

## Marketing Agility, Market Sensing Capability, and Customer Orientation on SME Performance: The Mediating Role of Product-Service Adaptation

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### **Abstract**

*This study aims to analyze the role of Product-Service Adaptation in mediating the effects of Marketing Agility, Market Sensing Capability, and Customer Orientation on the performance of MSMEs in Malang City. The research method employed a quantitative approach using purposive sampling of 108 SME owners or managers, and data analysis was conducted via Partial Least Squares (PLS)-based Structural Equation Modeling (SEM) using SmartPLS. The results indicate that Marketing Agility has a positive and significant effect on SME performance, while Market Sensing Capability and Customer Orientation have positive but insignificant effects on SME performance. Furthermore, Marketing Agility, Market Sensing Capability, and Customer Orientation were found to have a significant effect on Product-Service Adaptation, which in turn has a positive and significant effect on SME performance. Another key finding is that Product-Service Adaptation mediates the effects of Marketing Agility and Market Sensing Capability on SME performance but does not mediate the effect of Customer Orientation. Theoretically, this study strengthens the literature on dynamic capabilities by positioning Product-Service Adaptation as a mediating variable, while practically, it implies that MSME operators should not only rely on market sensing capability and customer orientation but also enhance marketing agility and product-service adaptation to further improve business performance.*

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## INTRODUCTION

Micro, small, and medium-sized enterprises (MSMEs) operate in an increasingly dynamic market, characterized by rapidly changing customer preferences, intensifying competition, technological disruptions, and ever-shorter product and service life cycles. These conditions require MSMEs not only to maintain routine marketing activities but also to continuously monitor market changes, respond quickly, and adjust their offerings to remain relevant to customers. Business performance increasingly depends on the ability of MSMEs to transform market information and customer insights into timely marketing responses and appropriate product or service adjustments. Marketing-related capabilities can be a key source of competitive advantage and business performance, especially when companies operate in volatile and rapidly changing environments (Alghamdi & Agag, 2024; Foltean & van Bruggen, 2022). The ability to develop and implement marketing capabilities is particularly crucial for SMEs, as these businesses generally operate with more limited financial, technological, and human resources compared to large corporations. The effective utilization of market knowledge and marketing resources can determine the extent to which SMEs are able to respond to environmental changes and maintain their competitiveness.

Marketing agility has emerged as a critical organizational capability for companies facing market uncertainty and rapidly changing customer requirements. Marketing agility refers to an organization's ability to quickly identify changes in market conditions and adjust its marketing decisions and activities in response to those changes. Marketing agility enables companies to modify their marketing actions when customer preferences, competitive conditions, technology, or other market factors change. Agag et al. (2025) demonstrate that marketing agility has significant implications for company performance and customer-related outcomes, particularly through customer service performance and collaboration with customers. Alghamdi and Agag (2024) also highlight the importance of marketing agility in strengthening competitive advantage and explain that its role becomes particularly relevant in environments characterized by market volatility. Foltean and van Bruggen (2022) emphasize that digital technologies and marketing management support systems can facilitate marketing agility and enable companies to remain competitive amid changing market conditions. Therefore, marketing agility represents a critical capability that allows SMEs to translate environmental changes into timely marketing responses.

Market sensing is another crucial foundation for understanding how companies respond to a changing market. Market sensing refers to an organization's ability to identify, acquire, interpret, and utilize information regarding customers, competitors, market trends, and environmental developments. This capability enables companies to recognize emerging opportunities and threats and develop appropriate responses based on relevant market information. Christofi et al. (2023) highlight the importance of dynamic market sensing capabilities in supporting the digital transformation of SMEs, indicating that companies need the ability to continuously interpret changes in their external environment. Bui et al. (2026) further demonstrate that market-detection capabilities contribute to international performance among exporting SMEs through exploratory and exploitative innovation strategies. Hakeem (2023) also identifies market monitoring capabilities as a key mechanism linked to innovation performance in dynamic environments. Therefore, market monitoring capabilities are not limited to gathering market information but represent an organizational process through which information is transformed into strategic and operational responses.

Customer orientation is another critical capability in the process of understanding and responding to market needs. Customer orientation reflects the extent to which an organization focuses on understanding customer needs, preferences, expectations, and problems, and leverages that knowledge to create superior customer value. Customer orientation can support the development of products and services that are better aligned with customers' ever-changing needs. Gonu et al. (2023) highlight the relevance of customer orientation to service quality and customer satisfaction in the context of emerging markets. Tuominen et al. (2023) demonstrate that customer-centric strategies can contribute to innovation and business growth in international markets. Karasan et al. (2022) also highlight the importance of customer needs in customer-oriented product development, explaining how customer insights can be incorporated into product characteristics. Therefore, customer orientation provides a customer-focused foundation for transforming market and customer insights into changes in products and services.

The relationship between marketing capabilities and MSME performance requires further investigation because the presence of marketing capabilities does not always guarantee improved organizational performance. Companies may have the ability to identify market changes, understand customers, and respond quickly without necessarily translating those capabilities into market-relevant changes to their products or services. The transformation of market knowledge

and marketing responsiveness into concrete changes in market offerings is a critical process that requires greater theoretical and empirical attention. Product or service adaptation can provide this missing mechanism, as it represents the process by which firms modify their offerings in response to changes in customer needs, market conditions, and competitive pressures.

The existing literature indicates that marketing agility, market sensing capabilities, and customer orientation have been studied within different research streams. Research on marketing agility has primarily examined relationships with firm performance, competitive advantage, customer service performance, and customer-related outcomes (Agag et al., 2025; Alghamdi & Agag, 2024). Research on market sensing ability focuses on innovation performance, digital transformation, and international performance (Bui et al., 2026; Christofi et al., 2023; Hakeem, 2023). Customer-orientation research emphasizes customer satisfaction, service quality, innovation, and business growth (Gonu et al., 2023; Tuominen et al., 2023). This separation of research streams creates a research gap regarding how marketing agility, market-sensing capabilities, and customer orientation operate together as complementary capabilities that influence SME performance.

The second research gap pertains to the mechanisms through which market-oriented capabilities contribute to SME performance. Previous studies have often emphasized the direct relationship between organizational capabilities and performance outcomes. Research on marketing agility has demonstrated its relationship with firm performance and competitive advantage, while research on market-sensing capabilities emphasizes innovation and international performance (Agag et al., 2025; Alghamdi & Agag, 2024; Bui et al., 2026). The literature provides relatively limited explanation of how these capabilities translate into concrete modifications to products or services before performance improvements occur. Therefore, product or service adaptation is positioned in this study as a key mediating mechanism linking organizational capabilities to performance outcomes. This approach offers a process-oriented explanation of performance, rather than assuming that capabilities automatically lead to superior performance.

The third research gap relates to the separate treatment of product adaptation and service adaptation in previous studies. Product adaptation has been studied in relation to organizational knowledge and interorganizational mechanisms, highlighting the importance of tailoring products to various organizational and market requirements (Khoirunnisa & Almahendra, 2022). Service adaptation has been studied in relation to changes in customer experience and crisis conditions, highlighting the importance of modifying service delivery and service processes amid constantly changing circumstances (Larivière et al., 2025). The existing literature provides useful evidence on adaptation, but product adaptation and service adaptation are generally studied separately. Integrating product and service adaptation into a broader construct of product or service adaptation provides an opportunity to examine how SMEs adapt their market offerings, regardless of whether their primary offering consists of physical products or services.

The relevance of this research gap is particularly strong in the context of SMEs because small businesses often rely on their ability to respond quickly to changes in customer preferences and competitive conditions. SMEs generally have fewer resources than large companies, making rapid adaptation of existing products and services a crucial alternative to organizational transformations that require significant resources. Product or service adaptation can include modifications to product features, product quality, packaging, design, pricing, service processes, delivery methods, customer experience, and other elements of the market offering. The ability to make such

adjustments allows SMEs to maintain their relevance in the eyes of customers and respond to market changes without requiring major structural investments.

Research on SME performance has identified various organizational and environmental factors that contribute to business outcomes. Harini et al. (2023) identified several determinants of SME performance in Indonesia, highlighting the importance of organizational factors in explaining performance variations among Indonesian SMEs. Kádárová et al. (2023) demonstrated a relationship between digitalization and SME performance across various European Union countries, while Prasannath et al. (2024) examined the relationship between government support, entrepreneurial orientation, and SME performance. Panigrahi et al. (2024) identified inventory management as a critical issue related to MSME performance through a systematic review. Existing evidence suggests that MSME performance is influenced by a variety of organizational capabilities and operational factors. The specific pathways through which marketing capabilities influence MSME performance via product or service adaptation have not yet been adequately explored, particularly in the Indonesian context.

The context of Indonesian SMEs provides an important backdrop for investigating this relationship. Indonesian SMEs operate in an environment characterized by increasingly intense competition, constantly changing customer preferences, digital transformation, and evolving expectations regarding the value of products and services. Evidence from Indonesian SMEs indicates that performance is influenced by various organizational and contextual factors; however, the role of market-oriented capabilities in facilitating product or service adaptation remains under-explored (Harini et al., 2023). The city of Malang provides a relevant empirical context because its SME sector includes businesses operating in food and beverage, retail, the creative industries, services, tourism-related activities, and other consumer-oriented sectors. These businesses often interact directly with customers and therefore need to understand changing market preferences while adapting their products or services accordingly. Studying SMEs in Malang City can provide empirical evidence on the extent to which market-sensing capabilities, marketing agility, and customer orientation contribute to adaptation and performance in the context of a local, evolving market.

The theoretical framework of this study is primarily drawn from Dynamic Capabilities Theory. Dynamic Capabilities Theory explains how organizations develop the ability to detect environmental changes, capitalize on opportunities, and reorganize resources and activities in response to changing conditions. Market detection capability represents the detection dimension because it enables SMEs to identify changes in customers, competitors, and market conditions. Marketing agility represents the ability to respond quickly to these changes by modifying marketing decisions and activities. Customer orientation provides a customer-centered mechanism for interpreting market information and identifying changes in customer needs. Product or service adaptation represents the realignment of a firm's market offerings in response to changes in the market and customer needs. SME performance represents the organizational outcomes generated through the effective application of these capabilities. Therefore, the proposed framework conceptualizes performance improvement as the result of a capability-based adaptation process, rather than merely a consequence of individual marketing activities.

The novelty of this study lies in the integration of Marketing Agility, Marketing Sensing Capability, and Customer Orientation into a single model to explain SME performance through Product-Service Adaptation as a mediating variable. This study not only tests the direct influence of marketing capabilities on performance but also explains how these capabilities translate into

concrete adjustments to products and services in response to changing customer needs and market conditions. Furthermore, this study integrates product adaptation and service adaptation into a single construct to capture the characteristics of SMEs, which offer a diverse range of offerings. The research was conducted among SMEs in Malang City, thereby providing an empirical context for the application of Dynamic Capabilities Theory in explaining the relationship between market-oriented capabilities, offering adaptation, and SME performance in Indonesia.

Based on these research gaps and theoretical considerations, this study examines the influence of marketing agility, market detection capability, and customer orientation on SME performance through product or service adaptation as a mediating variable. This study aims to explain the process by which market-oriented capabilities are transformed into adaptive market offerings and subsequently lead to improved MSME performance. The proposed model contributes to the marketing and MSME literature by providing an integrated performance-adaptation capability framework and extending the application of Dynamic Capabilities Theory to product and service marketing within the context of Indonesian MSMEs. This study also offers practical implications for SME owners and managers by highlighting the importance of developing market sensing capabilities, marketing agility, and customer orientation as the foundation for adapting products and services to ever-changing market demands.

## METHODS

This study employs a quantitative approach using a survey method. According to Sugiyono (2017), quantitative research is research in which the data consists of numerical values and is analyzed using statistics. The study was conducted among SMEs in the city of Malang.

The sampling technique used was purposive sampling, which involves selecting a sample based on specific criteria. The criteria for respondents included MSMEs that had been in operation for at least one year, were actively marketing products or services, and where the respondents were owners or managers directly involved in marketing activities. Based on these criteria, a sample of 108 respondents was obtained.

The types of data used consisted of primary and secondary data. Primary data were collected through a questionnaire distributed via Google Forms and measured using a Likert scale, while secondary data were obtained from books, scientific journals, and relevant previous studies.

The research variables consisted of Marketing Agility (X1), Marketing Sensing Capability (X2), Customer Orientation (X3), SME Performance (Y), and Product-Service Adaptation (Z). The data analysis technique used Structural Equation Modeling (SEM) based on Partial Least Squares (PLS) with the assistance of SmartPLS version 4 software. The analysis was conducted in two stages: evaluation of the measurement model (outer model) to test validity and reliability through factor loadings, Average Variance Extracted (AVE), Composite Reliability, and Cronbach's Alpha, as well as an evaluation of the structural model (inner model) to test the relationships between variables and the significance of hypotheses based on T-statistic values ( $>1.96$ ) and P-values ( $<0.05$ ).

## RESULTS AND DISCUSSION

**Table1 's Validity Test (Outer Model)**

| Variable                            | Factor Loadings | AVE   | Description |
|-------------------------------------|-----------------|-------|-------------|
| <b>Marketing agility</b>            | 0.723–0.845     | 0.613 | Valid       |
| <b>Marketing Sensing Capability</b> | 0.611 – 0.839   | 0.567 | Valid       |
| <b>Customer Orientation</b>         | 0.558 – 0.784   | 0.511 | Valid       |
| <b>SME Performance</b>              | 0.827–0.892     | 0.717 | Valid       |
| <b>Product-Service Adaptation</b>   | 0.663–0.790     | 0.532 | Valid       |

Source: SmartPLS primary data, 2026

Based on Table 1, all research variables have Average Variance Extracted (AVE) values above 0.50, namely Marketing Agility at 0.613, Marketing Sensing Capability at 0.567, Customer Orientation at 0.511, SME Performance at 0.717, and Product-Service Adaptation at 0.532. Furthermore, the factor loadings for each indicator fall within the range that meets the criteria for convergent validity. According to (Hair et al., 2017), indicators with outer loadings between 0.40 and 0.70 may only be removed from the model “if removing those indicators improves the Composite Reliability (CR) or the Average Variance Extracted (AVE) beyond its minimum threshold (i.e., 0.50).” Therefore, if the overall AVE for the construct already meets the criterion of being greater than 0.50, then the indicators with values below 0.70 do not need to be removed and are deemed to meet the criteria for convergent validity.

**Table2 -Reliability Test**

| Variable                            | Cronbach's Alpha | Composite Reliability | Description |
|-------------------------------------|------------------|-----------------------|-------------|
| <b>Marketing agility</b>            | 0.842            | 0.888                 | Reliable    |
| <b>Marketing Sensing Capability</b> | 0.808            | 0.866                 | Reliable    |
| <b>Customer Orientation</b>         | 0.761            | 0.838                 | Reliable    |
| <b>SME Performance</b>              | 0.901            | 0.927                 | Reliable    |
| <b>Product-Service Adaptation</b>   | 0.781            | 0.850                 | Reliable    |

Source: SmartPLS primary data, 2026

Based on Table 2, all research variables have Cronbach's Alpha and Composite Reliability values above 0.70. This indicates that each construct has good internal consistency and can be considered reliable. In detail, the Marketing Agility variable has a Cronbach's Alpha value of 0.842 and a Composite Reliability of 0.888; Marketing Sensing Capability has values of 0.808 and 0.866; Customer Orientation at 0.761 and 0.838, SME Performance at 0.901 and 0.927, and Product-Service Adaptation at 0.781 and 0.850. According to Hair et al. (2019), Cronbach's Alpha and Composite Reliability values of  $\geq 0.70$  indicate adequate reliability. Thus, these results confirm that all research instruments possess high internal consistency and are suitable for use in PLS-SEM structural model analysis.

**Table 3 s of the Inner Model (R-Square)**

| <b>Variable</b>                              | <b>R-Square</b> | <b>Adjusted R-Square</b> |
|----------------------------------------------|-----------------|--------------------------|
| <b><i>SME Performance (Y)</i></b>            | 0.446           | 0.430                    |
| <b><i>Product-Service Adaptation (Z)</i></b> | 0.484           | 0.469                    |

Source: SmartPLS primary data, 2026

Based on Table 3, the R-Square value for the SME Performance (Y) variable is 0.446, with an Adjusted R-Square value of 0.430. This indicates that the variables Marketing Agility, Marketing Sensing Capability, Customer Orientation, and Product Service Adaptation account for 44.6% of SME performance, while the remaining 55.4% is explained by other variables outside the research model.

Meanwhile, the R-Square value for the Product-Service Adaptation (Z) variable is 0.484, with an adjusted R-Square value of 0.469. This means that the variables Marketing Agility, Marketing Sensing Capability, and Customer Orientation account for 48.4% of product-service adaptation, while the remaining 51.6% is influenced by other factors outside the “model”.

**Table: Hypothesis Test for the “4 ” Model**

| <b>Relationships Among Variables</b>                               | <b>Original Sample</b> | <b>T-Statistics</b> | <b>P-Values</b> | <b>Notes</b>    |
|--------------------------------------------------------------------|------------------------|---------------------|-----------------|-----------------|
| Marketing Agility (X1) → SME Performance (Y)                       | 0.323                  | 2.872               | 0.004           | Significant     |
| Marketing Sensing Capability (X2) → SME Performance (Y)            | 0.109                  | 0.973               | 0.331           | Not Significant |
| Customer Orientation (X3) → SME Performance (Y)                    | 0.170                  | 1.930               | 0.054           | Not Significant |
| Marketing Agility (X1) → Product-Service Adaptation (Z)            | 0.264                  | 2.872               | 0.004           | Significant     |
| Marketing Sensing Capability (X2) → Product-Service Adaptation (Z) | 0.369                  | 4.307               | 0.000           | Significant     |
| Customer Orientation (X3) → Product-Service Adaptation (Z)         | 0.237                  | 2.862               | 0.004           | Significant     |
| Product-Service Adaptation (Z) → SME Performance (Y)               | 0.332                  | 2.287               | 0.022           | Significant     |

|                                                                                                 |       |       |       |                 |
|-------------------------------------------------------------------------------------------------|-------|-------|-------|-----------------|
| Marketing Agility (X1) → <i>Product-Service Adaptation</i> (Z) → SME Performance (Y)            | 0.088 | 2.006 | 0.045 | Significant     |
| Marketing Sensing Capability (X2) → <i>Product-Service Adaptation</i> (Z) → SME Performance (Y) | 0.123 | 1.986 | 0.047 | Significant     |
| <i>Customer Orientation</i> (X3) → <i>Product-Service Adaptation</i> (Z) → SME Performance (Y)  | 0.079 | 1.741 | 0.082 | Not Significant |

Source: SmartPLS primary data, 2026

Based on Table 4, Marketing Agility (X1) has a positive and significant effect on SME Performance (Y) with an original sample value of 0.323, a T-statistic of 2.872, and a P-value of 0.004 ( $<0.05$ ). Thus, H1 is accepted. Conversely, Marketing Sensing Capability (X2) has a positive but insignificant effect on SME Performance (Y), with an original sample value of 0.109, a T-statistic of 0.973, and a P-value of 0.331 ( $>0.05$ ). Thus, H2 is rejected. Customer Orientation (X3) also has a positive but insignificant effect on SME Performance (Y), with an original sample value of 0.170, a T-statistic of 1.930, and a P-value of 0.054 ( $>0.05$ ); thus, H3 is rejected.

Furthermore, Marketing Agility (X1) has a positive and significant effect on Product-Service Adaptation (Z), with an original sample value of 0.264, a T-statistic of 2.872, and a P-value of 0.004 ( $<0.05$ ). Thus, H4 is accepted. Marketing Sensing Capability (X2) has a positive and significant effect on Product-Service Adaptation (Z), with an original sample value of 0.369, a T-statistic of 4.307, and a P-value of 0.000 ( $<0.05$ ); therefore, H5 is accepted. Customer Orientation (X3) also has a positive and significant effect on Product-Service Adaptation (Z), with an original sample value of 0.237, a T-statistic of 2.862, and a P-value of 0.004 ( $<0.05$ ); therefore, H6 is accepted.

Furthermore, Product Service Adaptation (Z) has a positive and significant effect on SME Performance (Y), with an original sample value of 0.332, a T-statistic of 2.287, and a P-value of 0.022 ( $<0.05$ ). Thus, H7 is accepted.

Regarding indirect effects, Marketing Agility (X1) through Product-Service Adaptation (Z) has a positive and significant effect on SME Performance (Y), with an original sample value of 0.088, a T-statistic of 2.006, and a P-value of 0.045 ( $<0.05$ ); therefore, H8 is accepted. Similarly, Marketing Sensing Capability (X2) through Product-Service Adaptation (Z) has a positive and significant effect on SME Performance (Y), with an original sample value of 0.123, a T-statistic of 1.986, and a P-value of 0.047 ( $<0.05$ ); thus, H9 is accepted. However, Customer Orientation (X3) through Product-Service Adaptation (Z) has a positive but insignificant effect on SME Performance (Y), with an original sample value of 0.079, a T-statistic of 1.741, and a P-value of 0.082 ( $>0.05$ ); therefore, H10 is rejected.

## DISCUSSION

The results of the analysis in Table 4 show that Marketing Agility (X1) has a positive and significant effect on SME Performance (Y), with an original sample value of 0.323, a T-statistic of 2.872, and a P-value of 0.004; therefore, H1 is accepted. This finding is consistent with Furyanah, Noviyanti, and Septiani (2026), who found that marketing agility has a significant positive effect on marketing innovation and marketing performance among businesses in the used-car market. Similar results are also supported by a study on international marketing agility among MSMEs in Yogyakarta (2026), which showed that marketing agility influences innovation capabilities and business performance, both directly and through the moderating effect of market turbulence. Interestingly, these results differ from the findings of Wilopo, Nuralam, Said, and Dahana (2026) on 220 SMEs in East Java, who instead found that marketing agility does not have a direct significant effect on SME performance; thus, reactive market adjustments alone are deemed insufficient to drive a company's success without broader market-driving capabilities. This discrepancy suggests that the strength of marketing agility's influence on SME performance remains contextual, depending on the business sector and the level of market turbulence faced.

Conversely, Marketing Sensing Capability (X2) has a positive but insignificant effect on SME Performance (Y), with an original sample value of 0.109, a T-statistic of 0.973, and a P-value of 0.331; therefore, H2 is rejected. These results are consistent with Kusumah et al. (2026), who found that dynamic capabilities, including sensing, do not necessarily have a direct impact on the competitive advantage strategies of small and medium-sized enterprises, as limitations in leadership, finance, and decision-making—which rely heavily on business owners—can hinder the conversion of these capabilities into tangible results. This finding is also consistent with Bui, Trinh, Nguyen, and Nguyen (2026), who demonstrated that market sensing capability only has a significant effect on the international performance of exporting SMEs when channeled through exploratory and exploitative innovation strategies as mediators, rather than directly. Sudarwati et al. (2025), in their study of batik SMEs, also found that market sensing influences product innovation capability, and that consumer preferences mediate the effect of this product innovation capability on marketing performance, reinforcing the pattern that market sensing operates indirectly. Theoretically, market sensing capability is essentially an informational capability that generates an understanding of market needs; however, this understanding only impacts performance when it is translated into concrete actions such as product or service adaptation. Therefore, its effect tends to be indirect through intervening variables such as Product-Service Adaptation, as confirmed by the results of the H9 test in this study, which showed a significant indirect effect even though the direct effect was not significant, indicating that Product-Service Adaptation acts as a mediator in the relationship between Marketing Sensing Capability and SME Performance.

Customer Orientation (X3) also has a positive but insignificant effect on SME Performance (Y), with an original sample value of 0.170, a T-statistic of 1.930, and a P-value of 0.054; thus, H3 is rejected. Although the coefficient of influence is positive, the P-value of 0.054 indicates that this effect is not yet statistically significant at the 5% significance level. These results align with those of Ramadhanti, Asmin, and Yulianingsih (2026) on bag-making SMEs in Ciampea, Bogor, who found that customer orientation has a positive and significant effect on innovation capability; however, business success is more often achieved through innovation capability as a mediator rather than directly. This finding is also consistent with Habtamu et al. (2025), who showed that the effect of customer orientation on MSME performance became insignificant after controlling for the mediating variable of innovation capability, indicating weak

partial mediation. Customer orientation essentially only yields an understanding of market needs, and without being translated into tangible changes in products or services, this understanding is not necessarily perceived by consumers as added value and therefore does not necessarily improve performance directly. This is reinforced by the results of the H10 test in this study, where the indirect effect of Customer Orientation through Product-Service Adaptation was also insignificant with a P-value of 0.082. This indicates that, in the sample of MSMEs in this study, customer orientation has not yet been fully converted into product or service adaptations that have a tangible impact on performance—likely due to the limited resources of MSMEs to respond to customer feedback quickly and systematically compared to large companies.

Marketing Agility (X1) has a positive and significant effect on Product Service Adaptation (Z) with an original sample value of 0.264, a T-statistic of 2.872, and a P-value of 0.004; therefore, H4 is accepted. Marketing Sensing Capability (X2) also has a positive and significant effect on Product Service Adaptation, with an original sample value of 0.369, a T-statistic of 4.307, and a P-value of 0.000; thus, H5 is accepted, and it represents the largest path coefficient toward Z among the three independent variables. Customer Orientation (X3) also has a positive and significant effect on Product-Service Adaptation, with an original sample value of 0.237, a T-statistic of 2.862, and a P-value of 0.004; thus, H6 is accepted. These three findings are consistent with studies on international marketing agility (2026), which indicate that agility drives innovation and adaptation capabilities as transmission channels leading to performance. The greatest contribution of Marketing Sensing Capability to product or service adaptation aligns with Sudarwati et al. (2025) and Bui et al. (2026), who demonstrated that market sensing serves as the primary foundation driving innovation capabilities and product adaptation strategies before impacting performance, given that the ability to detect market trends is essentially a source of relevant information for determining what aspects of the offered products or services need to be adapted.

Furthermore, Product-Service Adaptation (Z) has a positive and significant effect on SME Performance (Y), with an original sample value of 0.332, a T-statistic of 2.287, and a P-value of 0.022; thus, H7 is accepted, and it represents the largest path coefficient in the model leading to overall SME Performance. These results are consistent with those of Tjahjana, Dwidienawati, Ichsan, and Gandasari (2026), who studied 251 SMEs in Indonesia and found that innovation capabilities and digital capabilities strongly influence SME performance, reinforcing the idea that strategic capabilities do not have a significant impact on performance unless they are converted into concrete actions in the form of product or service adjustments to meet market needs.

Regarding indirect effects, Marketing Agility (X1) through Product-Service Adaptation (Z) has a positive and significant effect on SME Performance (Y), with an original sample value of 0.088, a T-statistic of 2.006, and a P-value of 0.045; thus, H8 is accepted. Similarly, Marketing Sensing Capability (X2) through Product-Service Adaptation (Z) has a positive and significant effect on SME Performance (Y), with an original sample value of 0.123, a T-statistic of 1.986, and a P-value of 0.047; thus, H9 is accepted. These two results indicate that Product-Service Adaptation acts as a partial mediator for Marketing Agility—since both its direct and indirect effects are significant—and as a full mediator for Marketing Sensing Capability, consistent with the pattern found by Bui et al. (2026), where the direct effect was not significant while the indirect effect via innovation strategy proved to be significant. However, Customer Orientation (X3) via Product-Service Adaptation (Z) has a positive but insignificant effect on SME Performance (Y),

with an original sample value of 0.079, a T-statistic of 1.741, and a P-value of 0.082; therefore, H10 is rejected. Although the indirect effect coefficient is positive at 0.079, the bootstrapping results show a T-statistic of 1.741 and a P-value of 0.082, indicating that this indirect effect is not yet significant at the 5% level.

The non-significant results for the direct effects of Marketing Sensing Capability (H2) and Customer Orientation (H3), as well as the indirect effect of Customer Orientation through Product-Service Adaptation (H10), can be explained by several possibilities. First, market sensing and customer orientation are fundamentally enabling rather than performing capabilities, as both generate market information or insights whose impact on performance is only realized after they are converted into concrete actions in the form of product or service adaptation. This aligns with the dynamic capability view (Teece, Pisano, & Shuen, 1997), which emphasizes that capabilities must first be deployed as market outputs to impact performance. Second, the characteristics of MSMEs—which have limited financial and human resources—make it difficult for them to follow up on the results of market sensing and customer orientation quickly and systematically. As emphasized by Kusumah et al. (2026), leadership and financial constraints in small and medium-sized enterprises can hinder dynamic capabilities from being realized as competitive strategies with tangible impacts. These findings suggest that the influence of market sensing and customer orientation on MSME performance may operate through mediators such as innovation capabilities or product/service adaptation (Bui et al., 2026; Sudarwati et al., 2025; Ramadhanti et al., 2026), rather than acting solely through direct effects.

Theoretically, the results of this study reinforce the dynamic capability model (Teece et al., 1997), which positions Product-Service Adaptation as a transformational mechanism that bridges marketing capabilities—namely agility, sensing, and customer orientation—with SME performance. Practically, SME operators are advised not to stop at the stage of identifying market needs through sensing or customer orientation but rather to accelerate the product and service adaptation cycle so that the market information obtained is truly converted into improved business performance.

## CONCLUSION

The research findings indicate that Marketing Agility has a positive and significant effect on MSME performance; thus, the higher the level of marketing agility, the better the performance achieved. Conversely, Marketing Sensing Capability has a positive but insignificant effect on SME performance, meaning that the ability to detect market trends has not yet become a dominant factor in improving performance. Similarly, Customer Orientation has a positive but insignificant effect on SME performance, indicating that customer orientation is not yet strong enough to drive performance improvements.

Furthermore, Marketing Agility was found to have a positive and significant effect on product-service adaptation, indicating that marketing agility enables MSMEs to adjust their products and services more quickly to meet market needs. Marketing Sensing Capability also has a positive and significant effect on product-service adaptation, indicating that the ability to detect market trends is a key factor in the product adaptation process. Similarly, Customer Orientation has a positive and significant effect on product-service adaptation, meaning that customer orientation drives MSMEs to adjust their products and services to better align with consumer needs.

Furthermore, Product-Service Adaptation has a positive and significant effect on MSME performance; thus, the better an MSME's ability to adapt its products and services, the higher its

performance.

This study also found an indirect effect, whereby Marketing Agility and Marketing Sensing Capability, through product-service adaptation, have a positive and significant impact on SME performance. This indicates that product adaptation serves as a key mechanism in strengthening the influence of marketing agility and market sensing capability on performance. However, Customer Orientation, mediated by product-service adaptation, has a positive but insignificant effect on MSME performance, meaning that customer orientation is not yet strong enough to amplify its impact on performance through the product adaptation mechanism.

This study contributes to the development of SME performance research by positioning Product-Service Adaptation as a mediating variable in the relationship between Marketing Agility, Marketing Sensing Capability, Customer Orientation, and SME performance. A limitation of this study is its scope, which was confined to SMEs in Malang City. Therefore, future research is recommended to expand the study's subjects and locations so that the results are more comprehensive and can be generalized more broadly.

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