Mediation Analysis

The mediating effect of Competitive Advantage was examined using the bootstrapping procedure in SmartPLS. Indirect effects were considered significant when the corresponding p-value was below 0.05. The mediation effect was interpreted as: full mediation when the indirect effect was significant while the direct effect became insignificant; partial mediation when both direct and indirect effects remained significant.

2.8. Ethical Considerations

Participation in this research was entirely voluntary. Prior to completing the questionnaire, respondents received an explanation regarding the purpose of the study, confidentiality procedures, and their right to withdraw at any time without consequence. No personal identifying information was collected, and all responses were analyzed anonymously for academic purposes only.

2.9. Methodological Limitations

Several limitations should be acknowledged. First, the study employed a cross-sectional design, which limits the ability to infer causal relationships over time. Second, the findings relied on self-reported perceptions of MSME owners, which may introduce response bias. Third, the research focused exclusively on micro-scale food and beverage MSMEs in Bandung City; therefore, the generalizability of the findings to other sectors or regions should be interpreted with caution. Despite these limitations, rigorous instrument validation, purposive sampling, and SEM-PLS analysis were employed to enhance the robustness and reliability of the research findings.

3. RESULTS AND DISCUSSION

3.1. Respondent Profile

A total of 100 valid questionnaires were collected from owners and managers of food and beverage MSMEs operating in Bandung City. Table 2 summarizes the demographic characteristics of the respondents.

Table 1. Respondent Characteristics

Characteristics	Category	Frequency	Percentage
Gender	Male	51	51%
	Female	49	49%
Generation	Generation Z	58	58%
	Millennials	40	40%

	Baby Boomers	2	2%
Education	High School	48	48%
	Diploma	13	39%
	Bachelor	39	32%
Business Scale	Micro	32	32%
	Small	45	45%
	Medium	23	23%
Product Type	Food	74	74%
	Beverage	26	26%

The results indicate that most respondents were male (51%), belonged to Generation Z (58%), possessed a high school educational background (48%), operated small-scale enterprises (45%), and mainly engaged in the food business (74%). These characteristics reflect the current structure of food and beverage MSMEs in Bandung City, where young entrepreneurs dominate businesses with relatively small organizational structures.

3.2. Measurement Model Assessment

Before evaluating the structural relationships, the measurement model was assessed through tests of convergent validity, discriminant validity, and construct reliability following the recommendations of (Hair et al., 2007).

3.2.1. Convergent Validity and Reliability

Table 2. Measurement Model Results

Construct	CR	AVE
Supplier Relationship Management	0.917	0.504
Customer Relationship Management	0.934	0.503
Competitive Advantage	0.939	0.506
MSME Performance	0.944	0.531

All constructs achieved Composite Reliability values above 0.70, indicating excellent internal consistency. Likewise, all AVE values exceeded the recommended threshold of 0.50, confirming adequate convergent validity. Although several indicators exhibited outer loadings between 0.60 and 0.70, they were retained because the overall AVE and Composite Reliability values satisfied the recommended criteria (Hair et al., 2007).

3.2.2. Discriminant Validity

Discriminant validity was assessed using cross-loadings and the Fornell–Larcker criterion. Each indicator loaded highest on its respective construct, while the square roots of AVE were greater than the correlations among constructs, confirming satisfactory discriminant validity.

3.3. Structural Model Assessment

The structural model was evaluated using the coefficient of determination (R^2), effect size (f^2), and bootstrapping procedures.

3.3.1. Coefficient of Determination

Table 3. Coefficient of Determination

Endogenous Variable	R^2	Adjusted R^2
Competitive Advantage	0.591	0.583
MSME Performance	0.704	0.695

The model explains 59.1% of the variance in Competitive Advantage and 70.4% of the variance in MSME Performance. According to (Hair et al., 2007), these values indicate moderate-to-high predictive accuracy, suggesting that SRM, CRM, and Competitive Advantage jointly provide substantial explanatory power for MSME performance.

3.3.2. Effect Size

Table 4. Effect Size (f^2)

Relationship	f^2	Interpretation
SRM → Competitive Advantage	0.663	Large
CRM → Competitive Advantage	0.257	Medium
SRM → MSME Performance	0.011	Small
CRM → MSME Performance	0.049	Small
Competitive Advantage → MSME Performance	0.659	Large

Supplier Relationship Management exhibited the strongest contribution to Competitive Advantage, whereas Competitive Advantage demonstrated the largest effect on MSME Performance.

3.4. Hypothesis Testing and Discussion

The hypothesis testing results obtained from the bootstrapping procedure are presented in Table 5.

Table 5. Structural Model Results

Hypothesis	β	t	p	Result
SRM → Competitive Advantage	0.563	7.608	0.001	Supported
SRM → MSME Performance	0.079	0.715	0.476	Not Supported
CRM → Competitive Advantage	0.351	4.857	0.001	Supported
CRM → MSME Performance	0.146	1.753	0.083	Not Supported
Competitive Advantage → MSME Performance	0.691	6.439	0.001	Supported
SRM → Competitive Advantage → Performance	0.389	5.329	0.001	Supported
CRM → Competitive Advantage → Performance	0.242	3.572	0.001	Supported

3.4.1. Effect of Supplier Relationship Management on Competitive Advantage

The findings demonstrate that Supplier Relationship Management significantly improves Competitive Advantage ($\beta = 0.563$; $t = 7.608$; $p = 0.001$), supporting the theoretical perspective of Supply Chain Management Theory (Li et al., 2006). This is the strongest direct path in the model, indicating that structured supplier collaboration encompassing information sharing, trust, long-term commitment, operational coordination, and supplier evaluation is the most powerful lever available to MSMEs for building distinctive competitive positioning.

This result is consistent with recent empirical evidence. Acquah et al. (2023), in a PLS-SEM study of 122 firms in Ghana, confirmed that SRM exerts a positive and significant effect on competitive advantage, with supply chain responsiveness serving as a partial mediator. Siagian et al. (2024), examining 445 SMEs in East Java using SmartPLS, found that supply chain partnership a core dimension of SRM significantly strengthens competitive advantage ($\beta = 0.249$), with cross-functional integration as the dominant upstream driver. Similarly, Yehuala (2023) confirmed that SRM practices directly and positively enhance competitive advantage in manufacturing companies. These convergent findings across diverse geographic and sectoral contexts reinforce the conclusion that formalized supplier relationships are a critical source of competitive positioning for SMEs, particularly in resource-constrained environments where supply reliability and procurement efficiency directly determine product quality and cost structure.

Managerially, this implies that MSME owners should prioritize formalizing supplier coordination through scheduled evaluation and joint planning as the most direct lever available for building competitive advantage. Investment in SRM should not be treated as a transactional cost-saving measure but as a strategic mechanism for building distinctive market positioning.

3.4.2. Effect of Supplier Relationship Management on MSME Performance

Supplier Relationship Management does not directly influence MSME Performance ($\beta = 0.079$; $t = 0.715$; $p = 0.476$). This finding indicates that upstream integration through SRM does not automatically translate into superior business performance within micro and small food and beverage enterprises; firms must first convert this relational capability into competitive advantage through product differentiation, operational efficiency, innovation, and superior customer value.

This result diverges from studies that positioned SRM or general SCM practices as direct performance drivers without a mediating construct (Awory et al., 2025; Emon et al., 2024). However, it aligns closely with studies that explicitly tested competitive advantage as a mediating variable. Silitonga et al. (2023), examining culinary industry MSMEs in Bandung using path analysis, found that supply chain management does not directly affect company performance but exerts a significant indirect effect through competitive advantage a pattern structurally identical to what the present study found for SRM. Bargouthi et al. (2025), in a PLS-SEM study of 213 SMEs in the West Bank, similarly found that while CRM and supplier partnership significantly affect competitive advantage, the competitive advantage construct is the pathway through which SCM practices generate performance outcomes. Singagerda et al. (2024), in a large-scale PLS-SEM study of 432 Indonesian

SMEs, further confirmed that supply chain management positively affects competitive advantage, which in turn affects SME performance. These findings collectively support the proposition that in the context of resource-constrained MSMEs, investment in supplier relations alone will not move performance metrics unless it is explicitly channeled into differentiation or cost-efficiency strategy first.

3.4.3. Effect of Customer Relationship Management on Competitive Advantage

Customer Relationship Management has a positive and significant effect on Competitive Advantage ($\beta = 0.351$; $t = 4.857$; $p = 0.001$), though its contribution is smaller than that of SRM. This confirms that responsive customer relationship management through customer orientation, interactive communication, service personalization, and loyalty management meaningfully strengthens the differentiation, service quality, and reputation dimensions of competitive advantage, even if less strongly than supplier-side practices.

This finding is supported by multiple recent studies. Islami et al. (2025), examining 155 manufacturing SMEs in Kosovo using SEM, found that customer relationship has a positive and significant association with competitive advantage, fully mediated by differentiation strategy. Alenazi & Alanazi (2023), using SmartPLS on 243 SMEs in Saudi Arabia, confirmed that social CRM positively affects both competitive advantage and dynamic capabilities. Mustikowati et al. (2021), in a study of 255 retail companies in Indonesia using SmartPLS, confirmed that CRM significantly improves competitive advantage and that this relationship is reinforced through innovation capability. Astawa et al. (2023), using PLS-SEM in the context of rural banks in Bali, Indonesia, confirmed that customer relationship marketing has a positive significant effect on competitive advantage. The consistent direction of these findings across different country contexts and enterprise types strengthens confidence in the robustness of the CRM–competitive advantage relationship. The relatively smaller effect of CRM compared to SRM in the present model may reflect the structural reality of micro food and beverage enterprises in Bandung City, where supply-side instability and procurement cost are more immediately tangible competitive pressures than downstream loyalty management.

3.4.4. Effect of Customer Relationship Management on MSME Performance

Customer Relationship Management also does not directly influence MSME Performance ($\beta = 0.146$; $t = 1.753$; $p = 0.083$), although its effect size (0.049) is slightly larger than that of SRM. This finding differs from prior studies that found a direct effect of CRM on MSME performance (Hendrayati et al., 2025; Fahmi et al., 2025; Indrawati, 2026). This discrepancy may be explained by differences in research context: those studies generally positioned CRM as a sole determinant or used other mediators such as value creation or innovation capability, whereas the present study positions Competitive Advantage as the primary mediator.

Notably, Rahmadi et al. (2026), in a PLS-SEM study of 384 culinary MSMEs in the former Kediri Residency, Indonesia a context highly comparable to the present study in sector, enterprise scale, and analytical method found that CRM does not mediate the relationship between entrepreneurial orientation and performance when competitive advantage is already present as a mediating variable. This suggests that in culinary MSME settings where competitive advantage is explicitly modeled, CRM's direct path to performance may become statistically insignificant, consistent with the full-mediation pattern found here. Indrawati et al. (2026), in a study of food and beverage SMEs in East Java using SEM-PLS, found that CRM directly affects SME performance a contrasting result that may be attributed to the absence of competitive advantage as a mediating construct in their model, which leaves CRM to absorb what would otherwise be the indirect effect. In the context of food and beverage MSMEs in Bandung City, managing customer relationships appears to first shape perceptions of differentiation and loyalty (competitive advantage), which only then drives increased sales and market share. CRM initiatives such as loyalty programs should therefore be evaluated by their contribution to brand differentiation and service quality, not by their immediate effect on sales figures.

3.4.5. Effect of Competitive Advantage on MSME Performance

Competitive Advantage has a positive and significant effect on MSME Performance ($\beta = 0.691$; $t = 6.439$; $p = 0.001$), the highest path coefficient among all direct relationships in the model, with a large effect size ($f^2 = 0.659$). This finding strongly supports SCM Theory, which positions competitive advantage as the intermediate outcome bridging supply chain integration effectiveness and business performance improvement (Li et al., 2006).

This dominant role of competitive advantage as a performance driver is corroborated by multiple recent studies in comparable contexts. Nafisah et al. (2025), in a PLS-SEM study of 100 food and beverage SMEs in Bandung City the same geographic and sectoral context as the present study confirmed that competitive advantage significantly and positively mediates the relationship between Green SCM practices and sustainability performance, underscoring competitive advantage as a critical performance pathway in this specific market. Linda et al. (2023), examining 185 packaged food MSMEs in Padang City using SmartPLS, confirmed that competitive advantage has a major and beneficial effect on operational performance and fully mediates the relationship between SCM practices and operational performance. Reklitis et al. (2021), in a study of 300 agri-food sector enterprises in Greece, confirmed that SCM relationships focused on quality information sharing are strongly connected with competitive capabilities, which in turn drive profitability and market share. Yun et al. (2025), in a PLS-SEM study of micro and small food and beverage enterprises in West Bandung

Regency, confirmed that supply chain partnerships and information sharing significantly enhance competitive advantage through supply chain integration. These convergent findings across culinary MSMEs in West Java and similar enterprise contexts in Indonesia and beyond indicate that competitive advantage is not merely one pathway but the dominant and most consistent determinant of MSME performance in saturated, geographically concentrated markets such as Bandung's culinary sector.

3.4.6. Mediating Role of Competitive Advantage between Supplier Relationship Management and MSME Performance

The mediation test shows that Competitive Advantage fully mediates the relationship between Supplier Relationship Management and MSME Performance, with a significant indirect effect of 0.389 ($p = 0.001$), while the direct effect is not significant. This pattern confirms the SCM Theory proposition that the benefits of upstream integration for organizational performance are not direct but are channeled first through the creation of a stronger competitive position (Li et al., 2006).

This full-mediation finding is consistent with Bargouthi et al. (2025), who found that in SMEs in the West Bank, competitive advantage serves as the primary mediating pathway between SCM practices including supplier partnership and firm performance. It also aligns with the pattern identified by Zahara (2024), where competitive advantage functions as the essential connecting pathway through which external relational variables reach MSME performance outcomes. In the context of food and beverage MSMEs in Bandung City, improvements in supplier relationships will not be immediately felt as increased sales or profit; they must first materialize as improved product quality and distinctiveness, cost efficiency, or faster service compared to competitors. Accordingly, SRM strategies will only be effective in improving MSME performance if explicitly directed toward building competitive advantage first. For practitioners, supplier-relationship investments should be paired with an explicit differentiation or efficiency target, rather than pursued as a standalone operational goal.

3.4.7. Mediating Role of Competitive Advantage between Customer Relationship Management and MSME Performance

Competitive Advantage also fully mediates the relationship between Customer Relationship Management and MSME Performance, with a significant indirect effect of 0.242 ($p = 0.001$), while the direct effect of CRM on performance is not significant. This aligns with SCM Theory's perspective that downstream integration delivers performance benefits through the creation of customer value and differentiation first, rather than directly (Lambert & Cooper, 2000).

This full-mediation pattern is consistent with Islami et al. (2025), who found that in manufacturing SMEs in Kosovo, competitive advantage mediates the links between customer relationship and financial performance, with the direct effect of customer relationship on performance insignificant once the mediation path is included. The same structural conclusion that competitive advantage is a necessary intermediate construct in the causal chain from CRM to performance was reached by Astawa et al. (2023) in the Indonesian banking context and by the broader pattern across Indonesian culinary MSME studies reviewed above. CRM strategies for MSMEs in Bandung City should therefore be directed at strengthening competitive positioning through building brand loyalty and service quality differentiation rather than merely increasing customer interaction volume, so that their impact on performance is genuinely realized.

4. CONCLUSION

This study examined the effects of Supplier Relationship Management (SRM) and Customer Relationship Management (CRM) on the performance of food and beverage MSMEs in Bandung City, Indonesia, with Competitive Advantage as a mediating variable. Using SEM-PLS, the findings can be summarized as follows. First, SRM, CRM, competitive advantage, and MSME performance were all found at moderate-to-strong levels among respondents, with supplier and customer relationship practices remaining the least structured components. Second, SRM has a positive and significant effect on Competitive Advantage, with the strongest contribution among the exogenous variables. Third, CRM also positively and significantly affects Competitive Advantage, though with a smaller contribution than SRM. Fourth, neither SRM nor CRM directly affects MSME Performance; their effects are fully mediated by Competitive Advantage. Fifth, Competitive Advantage has the strongest direct effect on MSME Performance among all structural paths tested. Sixth, when tested simultaneously, SRM and CRM jointly explain a substantial proportion of variance in Competitive Advantage (59.1%) and, together with Competitive Advantage, in MSME Performance (70.4%), confirming that upstream and downstream relational capabilities are jointly relevant even though their individual direct paths to performance are not significant. Seventh, Competitive Advantage was confirmed as a full mediator in both the SRM–Performance and CRM–Performance relationships. These results support both Supply Chain Management Theory and the Resource-Based View, and extend prior literature by testing SRM and CRM simultaneously within a single mediated framework in the micro-scale food and beverage MSME context.

Several limitations should be acknowledged. First, the study employed a cross-sectional design, which limits the ability to infer causal relationships over time. The relationships observed reflect associations at a single point in data collection rather than confirmed causal sequences; temporal dynamics in SRM, CRM, competitive advantage, and MSME performance remain unexamined.

Second, all constructs were measured through self-reported perceptions of MSME owners and managers, which may introduce common method bias and social desirability effects. Future studies would benefit from incorporating objective performance indicators such as revenue growth records, audit reports, or administrative data from the Dinas Perindustrian dan Perdagangan alongside self-reported measures.

Third, the research focused on food and beverage MSMEs in Bandung City, which limits the generalizability of the findings to other business scales, sectors, and geographic regions. Micro-scale enterprises, which dominate the population sampled in this study, may differ systematically from small and medium enterprises in terms of financial resources, bargaining power with suppliers, capacity to formalize CRM systems, digital infrastructure, and managerial sophistication (Nakandala et al., 2024; Purnamasari et al., 2025). These structural differences suggest that the magnitude and pathway of SRM and CRM effects on competitive advantage may vary meaningfully across enterprise size categories. Findings from micro enterprises in Bandung's culinary sector should therefore not be generalized automatically to small or medium enterprises, non-culinary food processing firms, or to MSMEs in other provinces with different market structures, supplier ecosystems, and competitive dynamics.

Fourth, the model tested only four constructs; other plausible determinants of MSME performance including entrepreneurial orientation, digital transformation capability, innovation capability, and human capital were not included and may account for the unexplained variance (40.9% in Competitive Advantage and 29.6% in MSME Performance). These factors, along with external environmental conditions, represent important directions for future investigation as discussed below.

From a practical perspective, MSME owners should treat supplier and customer relationship management not as end goals but as inputs to be deliberately converted into differentiation, cost efficiency, service quality, innovation, and reputation the specific dimensions through which competitive advantage translates into performance. Policymakers and business development agencies are encouraged to design support programs that build supply chain capability and competitive capability simultaneously, rather than treating relational and competitive development as separate initiatives.

From a policy perspective, the findings of this study carry concrete implications for government agencies, regional development authorities, and MSME support institutions in Bandung City and the broader West Java region. The central empirical result that Competitive Advantage fully mediates both the SRM–Performance and CRM–Performance relationships mean that policy programs focused solely on increasing the number of supplier partnerships or customer engagement activities, without simultaneously building competitive capabilities, are unlikely to produce sustained improvements in MSME performance. The practical implication is that relational capability and competitive capability must be developed together, not in sequence.

For Dinas Koperasi dan UKM Kota Bandung and related regional institutions, the study's findings suggest that training and assistance programs for food and beverage MSMEs should be redesigned to integrate supply chain management competency with competitive strategy. Concretely, this means that supplier coordination workshops should be linked explicitly to differentiation outcomes for example, connecting raw material sourcing reliability to product quality standards and branding rather than treating procurement efficiency as an isolated operational target. Similarly, customer relationship programs such as digital loyalty systems, customer data management training, and service quality coaching should be positioned and evaluated based on their contribution to brand differentiation and customer retention, not merely on transaction volume or social media reach. This reframing is consistent with the OECD (2023) recommendation that government support for SMEs in supply-chain networks should move toward capability integration programs that link upstream and downstream relational competencies to measurable competitive outcomes.

For national-level policy, the Ministry of Cooperatives, Micro, Small, and Medium Enterprises (Kementerian Koperasi dan UKM) can use these findings to inform the design of MSME competitiveness programs under national development priorities. Given that competitive advantage in this study explained 70.4% of the variance in MSME performance the highest explanatory contribution among all constructs tested policy instruments that simultaneously strengthen supply chain collaboration capability (SRM dimension) and customer relationship capability (CRM dimension) while explicitly targeting competitive differentiation are likely to yield the highest returns on public investment. Policymakers should also consider the role of digital platforms in enabling food and beverage MSMEs to formalize supplier and customer relationship management at low cost including digital procurement tools, customer feedback systems, and marketplace integration which can serve as infrastructure for building competitive advantage at scale. Regional governments should distinguish clearly between programs that build relational capability and programs that build competitive capability, and ensure that both are present in any MSME development package, since this study demonstrates that relational investment without competitive translation does not produce performance gains.

Future research is encouraged to address the limitations above along several dimensions. Longitudinal research design. The present study adopts a cross-sectional design, which provides a snapshot of the relationships among SRM, CRM, Competitive Advantage, and MSME Performance at a single point in time. Longitudinal research

designs employing panel data collected across multiple time periods would offer substantially richer insights into how changes in supplier and customer relationship practices accumulate into competitive advantage over time, and how that advantage subsequently translates into sustained performance improvements. This is particularly important in the food and beverage MSME context, where supplier networks, customer preferences, raw material prices, and competitive intensity can shift substantially within a single business year (Xiao et al., 2021; Ellinger et al., 2020). A time-lagged model examining whether improvements in SRM and CRM at time t are associated with competitive advantage at $t+1$ and performance at $t+2$ would provide more rigorous causal evidence for the mediation chain confirmed in the present study. Researchers may consider leveraging administrative databases such as records from Dinas Koperasi UKM or SIDT-UMKM (Kementerian UMKM RI) to construct objective longitudinal performance indicators alongside survey-based relational data.

External and contextual factors. The present model explains 59.1% of the variance in Competitive Advantage and 70.4% of MSME Performance, indicating that a meaningful proportion of variance remains unexplained by SRM, CRM, and Competitive Advantage alone. Future research should examine the role of external and contextual factors that were beyond the scope of this study. Three categories of external factors appear particularly salient for food and beverage MSMEs in Bandung City.

Market turbulence and competitive intensity. Food and beverage MSMEs in Bandung operate in a high-density, rapidly shifting market environment where consumer preferences, competitor entry rates, and price competition fluctuate significantly. Lusiana et al. (2026), in a study of Indonesian SMEs in Cibaduyut, found that market turbulence significantly moderates the relationship between customer orientation and business performance, with competitive intensity shaping the effectiveness of strategic capabilities. Future studies could examine market turbulence and competitive intensity as moderating variables in the SRM/CRM–Competitive Advantage–Performance chain, to determine whether the relational capabilities identified in this study are more or less effective under varying environmental conditions (Crick et al., 2024).

Government support and digital ecosystem access. Government support including access to business development programs, digital platform subsidies, procurement training, and supply chain integration initiatives has been identified as a significant enabler of SME competitive capability and supply chain resilience (Nakandala et al., 2024; Purnamasari et al., 2025). Future research could test government support as either an antecedent to SRM and CRM capability development, or as a moderator of the pathway from relational capabilities to competitive advantage, providing direct evidence for policy program design.

Supply chain disruption and input-price volatility. The food and beverage sector is particularly vulnerable to raw material shortages, supply disruption, and input-price inflation all of which directly affect the competitive advantage dimensions of cost leadership and product quality. Future studies could incorporate supply chain disruption exposure or input-price volatility as contextual variables, to understand how SRM capability moderates the firm's ability to maintain competitive advantage under external shocks (Dubey et al., 2023).

Broader population and comparative design. Future research should extend the study to small and medium enterprises, non-culinary food processing sectors, and other regions of Indonesia to test whether the full-mediation pattern of Competitive Advantage holds across different enterprise size categories and market contexts. Comparative designs that explicitly contrast micro, small, and medium enterprises would allow researchers to test whether enterprise scale moderates the strength of the SRM–Competitive Advantage and CRM–Competitive Advantage relationships a question that the present study, focused on a single urban market, cannot address. Cross-provincial or cross-country comparative studies within Southeast Asian emerging economies would further assess the generalizability of the findings.

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