

Business Strategies, Competition, and Regulation in Enhancing MSME Sustainability in East Java

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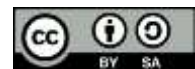
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ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) are central to Indonesia's economy, contributing more than 60% of GDP and employing the majority of the workforce. In East Java, MSMEs account for nearly 59% of regional GDP, underscoring their critical role in inclusive growth. Despite this importance, MSMEs face persistent challenges, including limited access to credit, low digital adoption, weak innovation, and vulnerability to competition. While prior studies have explored these factors separately, few have developed an integrative framework linking business strategies, competition, and regulation to sustainability. This study examines the effects of seven strategic dimensions, credit facilities, digital marketing, innovation, pricing, distribution, circular economy, and inclusive partnerships, on MSME sustainability. Business competition is tested as a mediating variable and regulation by the Indonesian Competition Commission (KPPU) as a moderating variable. Data were collected from 396 MSMEs across handicrafts, food and beverage, and service sectors, and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). Results show that digital marketing, innovation, pricing, distribution, and inclusive partnerships significantly enhance sustainability, while credit facilities and circular economy practices have limited direct impact. Competition mediates the effects of strategies on sustainability, and regulation strengthens both strategic and competitive impacts. The study contributes theoretically by integrating Resource-Based View, Competitive Advantage, Institutional Theory, and Circular Economy perspectives into a holistic model, and provides practical insights for policymakers and MSME actors seeking to enhance resilience and long-term sustainability.

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1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) have long been recognized as the backbone of national and regional economies, particularly in developing countries. Globally, MSMEs

represent more than 90% of enterprises and provide employment for over 60% of the labor force [1]. In Indonesia, the contribution of MSMEs is even more significant, accounting for 99% of all business entities, 61.07% of GDP, and absorbing over 97% of the national

workforce (Kementerian Koperasi & UKM, 2023). East Java, as one of Indonesia's most economically dynamic provinces, reflects this national trend. In 2023, MSMEs in East Java contributed nearly 59% of the province's regional GDP, underscoring their strategic role in economic resilience, employment creation, and poverty reduction (Dinas Koperasi dan UMKM Jawa Timur, 2023).

Despite their substantial economic role, the sustainability of MSMEs remains a critical concern. Sustainability in this context refers not only to the financial viability of enterprises but also to their capacity for long-term growth, adaptability to changing markets, and alignment with environmental and social imperatives [2], [3]. Several challenges threaten the sustainability of MSMEs in East Java and Indonesia more broadly. First, access to credit remains constrained. According to Bank Indonesia, the share of bank lending allocated to MSMEs was only 19.36% of total credit as of December 2023, far below the government's target of 30%. This financing gap hampers innovation, expansion, and competitiveness [4]. Second, digital adoption among MSMEs, while growing, is still uneven. By 2023, only 24 million MSMEs nationally had connected to digital ecosystems, representing less than half of the government's 2024 target (Kemenkop UKM, 2023). The digital divide manifests in limited infrastructure, low digital literacy, and reluctance to shift from traditional practices, leaving many MSMEs vulnerable to being outcompeted in increasingly digitalized markets (OECD, 2022).

In addition to financing and digitalization, the competitive environment poses another major challenge. The rise of e-commerce platforms and cross-border trade exposes MSMEs to intense competition not only from domestic rivals but also from foreign products entering Indonesian markets. Competition, while often seen as a threat, can also function as a catalyst for innovation and efficiency [5]. However, in the case of MSMEs, the ability to transform competitive pressure into sustainable growth depends on their strategic capacity, ranging from innovation and pricing strategies to

distribution channels and inclusive partnerships [6], [7]. The mediating role of competition in shaping the effectiveness of business strategies is thus an area requiring deeper empirical investigation.

Furthermore, the regulatory environment plays a critical role in shaping MSME sustainability. The Indonesian Competition Commission (KPPU) is tasked with enforcing fair competition and preventing monopolistic practices. A well-functioning regulatory framework ensures level playing fields, reduces barriers to entry, and protects smaller enterprises from being marginalized [8]. Yet, despite the importance of regulation, empirical studies rarely examine its moderating role in strengthening or weakening the impact of MSME strategies on sustainability. In East Java, regulatory support remains inconsistent, with fragmented policies across agencies and limited enforcement capacity. This raises the question of how effectively regulation moderates the relationship between strategy, competition, and sustainability in practice.

The global shift toward sustainable development adds further urgency to these issues. The Sustainable Development Goals (SDGs), particularly Goal 8 (decent work and economic growth) and Goal 9 (industry, innovation, and infrastructure), highlight the role of MSMEs in advancing inclusive and sustainable economies (United Nations, 2021). However, achieving these goals requires MSMEs to adopt practices such as circular economy models and inclusive partnerships. Evidence from advanced economies shows that such practices enhance resilience and open new market opportunities [3]. Yet, MSMEs in East Java have been slow to embrace them due to limited knowledge, lack of incentives, and perceived high costs. This gap between global trends and local realities underscores the need for empirical research that situates MSMEs within broader sustainability paradigms.

Literature on MSMEs has grown substantially in recent years, but important gaps remain. Many studies examine isolated factors, such as access to finance [4], digital marketing [9], or innovation (Schumpeter,

1934), without integrating these elements into a comprehensive framework that accounts for competitive dynamics and regulatory contexts. Moreover, while theoretical perspectives such as the Resource-Based View [6], Competitive Advantage [5], and Institutional Theory provide useful lenses, empirical work that combines these frameworks in developing country settings is limited. The mediating role of competition and the moderating role of regulation remain particularly underexplored in the Indonesian context [7]. Addressing these gaps is not only of academic interest but also of practical importance for designing effective policies and strategies to enhance MSME sustainability.

Against this background, this study seeks to investigate the extent to which business strategies, including credit facilities, digital marketing, innovation, pricing, distribution, circular economy, and inclusive partnerships, influence the sustainability of MSMEs in East Java. It further examines how business competition mediates these relationships and how KPPU regulation moderates them. By integrating multiple variables into a single analytical framework, this research contributes to filling theoretical and empirical gaps in the literature. It also provides practical insights for MSME actors, policymakers, and regulators seeking to strengthen MSME resilience in an increasingly competitive and sustainability-oriented global economy.

2. LITERATURE REVIEW

2.1 *Business Strategies and MSME Sustainability*

The Business strategies refer to the coordinated set of actions and decisions designed to achieve competitive advantage and long-term organizational goals [5]. For MSMEs, strategic orientation often determines whether enterprises can survive in dynamic markets and contribute to sustainable development [6]. Scholars have

identified several dimensions of strategies that are particularly relevant to MSME sustainability: credit access, digital marketing, innovation, pricing, distribution, circular economy, and inclusive partnerships.

Credit facilities are crucial for MSMEs because financial capital enables firms to expand operations, invest in innovation, and access new markets. However, financing remains one of the most significant barriers to MSME growth globally [4]. In Indonesia, despite government-backed credit programs such as Kredit Usaha Rakyat (KUR), many MSMEs still experience challenges in accessing affordable financing due to lack of collateral and financial literacy (Kementerian Koperasi & UKM, 2023). This financing gap constrains their ability to invest in long-term sustainability strategies.

Digital marketing has emerged as another critical strategy for MSMEs in the era of digital transformation. By leveraging digital platforms, enterprises can reduce marketing costs, expand customer reach, and build stronger customer relationships [9]. Recent evidence suggests that digital adoption not only enhances competitiveness but also contributes to sustainability by enabling MSMEs to adapt to shifts in consumer behavior and global supply chains (OECD, 2022).

Innovation strategies, encompassing product, process, and business model innovation, are essential for sustaining competitive advantage. Schumpeter (1934) emphasized that innovation is the driver of

economic development, while more recent studies link innovation to enhanced adaptability and resilience in turbulent environments [10]. For MSMEs in East Java, innovation is often constrained by limited resources, but when successfully adopted, it significantly improves sustainability outcomes [7].

Pricing and distribution strategies are classical components of Porter's (1985) framework for competitive advantage. Effective pricing enables firms to balance affordability with profitability, while efficient distribution ensures timely delivery and customer satisfaction. MSMEs that fail to optimize these strategies risk being undercut by competitors with greater economies of scale. Conversely, those that adopt adaptive pricing and diversified distribution networks enhance their sustainability by building market resilience.

In recent years, the circular economy has been increasingly discussed as a sustainability-oriented business strategy. The circular economy emphasizes resource efficiency, recycling, and designing products and processes that minimize waste [3]. Although adoption remains limited among MSMEs in developing countries due to technological and financial constraints, its long-term benefits include cost savings, reduced environmental footprint, and alignment with global sustainability trends [11].

Inclusive partnerships also play a significant role in MSME sustainability. Partnerships between MSMEs and larger

firms, government agencies, and communities can facilitate resource sharing, capacity building, and market access [12]. Through collaborative governance, MSMEs can overcome structural limitations and participate in broader value chains [8]. This is particularly relevant in the Indonesian context, where inclusive partnerships are promoted as a means to achieve equitable development.

2.2 *High-Frequency Trading (HFT) and its Dualistic Impact on Efficiency*

Competition in business refers to the rivalry among firms in attracting customers, gaining market share, and achieving superior performance. According to Porter's (1980) Five Forces model, competition shapes industry profitability and determines the sustainability of firms. For MSMEs, competition is both a challenge and an opportunity. On one hand, intense competition can erode margins and increase vulnerability; on the other hand, it stimulates innovation, efficiency, and strategic differentiation [5].

The literature suggests that competition may act as a mediating variable that explains how business strategies translate into sustainability outcomes. For example, digital marketing and innovation may not directly guarantee sustainability but become effective when MSMEs use them to outperform competitors (OECD, 2022). Similarly, credit facilities can improve performance only if firms utilize financing to gain a competitive edge rather than to sustain existing inefficiencies [4].

This mediating role of competition has been underexplored in the MSME literature, especially in developing contexts where competitive environments are rapidly evolving.

2.3 Regulation as a Moderating Variable

Regulation plays a vital role in ensuring fair competition, protecting consumers, and supporting sustainable markets. In Indonesia, the Indonesian Competition Commission (KPPU) enforces Law No. 5/1999 on Prohibition of Monopolistic Practices and Unfair Business Competition. Regulatory institutions are designed to level the playing field, particularly for MSMEs that often face disadvantages against larger firms [8].

From a theoretical perspective, Institutional Theory emphasizes the influence of rules, norms, and governance structures on organizational behavior [13]. Regulatory frameworks can strengthen or weaken the relationship between business strategies and sustainability by shaping incentives, reducing information asymmetries, and preventing market distortions. For example, effective enforcement of competition law can ensure that MSMEs benefit from innovation and partnerships, while weak regulation may allow monopolistic practices that marginalize smaller firms. Despite its importance, the moderating role of regulation remains insufficiently examined in empirical MSME studies, creating a significant research gap [7].

2.4 Theoretical Foundations

2.4.1. Resource-Based View (RBV)

The RBV argues that sustainable competitive advantage derives from resources that are valuable, rare, inimitable, and non-substitutable [6]. In the MSME context, strategic resources include financial capital, digital capabilities, and innovation capacity. RBV provides a foundation for examining how internal strategies affect sustainability outcomes.

2.4.2. Financial Intermediation Theory

Financial intermediation theory posits that financial institutions reduce transaction costs and information asymmetries, thereby improving access to capital for firms [14]. For MSMEs, access to credit through intermediaries such as banks and microfinance institutions is critical to sustainability, highlighting the importance of credit facilities in the research framework.

2.4.3. Competitive Advantage Theory

Porter's (1985) theory emphasizes cost leadership, differentiation, and focus strategies as pathways to sustainable performance. Pricing and distribution strategies directly reflect these mechanisms, while innovation and digital marketing support differentiation in highly competitive markets.

2.4.4. Service-Dominant Logic (SDL)

SDL argues that value is co-created through service exchange and collaboration rather than produced unilaterally by firms [12]. Inclusive partnerships align with

SDL by enabling MSMEs to collaborate with stakeholders to enhance resilience and competitiveness.

2.4.5. Circular Economy Theory

The circular economy promotes sustainable business models by emphasizing waste reduction, reuse, and resource efficiency [3]. For MSMEs, this perspective provides a framework for integrating environmental sustainability into business strategies, though empirical studies remain limited in developing contexts.

2.4.6. Institutional Theory

Institutional Theory highlights the role of formal and informal rules in shaping organizational outcomes [13]. KPPU's regulatory role reflects institutional pressures that can moderate the impact of business strategies on sustainability.

2.4.7. Collaborative Governance

Collaborative Governance Theory emphasizes the importance of cooperation between government, private sector, and civil society in addressing complex socio-economic challenges [8]. For MSMEs, inclusive partnerships are a manifestation of collaborative governance that supports sustainability.

2.5. Research Gap and Hypotheses Development

The literature reveals four major gaps. First, research often isolates specific variables, such as credit or innovation, without integrating them into a comprehensive framework. Second, the mediating role of competition has been underexplored, despite its relevance in dynamic markets. Third, the moderating role of regulation has not been

sufficiently examined, particularly in the context of KPPU's enforcement in Indonesia. Fourth, circular economy and inclusive partnerships remain under-researched in MSMEs, despite their global relevance.

Based on these gaps, the study develops the following hypotheses:

H1: Credit facilities positively influence MSME sustainability.

H2: Digital marketing positively influences MSME sustainability.

H3: Innovation strategies positively influence MSME sustainability.

H4: Pricing strategies positively influence MSME sustainability.

H5: Distribution strategies positively influence MSME sustainability.

H6: Circular economy practices positively influence MSME sustainability.

H7: Inclusive partnerships positively influence MSME sustainability.

H8: Business competition mediates the relationship between business strategies and MSME sustainability.

H9: Regulation (KPPU) moderates the relationship between business strategies and MSME sustainability.

H10: The integrative model of strategies, competition, and regulation significantly enhances MSME sustainability in East Java.

3. METHODS

3.1 Research Design

This study employs a quantitative explanatory research design to examine the relationships between business strategies, competition, regulation, and MSME sustainability in East Java. Quantitative methods are appropriate for testing hypotheses and establishing causal inferences through statistical analysis [15]. By integrating multiple independent variables, a mediating variable, and a moderating variable within a single framework, the research aims to generate a holistic understanding of MSME sustainability. Structural Equation Modeling, Partial Least Squares (SEM-PLS) was chosen as the analytical tool due to its suitability for complex models and its ability to handle latent constructs with multiple indicators [16].

3.2 Population and Sample

The population of this study consists of all MSMEs registered in East Java Province, totaling approximately 1.15 million enterprises across 29 regencies and 9 cities (Dinas Koperasi & UMKM Jawa Timur, 2023). Given the vast population, a sample was drawn using stratified random sampling to ensure proportional representation across sectors. The sectors covered include handicraft, food and beverage, and services, sectors that dominate the MSME landscape in East Java.

Using the Slovin formula with a margin of error of 5%, the minimum sample size was calculated at 400 respondents. A total of 396 valid responses were obtained after eliminating incomplete questionnaires, representing a 99% response rate. The sample reflects the demographic and economic diversity of MSMEs in East Java, with approximately 48% engaged in food and

beverage, 32% in handicrafts, and 20% in services.

3.3 Data Collection

Data were collected between March and August 2024 through structured questionnaires distributed both online and offline. The online survey targeted digitally active MSMEs, while offline distribution was carried out through local cooperatives and MSME associations. To enhance reliability, enumerators assisted respondents with limited digital literacy.

The questionnaire was divided into three sections: (1) demographic and firm characteristics, (2) measurement of business strategies (credit facilities, digital marketing, innovation, pricing, distribution, circular economy, inclusive partnerships), and (3) measurement of competition, regulation, and sustainability. All items were measured using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree).

3.4 Measurement of Variables

The study examines four groups of variables:

1. Independent Variables: Credit facilities, digital marketing, innovation, pricing, distribution, circular economy, inclusive partnerships.
2. Mediating Variable: Business competition.
3. Moderating Variable: Regulation (KPPU).
4. Dependent Variable: MSME sustainability.

To operationalize these constructs, indicators were adapted from previous studies and contextualized for MSMEs in East Java.

Table 1. Operationalization of Variables

Variable	Dimension/Indicator	Source
Credit Facilities	Ease of loan access, interest rate suitability, repayment flexibility	Beck & Demirguc-Kunt (2006)
Digital Marketing	Use of social media, e-commerce adoption, digital promotion effectiveness	Tiago & Veríssimo (2014)

Innovation	Product innovation, process innovation, marketing innovation	Schumpeter (1934); Crossan & Apaydin (2010)
Pricing	Competitive pricing, discount strategy, perceived fairness	Porter (1985)
Distribution	Distribution channel diversity, delivery speed, supply chain reliability	Porter (1985)
Circular Economy	Recycling practices, resource efficiency, waste reduction	Geissdoerfer et al. (2017)
Inclusive Partnerships	Collaboration with large firms, community involvement, government support	Vargo & Lusch (2004); Ansell & Gash (2008)
Business Competition (Mediator)	Rivalry intensity, market entry threats, competitive pressure	Porter (1980)
Regulation (Moderator)	Enforcement of fair competition, prevention of monopolies, regulatory support	Scott (2008); KPPU Reports
MSME Sustainability (DV)	Economic viability, adaptability, social contribution, environmental responsibility	Elkington (1997); OECD (2022)

3.5 Data Analysis

The data analysis followed a two-step approach:

- 1. Measurement Model Evaluation (Outer Model):** This step assessed indicator reliability, internal consistency reliability (Cronbach's alpha, composite reliability), convergent validity (Average Variance Extracted/AVE), and discriminant validity (Fornell-Larcker criterion, HTMT ratios).
- 2. Structural Model Evaluation (Inner Model):** This step examined path coefficients, R^2 values, f^2 effect sizes, and predictive relevance (Q^2). Mediation effects of competition were tested using bootstrapping with 5,000 resamples. Moderation effects of regulation (KPPU) were tested using interaction terms within the SEM-PLS framework [16].

3.6 Validity and Reliability

To ensure validity, measurement items were adapted from established literature and pre-tested with 30 MSME owners in East Java. Feedback was used to refine wording for clarity and cultural relevance. Convergent validity was established when item loadings exceeded 0.70 and AVE values exceeded 0.50 [16].

Discriminant validity was confirmed through cross-loadings and HTMT ratios below 0.85.

Reliability was tested using Cronbach's alpha and composite reliability, both exceeding the threshold of 0.70 for all constructs. These results indicate that the instrument is both reliable and valid for measuring the intended constructs.

3.7 Ethical Considerations

The study adhered to ethical research standards by ensuring voluntary participation, informed consent, and confidentiality of responses. The research protocol was approved by the ethics committee of Universitas Dr. Soetomo, Surabaya.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics of Respondents

The survey collected 396 valid responses from MSME owners and managers across East Java. Of these respondents, 48% operated in food and beverage, 32% in handicrafts, and 20% in services. In terms of firm age, 35% had operated for less than five years, 42% between five to ten years, and 23% for more than ten years, reflecting a diverse maturity distribution. Regarding firm size, measured by employee count, 57% employed fewer than 10 workers (micro enterprises), 29% employed between 10–30 workers (small

enterprises), and 14% employed more than 30 workers (medium enterprises).

Demographic characteristics of respondents indicated that 61% were female entrepreneurs and 39% male, underscoring the significant role of women in East Java's MSME ecosystem. Education levels varied, with 47% holding high school diplomas, 38% bachelor's degrees, and 15% postgraduate qualifications. These results suggest that MSMEs in East Java are diverse not only in

sector and scale but also in entrepreneurial backgrounds, providing a robust foundation for analysis.

4.2 Measurement Model (Outer Model)

The measurement model was evaluated using indicator loadings, Average Variance Extracted (AVE), Cronbach's alpha, and Composite Reliability (CR).

Table 2. Measurement Model Results

Construct	Indicator Loadings	Cronbach's Alpha	CR	AVE
Credit Facilities	0.73–0.84	0.812	0.875	0.589
Digital Marketing	0.75–0.88	0.846	0.897	0.637
Innovation	0.78–0.86	0.831	0.889	0.612
Pricing	0.71–0.83	0.802	0.872	0.574
Distribution	0.74–0.85	0.817	0.885	0.603
Circular Economy	0.69–0.82	0.796	0.861	0.552
Inclusive Partnerships	0.77–0.88	0.841	0.902	0.654
Competition	0.73–0.86	0.828	0.887	0.615
Regulation (KPPU)	0.74–0.85	0.832	0.891	0.608
MSME Sustainability	0.76–0.89	0.856	0.910	0.666

All constructs achieved indicator loadings above 0.70, AVE values above 0.50, and CR values above 0.80, satisfying convergent validity and reliability thresholds (Hair et al., 2019). Discriminant validity was confirmed using the Fornell–Larcker criterion and HTMT ratios (all below 0.85).

4.3 Structural Model (Inner Model)

The structural model was tested to assess the relationships among business

strategies, competition, regulation, and MSME sustainability. The model achieved an R^2 value of 0.614 for MSME sustainability, indicating that 61.4% of the variance in sustainability is explained by the independent variables, competition, and regulation. The R^2 value for competition was 0.482, showing that nearly half of its variance is explained by business strategies.

Table 3. Structural Model Results

Path	β	t-statistic	p-value	Result
Credit Facilities → Sustainability	0.082	1.68	0.094	Not Supported
Digital Marketing → Sustainability	0.216	4.32	0.000	Supported
Innovation → Sustainability	0.193	3.97	0.000	Supported
Pricing → Sustainability	0.124	2.45	0.014	Supported
Distribution → Sustainability	0.131	2.72	0.007	Supported
Circular Economy → Sustainability	0.076	1.58	0.114	Not Supported
Inclusive Partnerships → Sustainability	0.188	3.81	0.000	Supported

These results indicate that digital marketing, innovation, pricing, distribution,

and inclusive partnerships significantly enhance MSME sustainability. Credit facilities

and circular economy practices, however, did not show significant direct effects, suggesting that access to financing and sustainability-oriented practices may require stronger enabling environments to translate into sustainability outcomes.

4.4 Mediation Analysis (Competition)

Competition was tested as a mediator between business strategies and sustainability.

Table 4. Mediation Results

Path	Indirect Effect (β)	t-statistic	p-value	Mediation Type
Digital Marketing → Competition → Sustainability	0.087	3.21	0.001	Partial
Innovation → Competition → Sustainability	0.079	2.94	0.003	Partial
Pricing → Competition → Sustainability	0.054	2.37	0.018	Partial
Distribution → Competition → Sustainability	0.061	2.51	0.012	Partial
Inclusive Partnerships → Competition → Sustainability	0.066	2.43	0.015	Partial

The results demonstrate that competition significantly mediates the relationship between most strategies and sustainability. This highlights the fact that strategies like digital marketing and innovation become more impactful in driving sustainability when they enhance firms'

ability to compete effectively in the marketplace.

4.5 Moderation Analysis (Regulation – KPPU)

Regulation was tested as a moderator using interaction terms within SEM-PLS.

Table 5. Moderation Results

Interaction Path	β	t-statistic	p-value	Result
Strategy × Regulation → Sustainability	0.112	2.86	0.004	Supported
Competition × Regulation → Sustainability	0.095	2.43	0.016	Supported

The results indicate that regulation significantly moderates the relationships between strategies and sustainability, and between competition and sustainability. Specifically, stronger regulatory enforcement enhances the positive effects of strategies and

competition, confirming the critical role of KPPU in fostering fair market practices.

4.6 Summary of Hypothesis Testing

Table 6. Hypothesis Testing Results

Hypothesis	Statement	Result
H1	Credit facilities → Sustainability	Not Supported
H2	Digital marketing → Sustainability	Supported
H3	Innovation → Sustainability	Supported
H4	Pricing → Sustainability	Supported
H5	Distribution → Sustainability	Supported
H6	Circular economy → Sustainability	Not Supported
H7	Inclusive partnerships → Sustainability	Supported
H8	Competition mediates strategies → Sustainability	Supported
H9	Regulation moderates strategies → Sustainability	Supported
H10	Integrated model enhances MSME sustainability	Supported

4.7 Key Findings

The empirical results confirm that internal strategies such as digital marketing, innovation, and inclusive partnerships are key drivers of MSME sustainability in East Java. Competition plays a significant mediating role, amplifying the effectiveness of these strategies. Regulation by KPPU moderates outcomes by ensuring fair practices and preventing market distortions. However, financing (credit facilities) and circular economy adoption remain limited in their direct impact, indicating the need for complementary policies and incentives.

Discussion

Business Strategies and MSME Sustainability

The findings demonstrate that business strategies such as digital marketing, innovation, pricing, distribution, and inclusive partnerships significantly influence MSME sustainability in East Java. This aligns with the Resource-Based View (RBV), which posits that firms with valuable, rare, inimitable, and non-substitutable resources achieve sustainable competitive advantage [6]. In this context, digital capabilities and innovation act as strategic resources that enhance resilience against external shocks. Consistent with Tiago and Veríssimo (2014), digital marketing enables MSMEs to expand market reach and maintain competitiveness at relatively low cost. Similarly, innovation supports adaptability in highly dynamic markets, confirming Schumpeter's (1934) theory that innovation is the engine of economic progress.

The significance of pricing and distribution further validates Porter's (1985) competitive advantage framework, which highlights cost leadership and market efficiency as critical to sustainability. MSMEs that implemented adaptive pricing strategies and diversified distribution channels were better able to compete and maintain profitability, echoing findings from OECD (2022) that distribution flexibility increases resilience. Inclusive partnerships also emerged as a strong determinant of sustainability, reflecting Service-Dominant

Logic (SDL), which emphasizes co-creation of value through collaboration [12]. Such partnerships allow MSMEs to overcome resource constraints by leveraging networks with larger firms, government agencies, and local communities.

Interestingly, the study found that credit facilities and circular economy practices did not significantly influence sustainability. This diverges from previous literature that emphasizes access to finance as a key constraint for MSMEs [4]. One explanation may be that many MSMEs in East Java use credit primarily for working capital rather than strategic investment, limiting its long-term impact. Similarly, circular economy adoption remains nascent, constrained by limited awareness, cost concerns, and lack of government incentives [11]. These results suggest that while credit and circular economy are theoretically important, their effectiveness depends on contextual enablers such as financial literacy, technological readiness, and supportive policy environments.

Competition as a Mediator

The study confirms that competition mediates the relationship between business strategies and MSME sustainability, particularly for digital marketing, innovation, pricing, and distribution. This finding supports Porter's (1980) Five Forces model, which emphasizes competition as a key driver of industry performance. In practice, strategies such as innovation and digital adoption yield sustainability benefits only when they enable firms to outperform rivals in attracting customers and retaining market share.

This mediating role reflects the dynamics of emerging markets, where competition is both a threat and an opportunity. For example, digital platforms expose MSMEs to international competition, but also provide access to wider markets (OECD, 2022). Firms that adopt innovation to differentiate their offerings are more likely to sustain growth, while those that fail to adapt become vulnerable. These findings expand the literature by positioning competition not

merely as an external environmental factor, but as an active mechanism that translates strategies into outcomes.

From a theoretical standpoint, the results extend RBV by demonstrating that resources (e.g., innovation capacity, digital skills) achieve sustainability not in isolation but through competitive processes. This perspective aligns with dynamic capabilities theory, which emphasizes firms' ability to integrate, build, and reconfigure resources in response to competition [17]. For MSMEs in East Java, competition pushes entrepreneurs to leverage limited resources more effectively, thereby amplifying the impact of strategies.

Regulation as a Moderator

The results reveal that regulation by KPPU significantly moderates the relationship between strategies, competition, and sustainability. This underscores the importance of Institutional Theory, which highlights the role of rules, norms, and governance structures in shaping organizational outcomes [13]. In contexts where regulatory institutions are effective, MSMEs benefit from reduced barriers to entry, protection against unfair practices, and greater opportunities for inclusive growth.

The findings support prior research that emphasizes the role of regulatory environments in leveling the playing field for smaller enterprises [8]. Specifically, regulation enhances the positive effects of digital marketing, innovation, and partnerships by ensuring that MSMEs can compete fairly without being overshadowed by monopolistic practices. This suggests that KPPU plays a critical role not only in market oversight but also in fostering MSME sustainability.

At the same time, regulatory inconsistencies in East Java remain a challenge. Weak enforcement and fragmented policy coordination can undermine the moderating effect of regulation. For instance, while national competition laws exist, many MSMEs report limited knowledge of regulatory protections and difficulty accessing legal remedies. This indicates a need for greater regulatory outreach and

capacity building, ensuring that MSMEs can fully benefit from the institutional environment.

Implications for Theory

This study contributes to the literature in several ways. First, it integrates RBV, Competitive Advantage Theory, SDL, Circular Economy Theory, and Institutional Theory into a comprehensive model that explains MSME sustainability. Previous research often examined these frameworks in isolation; this study demonstrates how they interact in practice.

Second, the study advances theory by empirically validating the mediating role of competition and the moderating role of regulation. By doing so, it reframes competition not just as a contextual factor but as a process that channels strategies into sustainable outcomes. Similarly, it positions regulation as an enabling condition that amplifies the effectiveness of strategies and competition.

Third, the findings refine our understanding of circular economy and credit facilities in developing contexts. While theory suggests these should drive sustainability, the lack of significant impact in East Java suggests that contextual barriers must be incorporated into theoretical models. This calls for a **contingency perspective**, recognizing that the effectiveness of strategies depends on institutional, cultural, and technological contexts.

Implications for Practice

For practitioners, the study highlights the importance of digital transformation, innovation, adaptive pricing, and inclusive partnerships as critical strategies for sustainability. MSMEs should prioritize building digital capabilities, adopting customer-centric innovations, and collaborating with larger firms and government programs. Practical steps include investing in e-commerce training, leveraging social media for branding, and forming cooperatives to strengthen bargaining power. For policymakers, the results underscore the need to strengthen regulatory frameworks

and enhance the role of KPPU in supporting fair competition. This could involve more proactive monitoring of market abuses, greater accessibility of legal remedies for MSMEs, and targeted outreach to raise awareness of competition law. Additionally, the lack of significant impact of credit facilities suggests that financial programs should be redesigned to encourage productive investment rather than consumption. Enhancing financial literacy among MSME owners is also essential.

For sustainability advocates, the weak role of circular economy adoption points to the need for policy incentives and capacity building. Governments and NGOs could provide subsidies for green technologies, training on waste reduction, and recognition programs for eco-friendly MSMEs. Integrating circular economy principles into MSME development policies would align local practices with global sustainability agendas such as the SDGs.

Challenges and Opportunities

While the study provides valuable insights, it also highlights challenges facing MSMEs in East Java. Limited access to capital, technological gaps, and regulatory inconsistencies continue to hinder sustainability. However, opportunities exist in the growing digital economy, expanding export markets, and government initiatives to promote inclusive growth. By leveraging innovation, partnerships, and regulatory support, MSMEs can transform these challenges into pathways for long-term resilience.

Limitations and Future Research

The study has several limitations. First, it focuses only on East Java, which may limit generalizability to other regions. Future research should conduct comparative studies across provinces or countries. Second, while the study uses cross-sectional data, longitudinal research could capture dynamic changes in strategies and sustainability over time. Third, the study focuses on quantitative methods; integrating qualitative insights could enrich understanding of how

entrepreneurs perceive and implement strategies.

Future research could also explore sector-specific dynamics, examining whether strategies differ in effectiveness between manufacturing, services, and agriculture. Additionally, further investigation into the barriers to circular economy adoption and financial literacy would provide actionable insights for policymakers and practitioners.

5. CONCLUSION

This study examined the role of business strategies, competition, and regulation in enhancing MSME sustainability in East Java, Indonesia. Drawing on a sample of 396 enterprises across handicrafts, food and beverage, and service sectors, the research employed SEM-PLS to test a comprehensive model integrating multiple strategic factors, a mediating mechanism, and a moderating condition. The findings contribute new insights to both theory and practice in the field of MSME sustainability.

First, the results demonstrate that internal strategies, particularly digital marketing, innovation, adaptive pricing, distribution efficiency, and inclusive partnerships, significantly enhance MSME sustainability. These findings align with the Resource-Based View and Competitive Advantage Theory, which emphasize the strategic use of resources and competitive positioning as drivers of long-term performance. Inclusive partnerships further validate the principles of Service-Dominant Logic, showing that collaborative value creation strengthens resilience. In contrast, credit facilities and circular economy practices did not exhibit significant direct effects, suggesting that their potential is constrained by contextual factors such as financial literacy, cost structures, and institutional support.

Second, the study highlights the mediating role of competition, which transforms strategic inputs into sustainable outcomes. This finding underscores that strategies such as innovation and digital adoption are most effective when they enhance competitiveness in dynamic markets.

By conceptualizing competition as a mediator rather than merely an environmental variable, the study extends existing theories of competitive dynamics and aligns with perspectives from dynamic capabilities theory.

Third, the moderating role of regulation, as enforced by the Indonesian Competition Commission (KPPU), emerges as a critical factor. Regulation strengthens the positive effects of strategies and competition, ensuring fair practices and leveling the playing field for MSMEs. This confirms predictions from Institutional Theory and Collaborative Governance, which emphasize the importance of governance structures in shaping organizational behavior and outcomes. Effective regulatory environments not only protect MSMEs from monopolistic practices but also amplify the benefits of innovation, digitalization, and partnerships.

The theoretical contributions of this study are threefold. It integrates multiple frameworks (RBV, Porter's Competitive Advantage, SDL, Circular Economy, Institutional Theory) into a single model of MSME sustainability; it reconceptualizes competition and regulation as process variables rather than contextual backdrops; and it provides a contingency perspective that recognizes the importance of institutional and technological contexts in shaping the effectiveness of business strategies.

The practical implications are equally significant. For MSMEs, the findings emphasize the urgency of adopting digital marketing, investing in innovation, and building inclusive partnerships. For policymakers, the results call for strengthening regulatory enforcement by

KPPU, redesigning credit programs to incentivize productive investment, and expanding financial literacy initiatives. For sustainability advocates, the limited adoption of circular economy practices highlights the need for policy incentives, subsidies, and capacity-building programs that make sustainability accessible and feasible for small enterprises.

Despite its contributions, the study has limitations. It is confined to East Java and may not fully represent MSMEs in other Indonesian provinces or international contexts. The cross-sectional design limits the ability to capture long-term dynamics, while reliance on self-reported data may introduce bias. Future research should employ longitudinal designs, conduct cross-regional comparisons, and integrate qualitative methods to deepen understanding of MSME strategies and sustainability pathways.

In conclusion, MSME sustainability in East Java is best understood as the outcome of strategic alignment between internal capabilities, competitive dynamics, and regulatory frameworks. While innovation, digitalization, and partnerships drive resilience, their effectiveness is mediated by competition and moderated by regulation. Addressing gaps in financial literacy, circular economy adoption, and regulatory enforcement will be critical for advancing both the sustainability of MSMEs and Indonesia's broader development goals. By situating MSMEs within a comprehensive theoretical and policy framework, this study provides a foundation for future research and practical interventions aimed at strengthening the backbone of Indonesia's economy in an era of global uncertainty.

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