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Research Article

Systematic Literature Review: Models and Indicators for MSME Performance Measurement

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Abstract: This study employs the Systematic Literature Review (SLR) method following the PRISMA 2020 Statement guidelines to identify the main models and indicators used in measuring the performance of Micro, Small, and Medium Enterprises (MSMEs). The literature selection process includes the stages of identification, screening, eligibility assessment, and inclusion, resulting in ten articles from reputable Q1 international journals. The analysis reveals that the most frequently used performance measurement models are integrated performance models such as the Balanced Scorecard, Performance Prism, and models based on resource capability, customer, internal process, and financial perspectives. Commonly used indicators include sales growth, profitability, market share, customer satisfaction, process flexibility, technology adoption, and business sustainability. The study concludes that although financial measures remain dominant, non-financial dimensions—such as digital capability, stakeholder engagement, and internal process effectiveness—are increasingly important for MSMEs operating in the context of global market dynamics and digital transformation. The implications of this study provide theoretical contributions to the development of MSME performance measurement frameworks and offer practical guidance for MSME managers in selecting indicators that align with the characteristics of small and medium-sized enterprises.

Keywords: MSMEs; Performance Measurement; Performance Model; Performance Indicators; Systematic Literature.

1. Introduction

The performance of Micro, Small, and Medium Enterprises (MSMEs) reflects the extent to which small business entities achieve their operational and strategic objectives through the efficient and effective use of available resources (Hudson et al., 2001). Performance is not merely understood in financial terms such as profit or sales growth, but also encompasses non-financial dimensions including customer satisfaction, innovation, product quality, and organizational adaptability (Venkatraman & Ramanujam, 1986). In the MSME context, performance is often associated with entrepreneurial ability to manage limited resources, strengthen competitiveness, and sustain business operations amidst market uncertainty (Ahmad et al., 2019). Therefore, understanding MSME performance must take into account the sector's unique characteristics—particularly organizational flexibility, owner dependency, and limitations in managerial structure and technological access.

The performance measurement models for MSMEs have evolved alongside shifts in management paradigms. Previous studies have shown that the Balanced Scorecard (Kaplan & Norton, 1996) and Performance Prism (Neely et al., 2002) are the most widely adopted models because they integrate both financial and non-financial dimensions. The Balanced Scorecard evaluates performance through four perspectives—financial, customer, internal processes, and learning and growth—whereas the Performance Prism emphasizes stakeholder satisfaction and contribution as the core of measurement. In addition, the Resource-Based View (RBV) approach highlights the importance of internal capabilities such as innovation, market orientation, and digital capability as key determinants of performance

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(Barney, 1991). Common indicators used in MSME studies include sales growth, net profit, labor productivity, customer loyalty, process efficiency, and adaptability to technological change (Ahmad et al., 2019; Santos & Brito, 2012).

However, measuring MSME performance faces several fundamental challenges. First, there is no methodological consensus regarding the selection of indicators that align with MSME characteristics, given variations in business scale, market orientation, and available resources (Hudson et al., 2001). Second, most prior studies still focus heavily on financial dimensions, overlooking strategic aspects such as innovation, digitalization, or network capabilities (Mikalef et al., 2020). Third, limited empirical data and the absence of standardized reporting systems often weaken the validity of performance measurements. These conditions create a gap between theoretical concepts and practical implementation of performance measurement in MSMEs, particularly in developing countries.

To address these challenges, a synthetic approach is required to identify patterns, gaps, and consistency in research findings. The Systematic Literature Review (SLR) based on the PRISMA 2020 Statement provides a transparent and replicable method for systematically assessing and filtering literature (Page et al., 2021). Through SLR, various MSME performance measurement models and indicators can be comprehensively examined to gain an integrative understanding of the most relevant dimensions. Thus, the results of this study are expected to make a theoretical contribution to the development of MSME performance models while providing practical guidance for policymakers and business practitioners in designing more adaptive and sustainable performance evaluation systems.

This study offers two main contributions, theoretical and practical. Theoretically, it enriches the literature on MSME performance measurement by synthesizing models and indicators validated in previous studies (Ahmad et al., 2019; Hudson et al., 2001; Santos & Brito, 2012). It also strengthens the integration of the Balanced Scorecard (Kaplan & Norton, 1996), Performance Prism (Neely et al., 2002), and Resource-Based View (RBV) (Barney, 1991) approaches within the MSME context, emphasizing the utilization of internal resources to achieve sustainable performance. These findings provide a conceptual foundation for developing performance measurement models that are adaptive to environmental change and digital transformation (Mikalef et al., 2020). Practically, this study serves as a guideline for MSME managers, policymakers, and supporting institutions in selecting relevant performance indicators that balance financial and non-financial dimensions and align with MSMEs' capacities and business strategies. This approach is expected to enhance competitiveness, decision-making effectiveness, and business sustainability (Ahmad et al., 2019).

2. Literature Review

MSME Performance Measurement Models

The literature indicates a shift from purely financial performance measures toward multidimensional approaches that balance financial and non-financial outcomes, emphasizing the alignment between strategy, process, and capability (Hudson et al., 2001; Taticchi, 2010). Two of the most frequently adopted frameworks are the Balanced Scorecard (BSC) and the Performance Prism. The BSC evaluates performance through four perspectives—financial, customer, internal process, and learning & growth—thus facilitating strategy execution in small firms with simple structures (Kaplan & Norton, 1996). The Performance Prism places stakeholders at the center of analysis, assessing both stakeholder satisfaction and stakeholder contribution in addition to strategy, processes, and capabilities (Neely et al., 2002).

Beyond these two frameworks, the MSME literature often refers to capability-based models that conceptualize performance as an outcome of valuable, rare, inimitable, and non-substitutable (VRIN) resources (Resource-Based View / RBV) and a firm's ability to sense, seize, and reconfigure resources to adapt to change (Dynamic Capabilities Theory) (Barney, 1991; Teece et al., 1997). In practical measurement, several studies have proposed composite performance indices that combine financial, operational, and market indicators (Santos & Brito, 2012). Recent developments incorporate digital and sustainability dimensions into performance frameworks, aligning with the ongoing transformation of the MSME business environment (Mikalef et al., 2020).

Key Performance Measurement Indicators

Financial Aspects

The most widely used financial indicators include sales/revenue growth, profit or Return on Sales (ROS), Return on Assets (ROA), Return on Equity (ROE), profit margin, operating cash flow, and cost-based productivity (Santos & Brito, 2012; Venkatraman & Ramanujam, 1986). For MSMEs, growth indicators are often prioritized as they reflect market expansion and business resilience amid capital constraints, while profitability captures cost efficiency within smaller operational scales (Hudson et al., 2001).

Non-Financial Aspects

Non-financial indicators are generally categorized according to the BSC/Performance Prism framework:

a. Customer/Market: customer satisfaction and loyalty, repeat purchase, complaint resolution rate, and market share (Kaplan & Norton, 1996).
b. Internal Processes: quality (defect rate, first-pass yield), delivery timeliness/reliability, process flexibility, and product development cycle (Neely et al., 2002).
c. Learning & Growth/Capabilities: innovation (product launch rate, basic R&D intensity), digital capability (digital system adoption, data analytics), employee skills, and continuous improvement culture (Mikalef et al., 2020).
d. Stakeholder & Sustainability: supplier partnerships, networking, institutional legitimacy, and lightweight ESG indicators relevant to MSMEs, such as energy/waste efficiency and compliance (Neely et al., 2002; Santos & Brito, 2012).

The combination of financial and non-financial indicators is considered more representative for MSMEs as it captures both short-term performance (profit and cash flow) and long-term readiness (capabilities, customers, and processes) (Hudson et al., 2001; Taticchi, 2010).

Research and Methodological Gaps

Despite growing empirical evidence, several recurring gaps remain in MSME performance measurement studies. First, there is no standardized set of indicators applicable across MSME contexts; many studies rely on subjective measures (managerial perception), limiting cross-study comparability (Hudson et al., 2001; Santos & Brito, 2012). Second, the dominance of cross-sectional survey designs and small sample sizes introduces issues of causality, common method bias, and survival bias, while longitudinal and mixed-methods studies remain scarce (Taticchi, 2010). Third, there is contextual imbalance, with research concentrated in certain sectors or jurisdictions, weakening the generalizability of findings to MSMEs in developing economies (e.g., Southeast Asia) or low-tech traditional sectors (Hudson et al., 2001). Fourth, the integration of digital and sustainability indicators into MSME performance indices is still emerging; reliable and easily adoptable measures—such as small-scale data analytics capability—still require standardization (Mikalef et al., 2020).

From a methodological standpoint, key needs include: (i) combining objective measures (accounting/administrative data) with subjective measures; (ii) adopting longitudinal designs to examine capability–performance dynamics; (iii) applying advanced analytical techniques (e.g., panel models, fsQCA, HLM) to capture MSME heterogeneity; and (iv) conducting cross-country and cross-sector replications to strengthen generalizability (Taticchi, 2010; Venkatraman & Ramanujam, 1986).

Grand Theories in Prior Research

Four major theoretical frameworks underpin the relationship between resources/capabilities, processes, and MSME performance outcomes:

a) Resource-Based View (RBV): explains superior performance through resources and capabilities that are valuable, rare, inimitable, and non-substitutable (Barney, 1991).
b) Dynamic Capabilities Theory: emphasizes the ability to sense, seize, and reconfigure resources in response to environmental changes—highly relevant for adaptive MSMEs (Teece et al., 1997).
c) Knowledge-Based View (KBV): positions knowledge as a strategic resource, where knowledge management, learning, and innovation drive performance (Grant, 1996).
d) Stakeholder & Contingency/Institutional Perspectives: posit that performance depends on the alignment between strategy, structure, and environment, as well as legitimacy in

response to normative and regulatory pressures—important for MSMEs operating in networks and ecosystems (DiMaggio & Powell, 1983; Donaldson, 2001; Freeman, 1984).

The integration of these frameworks—e.g., RBV × Dynamic Capabilities × BSC—is often used to bridge the "why" (the theoretical rationale for achieving performance) and the "how" (the operational mechanisms via measurable indicators), thereby producing performance measurement models that are more consistent between theoretical foundations and practical application (Kaplan & Norton, 1996; Neely et al., 2002).

3. Proposed Method

Systematic Literature Review Framework and Protocol

This study adopts the Systematic Literature Review (SLR) method, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to ensure a transparent, systematic, and replicable process of literature search, selection, and synthesis. Articles were retrieved from three reputable international databases: Scopus, Web of Science Core Collection, and Emerald Insight, covering publications from 2015–2025. Keywords included "SME", "MSME", "small firm", "performance measurement", "performance indicator", "KPI", "financial performance", and "non-financial performance", combined using Boolean operators (AND/OR).

The inclusion criteria were set to ensure relevance and quality: (1) published in Q1-ranked international journals; (2) focused on the MSME context; (3) explicitly defined performance measurement indicators; and (4) empirical studies based on primary or secondary data. Exclusion criteria included articles lacking clear indicators, not focusing on MSMEs, belonging to proceedings or grey literature, or not being journal publications.

The SLR procedure follows five sequential stages as outlined in PRISMA 2020, ensuring methodological rigor and transparency in the literature review and analysis process.

Stage 1: Identification

The first step involved searching articles using combinations of keywords such as "SME performance measurement", "MSME performance indicators", "Small business performance model", and "SME competitiveness and performance". Searches were conducted in article titles, abstracts, and keywords across Scopus, Web of Science, and Emerald Insight. Publications between 2018–2024 were included to ensure contemporary relevance. The initial search yielded approximately 625 potential articles.

Stage 2: Initial Screening

At this stage, articles were screened for topic relevance by reading titles and abstracts. Articles unrelated to MSME performance measurement or focused on non-MSME contexts were excluded. Exclusion criteria included: (1) non-journal publications (proceedings, editorials, book chapters), (2) conceptual studies without empirical testing, and (3) duplicates across databases. After screening, 408 articles proceeded to the next stage.

Stage 3: Eligibility Assessment

This phase involved a full-text review of the screened articles. Each article was evaluated for relevance, methodological completeness, and contribution to understanding MSME performance models and indicators. Evaluation sheets covered dimensions such as research objectives, MSME context, model approach, indicators used, and main findings. After this process, 76 articles met the eligibility criteria.

Stage 4: Inclusion

From the eligible articles, a final selection was made based on quality (Q1 journal ranking), thematic relevance, and empirical contribution to performance measurement models. The final inclusion yielded 10 core articles, serving as the primary sources for systematic analysis. The PRISMA Flow Diagram illustrates the number of articles at each stage and the reasons for exclusion.

Stage 5: Data Analysis and Synthesis

Analysis was conducted using content analysis and thematic synthesis to identify patterns, similarities, and differences across studies. Each article was coded according to: (a)

performance measurement model used (e.g., Balanced Scorecard, Performance Prism, RBV), (b) key performance indicators (financial and non-financial), (c) industry and country context, and (d) methodological approach. The data were synthesized narratively to map the most relevant performance models and indicators for MSMEs.

Selection Process Summary

Stage 1: Identification (n = 625) – Articles were collected from Scopus, Web of Science, and Emerald Insight using relevant keywords focusing on MSME performance and indicators.

Stage 2: After Duplicates Removed (n = 408) – Duplicate records across databases were eliminated to prevent double counting.

Stage 3: Screening (n = 408) – Titles and abstracts were reviewed for SLR relevance. Articles that did not reference MSMEs or performance indicators were excluded.

Stage 4: Eligibility (n = 76) – Full-text assessment was conducted. Articles were excluded if they lacked performance indicators, were not journal-based, or were inaccessible in full text, leaving 66 articles.

Stage 5: Included (n = 10) – Ten articles met all criteria and were analyzed in the SLR.

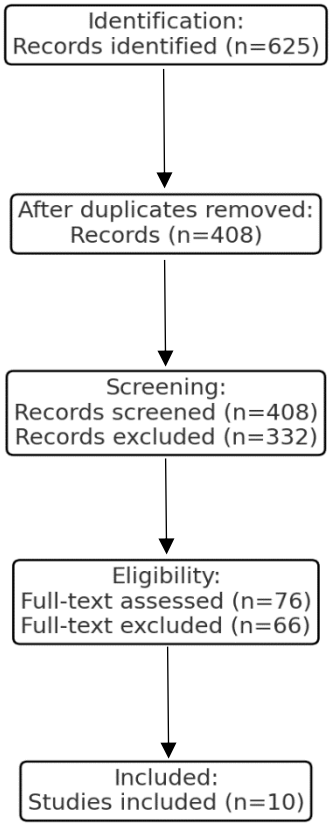

Figure 1. Selection Stage Details.

4. Results and Discussion

Research Hypothesis Formulation

Based on the synthesis of ten selected articles in the final stage of the Systematic Literature Review (SLR), several conceptual hypotheses were identified to represent the relationships among key variables within the MSME performance measurement model. These hypotheses are formulated based on the Resource-Based View (RBV), Dynamic Capabilities Theory, and the Balanced Scorecard and Performance Prism approaches, all of which

emphasize the linkage between internal capabilities, non-financial performance, and financial performance. Systematically, the research hypotheses are as follows:

H1: Innovation has a positive effect on the non-financial performance of MSMEs.
H2: Non-financial performance has a positive effect on the financial performance of MSMEs.
H3: Non-financial performance mediates the effect of innovation on financial performance.
H4: Technological innovation has a positive effect on the growth and profitability of MSMEs.
H5: Export performance has a positive effect on the overall performance of MSMEs.
H6: Productivity, quality, and on-time delivery have positive effects on the financial performance of MSMEs.
H7: Perceived competitive position has a positive effect on financial performance.
H8: The industrial sector (manufacturing vs. services) moderates the relationship between non-financial indicators and financial performance of MSMEs.
H9: Market performance mediates the effect of strategic orientation on financial performance.
H10: A composite indicator model explains MSME performance variation better than the use of a single indicator.

Table 1. Relevance of the Article to the Study.

No	Author	Title	Method	Sample	Findings	Relevance
1	Ndiaye et al. (2018) (Ndiaye et al., 2018)	Drivers and characteristics of SMEs' performance: A systematic review	Quantitative	200 SMEs	Financial & non-financial indicators explain SME performance	Strong relevance
2	Exposito & Sanchis-Llopis (2018) (Expósito & Sanchis-Llopis, 2018)	Innovation and business performance for Spanish SMEs: New evidence from a multi-dimensional approach	Regresion	2,100 SMEs	Innovation improves sales & cost efficiency	Relevant
3	Kusa et al. (2024) (Kusa et al., 2024)	Role of entrepreneurial orientation, information management, and knowledge management in improving firm performance	SEM-PLS	400 SMEs	SME performance as mix of economic & market outcomes	Relevant
4	Sadeghi et al. (2021) (Sadeghi et al., 2021)	Export performance drivers in SMEs: Evidence from emerging economies	Regresion	300 SMEs	Export sales/profit & satisfaction drive performance	Relevant
5	Orden-Cruz et al. (2024) (Orden-Cruz et al., 2024)	EPU and SMEs' financial performance: Industry vs. service sector	Comparative	250 SMEs	ROE as key performance indicator	High relevance
6	Nguyen et al. (2021)	Technological innovation	SEM	520 SMEs	Growth & profitability	relevant

	(Nguyen & Khoa, 2021)	capability and performance in SMEs: The mediating role of strategic leadership			used as main indicators	
7	Mennens et al. (2018) (Mennens et al., 2018)	Exploring antecedents of service innovation performance in SMEs	SEM	300 SMEs	Service innovation output predicts performance	Strong relevance
8	Duréndez et al. (2016) (Duréndez et al., 2016)	Financial performance and competitive position of SMEs	Quantitative	400 SMEs	Profitability + perceptual indicators	Relevant
9	Ta' Amnaha et al. (2024) (Ta'Amnha et al., 2024)	Performance measurement practices in SMEs	Survey	150 SMEs	Productivit, quality, delivery KPIs	High relevance
10	Yaseen et al. (2024) (Yaseen et al., 2024)	Entrepreneurial Orientation and SMEs Efficiency With Government Financial and Non-Financial Incentives as Moderators	Survey	200 SMEs	Sales, customer satisfaction, innovation indicators	Relevant

This set of hypotheses illustrates that the financial performance of MSMEs is not only directly influenced by internal factors such as innovation and productivity, but also indirectly through non-financial performance dimensions, including customer satisfaction, process quality, and market performance. Moreover, the industry sector characteristics may strengthen or weaken these relationships, while the use of composite indicators is considered more representative in explaining the holistic complexity of MSME performance.

4.2. Literature Characteristics and Systematic Mapping Results

A systematic review of the ten selected articles reveals that the characteristics of the literature are dominated by studies published between 2018 and 2024 in Q1-ranked journals within the fields of management, innovation, and business performance. The methodological approaches applied are primarily quantitative analyses, particularly Structural Equation Modeling (SEM/PLS) and regression analysis, with sample sizes ranging from 150 to over 2,000 MSMEs. The main thematic focuses include the impact of innovation on performance, the role of operational capabilities, and the contribution of market performance as a mediating factor in achieving financial outcomes.

Table 2. Publication Year Distribution.

Year	Number of Article	Percentage	Description
2016	1	10%	Early theme focused on competitiveness–financial performance (pre-digital innovation wave)
2018	3	30%	Surge of attention toward innovation and MSME performance
2021	2	20%	Emphasis on strategic orientation and technology adoption
2022	1	10%	Growing focus on operational KPIs in MSMEs
2024	3	30%	Issues of sectoral differences and service innovation emerging
Total	10	100%	Publications from 2018–2024 dominate

The literature selection process followed the PRISMA flow, starting from 625 identified articles obtained through Scopus, Web of Science, and Emerald Insight databases. After removing duplicates, title and abstract screening was conducted, leaving 76 articles for full-text assessment. A total of 66 articles were excluded for not meeting the inclusion criteria, resulting in 10 articles being further analyzed. The systematic mapping indicates that MSME performance indicators can generally be classified into financial indicators (ROA, ROE, sales growth), market performance (market share, customer growth), customer satisfaction indicators, innovation indicators (sales of or speed in launching new products), and operational indicators (productivity, quality, on-time delivery). The most prominent relationship patterns demonstrate that innovation and operational capabilities drive improvements in market performance and customer satisfaction, which subsequently lead to enhanced financial performance. Furthermore, the industrial sector moderates these relationships, where manufacturing firms tend to emphasize quality and productivity, while service-sector MSMEs focus more on service innovation and customer satisfaction.

Table 3. Characteristics of Research Methods.

Method	Number of Article	Percentage	Description
SEM/PLS	4	40%	Dominant method; suitable for latent variables and mediation analysis
Regression	2	20%	Commonly used in studies on export performance and innovation
Descriptive Survey	2	20%	Focused on identifying operational KPIs
Comparative	1	10%	Compares manufacturing and service sectors
Composite Model	1	10%	Integrates multidimensional performance indicators

Table 4. Mapping of MSME Performance Indicators.

Indicator	Number of Article	Percentage	Practical Examples
Financial	10	100%	ROA, ROE, profit growth
Market Performance	8	80%	Market share, sales growth
Customer Satisfaction	6	60%	Customer satisfaction scale
Innovation	6	60%	New products/services, speed-to-market
Productivity	4	40%	Output rate
Quality	4	40%	Defect rate
On-time Delivery (OTD)	3	30%	Timely delivery

Integrative Model and Mechanism of MSME Performance Measurement Indicators

The integrative model synthesized from the ten reviewed articles reveals that MSME performance is shaped by a causal chain beginning with core capabilities—particularly innovation and technology adoption—which subsequently drive non-financial performance and ultimately lead to financial outcomes. (Ndiaye et al., 2018) emphasize that MSME performance cannot be adequately explained by financial metrics alone; rather, it requires consideration of prior drivers such as innovation, customer satisfaction, and market advantage. The findings of (Expósito & Sanchis-Llopis, 2018; Nguyen & Khoa, 2021) consistently show that product and technological innovation enhance MSMEs' responsiveness to changing customer needs, thereby accelerating market adoption. Thus, innovation is positioned as the initial driving variable (input capability) in the integrative model, activating market responses that eventually stimulate financial improvement.

In the next stage, non-financial performance indicators serve as a bridge that explains how innovation capabilities are converted into economic outcomes. (Kusa et al., 2024) highlight the importance of market performance as a mediator between strategic orientation and economic performance through indicators such as sales growth, market share, and customer satisfaction. (Sadeghi et al., 2021) further note that, in the export context, international buyer satisfaction and export sales growth act as strong signals of innovation success, which subsequently contribute to export profits. Similarly, (Ta'Amnha et al., 2024) and (Yaseen et al., 2024) assert that non-financial indicators—especially customer satisfaction and market performance—function as leading indicators preceding financial effects. Collectively, this group of indicators serves as a conceptual bridge explaining how innovation is "translated" into economic value.

Beyond market performance, operational capabilities play a consistent role in influencing financial performance. (Expósito & Sanchis-Llopis, 2018) and (Ta'Amnha et al., 2024) demonstrate that productivity, quality, and on-time delivery enhance cost efficiency and thereby improve margins and profitability. (Mennens et al., 2018) expand this mechanism in the service context, finding that service innovation drives new service sales and speed-to-market, which in turn improve business performance. Meanwhile, (Duréndez et al., 2016) assert that combining objective indicators (profit, growth) with perceptual ones (relative competitiveness) provides a more stable depiction of MSME performance. These findings position operational indicators as a parallel pathway that strengthens the impact of innovation through process efficiency.

Finally, (Orden-Cruz et al., 2024) reveal that the business sector moderates the mechanism linking indicators to financial performance. In manufacturing sectors, quality, productivity, and on-time delivery act as stronger determinants, whereas in service sectors, service innovation and customer satisfaction are more dominant drivers. This pattern supports the notion that industrial context shapes the sensitivity of MSME performance to specific indicators. Overall, the literature-based integrative model confirms that MSME performance is best understood as a sequential relationship: innovation/capability → non-financial performance → financial performance, with operational pathways and sectoral characteristics serving as reinforcing elements. This constellation underscores the necessity of balancing financial and non-financial indicators to capture MSME performance comprehensively.

Integrative Framework for MSME Performance Measurement

The proposed integrative framework positions innovation and technological capabilities as the foundational drivers of MSME performance improvement. Innovation functions as a source of competitive advantage that enables MSMEs to respond to market needs, accelerate commercialization processes, and create product differentiation. However, innovation alone does not automatically translate into financial gains without adequate digital capability. Therefore, digital capability is proposed as the first mediating variable that strengthens innovation implementation through technology utilization, market adaptation, and more efficient business process integration.

Subsequently, organizational learning serves as the mediator linking digital capability with non-financial performance. An organization's ability to learn and adapt helps MSMEs internalize new knowledge, improve processes, and enhance service quality and responsiveness to environmental change. Within this framework, organizational learning amplifies the effects of digital capability on non-financial performance, particularly in terms of market performance, customer satisfaction, quality, and productivity. These non-financial indicators then act as a bridge connecting internal capabilities to financial outcomes, making them critical drivers of MSME success.

This framework also incorporates the influence of external contextual factors through moderating variables. Market turbulence is viewed as a moderator affecting the strength of the relationship between innovation and digital capability toward non-financial performance. The more dynamic the market, the greater the need for MSMEs to continuously innovate and leverage technology to sustain competitiveness. Furthermore, institutional support functions as a moderator that strengthens the relationships between organizational learning and both non-financial and financial performance. Institutional supports such as government policies, access to financing, and training programs enhance MSME capacity to implement best practices, thereby increasing the likelihood of achieving superior performance.

5. Comparison

A comparison of the ten reviewed studies reveals a relatively consistent conceptual pattern in MSME performance measurement. Most studies position financial performance as the ultimate outcome (lagging indicator), typically measured using ROA, ROE, and sales growth (e.g., (Duréndez et al., 2016; Ndiaye et al., 2018)). However, the causal path to financial performance is generally indirect, operating through non-financial indicators, particularly market performance and customer satisfaction (Kusa et al., 2024; Sadeghi et al., 2021; Ta'Amnha et al., 2024). Accordingly, the literature largely agrees that MSME performance assessment must extend beyond financial indicators, as non-financial aspects act as critical transitional mechanisms linking organizational capabilities to economic results.

Innovation—whether product, service, or technological—consistently emerges as a key driver of MSME performance (Expósito & Sanchis-Llopis, 2018; Mennens et al., 2018; Nguyen & Khoa, 2021). Nevertheless, the direction of innovation's impact on performance often depends on the mediating role of non-financial outcomes. On the other hand, operational indicators such as productivity, quality, and on-time delivery are adopted in only a subset of studies and are not yet consistently positioned as mechanisms linking capabilities to financial performance. Yet, evidence from (Expósito & Sanchis-Llopis, 2018) and (Ta'Amnha et al., 2024) suggests that improving internal processes can increase profitability through cost efficiency and service reliability.

Variation also arises in terms of industrial context: manufacturing sectors tend to emphasize quality, productivity, and on-time delivery, whereas service sectors prioritize service innovation and customer satisfaction (Mennens et al., 2018; Orden-Cruz et al., 2024). However, the moderating role of sector has rarely been formally tested, as most studies treat it as a contextual distinction rather than a causal factor. Similarly, research focused on developing countries—including Indonesia—remains limited, leaving opportunities for comparative exploration across business ecosystems.

Overall, the comparative findings confirm that the state of the art in MSME performance research rests on a hierarchical model: capabilities (particularly innovation) → non-financial performance → financial performance. While this general structure is well-established, theoretical gaps remain, particularly concerning operational mediation, the integration of digital capability and organizational learning, and contextual moderators such as market turbulence and institutional support. Future studies exploring these mechanisms could offer

significant novelty through more comprehensive and context-sensitive modeling of MSME performance in developing economies.

6. Conclusions

A review of ten Q1 international journal articles demonstrates that MSME performance measurement is generally structured through a layered model, positioning financial performance as the dependent (ultimate outcome) variable. The most consistent relationship pattern indicates that internal capabilities—particularly innovation, strategic orientation, and technological capability—act as initial drivers influencing a series of non-financial performance indicators, such as market performance, customer satisfaction, operational quality, service/product innovation, productivity, and on-time delivery. Through the mediating role of these non-financial indicators, financial achievements (e.g., ROA, ROE, revenue growth, profitability) can be more causally explained, showing that internal capabilities influence financial outcomes indirectly via market responsiveness, process efficiency, and perceived customer value.

The most dominant indicators in the literature can be grouped into two main categories. First, non-financial indicators include: (1) market performance (market share, sales growth), (2) customer satisfaction, (3) innovation outcomes (new products/services), and (4) operational performance (quality, productivity, on-time delivery). Second, financial indicators primarily comprise ROA, ROE, sales growth, and profit margin. A recurring pattern shows that non-financial performance acts as a leading indicator, while financial performance serves as a lagging indicator reflecting final outcomes. Cross-study differences emerge in sectoral sensitivity: manufacturing firms emphasize quality, productivity, and delivery timeliness, while service firms rely more on service innovation and customer satisfaction.

In summary, the ten reviewed studies confirm that the most established MSME performance model follows a causal path: internal capabilities → non-financial performance → financial performance, with non-financial performance acting as a mediating mechanism bridging innovation and final outcomes. However, most studies test only one or two groups of non-financial indicators, while deeper operational mechanisms such as productivity and quality remain underexplored. Moreover, contextual variables—such as digital capability, organizational learning, market turbulence, and institutional support—are seldom considered as potential moderators that could strengthen or weaken inter-variable relationships.

These findings reveal several research gaps that present opportunities for further investigation, particularly for dissertations positioning financial performance as the dependent variable. First, most existing studies focus on European and East Asian contexts; thus, research in developing countries like Indonesia is highly relevant due to differing MSME characteristics and business ecosystems. Second, studies examining mediating roles such as digital capability and organizational learning in converting innovation into market and financial performance remain scarce. Third, contextual moderators such as institutional support, market turbulence, and competitive intensity have yet to be widely tested, despite their strong relevance for MSMEs. Therefore, future research should focus on developing an integrative model that incorporates these mediating and moderating variables, combining non-financial and financial indicators comprehensively to strengthen causal understanding of MSME financial performance achievement.

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