

# The Effect of Supply Chain Management on MSME Performance: The Mediating Influence of Human Resource Management Practices

Supply Chain  
Management on  
MSME Performance

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## ABSTRACT

*In an increasingly competitive and dynamic business environment, MSMEs must strengthen both operational efficiency and human resource capabilities to sustain and improve their performance. This study aims to analyze the effect of Supply Chain Management (SCM) on the performance of MSMEs by examining the mediating role of Human Resource Management Practices (HRMP). The research employed a quantitative approach using a survey of 113 MSME owners. Data were analyzed using Structural Equation Modeling with Partial Least Squares (Smart PLS) version 4.0.1. The results reveal that SCM has a positive and significant effect on both MSME performance and HRMP. Likewise, HRMP also positively and significantly affects MSME performance. These findings indicate that effective SCM implementation, including efficient procurement, inventory management, and distribution, enhances business performance when supported by effective HR practices such as training, compensation systems, and internal communication. However, HRMP does not significantly mediate the relationship between SCM and MSME performance. Therefore, MSME performance improvement is more strongly driven by direct SCM implementation rather than through HRMP mediation, implying that better integration between supply chain strategies and human resource management is essential to achieve optimal performance.*

**Keywords:** Business Performance, Human Resource Management Practices, MSME Performance, Supply Chain Management.

## INTRODUCTION

Micro, Small, and Medium-Sized Enterprises (MSMEs) are crucial to the local and national economies, especially when it comes to generating employment and promoting economic expansion (Sinha et al., 2024). In Jayapura City, MSMEs contribute to various sectors, such as trade, services, and creative industries. However, MSMEs frequently struggle to improve their performance and competitiveness in the face of escalating commercial competition and shifting global economic dynamics. The success of MSMEs is largely determined by how well Supply Chain Management (SCM) and Human Resource Management (HRM) techniques are implemented.

SCM plays a crucial role in improving the operational efficiency and performance of SMEs by optimizing supply chain management, from raw material procurement to product distribution to end consumers. According to Chopra and Meindl (2019), effective SCM can increase cost efficiency, accelerate response times to market demand, and improve customer satisfaction. However, optimal SCM implementation depends not only on technical and operational aspects but also on the readiness of the human resources managing it. In the context of HRM, good workforce management practices are essential to support the success of SCM and the overall performance of MSMEs. According to Noe (2022), effective HRM practices such as employee training, fair compensation systems,

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and skills development can increase productivity and innovation within an organization. In addition, Becker and Huselid (2006) emphasize that HRM not only plays a role in managing human resources but also in creating added value for the organization through improving employee capabilities and performance.

In Jayapura, MSMEs contribute significantly to the local economy by generating jobs and enhancing community well-being. However, the performance of MSMEs in Jayapura still faces various challenges, including limitations in supply chain management, market competition, and suboptimal human resource quality. One of the key factors that can influence the success of MSMEs is the implementation of good human resource management practices. SCM refers to management strategies that aim to optimize the flow of goods, information, and finances in a supply chain. According to Chopra and Meindl (2019) Effective SCM can increase operational efficiency, reduce production costs, and improve customer satisfaction. However, the implementation of good SCM does not necessarily guarantee an improvement in SME performance without supporting internal factors, especially those related to human resource capacity. Many MSMEs face obstacles in adopting SCM due to limited workforce expertise, a lack of training, and a lack of innovation culture within the organization (Wang et al., 2020). Therefore, the role of HRM is important in ensuring that the workforce can optimally support the effectiveness of SCM.

Human resource management practices can act as a mediator in the relationship between supply chain management implementation and MSME performance, as effective SCM does not automatically improve performance without adequate human resource support. This study focuses on how HRM practices strengthen the impact of SCM on MSME performance in Jayapura. HRM practices include appropriate recruitment and selection, employee training and development, fair compensation and motivation systems, and the development of an organizational culture that supports innovation and collaboration. According to Noe (2022), effective HRM practices enhance employees' skills in managing supply chains, enabling SCM to operate more efficiently and ultimately improve MSME performance. As a mediating variable, HRM strengthens the SCM-performance relationship by improving employees' ability to adapt to SCM systems, enhancing service and product quality, increasing customer satisfaction and loyalty, and fostering innovation in production and distribution processes.

Based on previous studies, the effectiveness of supply chain management is highly dependent on the competence and involvement of human resources in operational processes. Battistoni et al. (2013) found that without proper human resource management practices, MSMEs face difficulties in maximizing the benefits of SCM implementation, as employee competence and involvement can strengthen the impact of SCM on firm performance. Similarly, Wang et al. (2020) revealed that the relationship between SCM and MSME performance is not always direct but can be mediated by effective HRM practices, noting that firms with strong HRM practices achieve significantly higher productivity growth than those with weak human resource development. In the context of Jayapura, many MSMEs still encounter challenges such as limited training, low employee motivation, and a weak professional work culture. Therefore, strengthening HRM practices is crucial to optimizing SCM implementation and ultimately enhancing MSME performance.

Thus, this study aims to analyze the effect of supply chain management on the performance of micro, small, and medium enterprises by examining the mediating role of human resource management practices of MSMEs in Jayapura. Given the importance of these two aspects in improving the competitiveness of MSMEs, a deeper understanding of the role of HRM as a mediator can provide insights for business actors and policymakers in designing more effective and sustainable business management strategies.

## **LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT**

### **The Effect on Supply Chain Management on MSMEs' Performance**

Performance is the economic foundation of every company. Therefore, to achieve the best performance, MSMEs face various challenges in operational facilities to obtain performance capital (Rusliana et al., 2023). Tomal and Jones (2015) defines company performance as actual results measured based on the desired results of the company. Performance is crucial for business management since operational actions that use the company's resources during a specific time frame affect performance results (Apriyanto et al., 2025). Performance is closely related to the financial and non-financial results of the combined process of implementing business activities, policies, and resources (Haryanto & Lunarindiah, 2023). Micro, small, and medium enterprises face significant challenges in terms of employee satisfaction, organizational commitment, and overall organizational performance improvement, particularly in developing countries (Farooq et al., 2015).

The performance of micro, small, and medium enterprises refers to the results or achievements obtained by a business within a certain period, which are evaluated based on predetermined standards or targets. According to Aribawa (2016), MSME performance is the work results achieved by an individual in completing their tasks in a company during a certain period, which are then compared to the standards or values set by the company. Supply chain management is the integration of business processes involving end customers and key suppliers that serves to provide value to customers and stakeholders by providing products, services, and information (Kamal & Irani, 2014). The implementation of supply chain management is considered an operational function or company activity that significantly determines the effectiveness and efficiency of the supply chain (Sandhu et al., 2013). Kumar et al. (2015) has also identified thirteen determinants of success in the implementation of supply chain management in MSMEs, some examples of which are top management commitment, information sharing, and the development of reliable suppliers. With the goal of increasing productivity and customer satisfaction, supply chain management is an integrated strategy to organize, coordinate, and manage the movement of goods, data, and resources from suppliers to final customers.

H1: Supply chain management has a positive effect on MSME performance.

### **The Effect of Supply Chain Management on HRM Practices**

Supply Chain Management (SCM) significantly influences ts by creating demands for specialized skills, adaptive capabilities, and strategic workforce alignment. As organizations integrate their supply chains with digital technologies and sustainability initiatives, HR practices must evolve to support these transformations through targeted talent development and organizational agility (Bals et al., 2019). Modern SCM requires employees with competencies in data analytics, digital supply chain technologies, and sustainability management. Consequently, HR departments design upskilling programs and continuous learning initiatives to build these emerging capabilities (Dubey et al., 2020). The adoption of Industry 4.0 technologies in supply chains further compels HR to restructure job roles, incorporate technology-oriented competencies, and develop change management strategies (Gölgeci & Kuivalainen, 2020).

SCM integration promotes cross-functional collaboration and agile working methods, leading HR to implement flexible workforce arrangements, collaborative performance systems, and innovation-focused reward mechanisms (Bag et al., 2021). Research shows that resilient supply chains depend heavily on human capital practices such as employee empowerment, knowledge sharing, and team-based problem solving (Chowdhury et al., 2023). Furthermore, sustainable SCM practices drive HR to incorporate green human resource management, including environmentally conscious training, eco-friendly performance metrics, and sustainability-oriented recruitment. Organizations with advanced SCM systems demonstrate more progressive HR practices, including diversity

initiatives, employee well-being programs, and strategic workforce planning that directly support supply chain resilience and competitiveness (Bag et al., 2023).

H2: Supply chain management has a positive effect on HRM practices.

### **The Effect of HRM Practices on MSMEs**

Human resource management is the use of each person's unique human resources to accomplish organizational objectives. All managers can accomplish anything in a company through human effort. Menon (2012) identifies that specific human resource management practices include job flexibility, team organization, team training, and the use of performance indicators that are significantly related to supply chain performance. Human resource management literature determines that training and development are among the most important factors in predicting employee behavior and performance (Huang et al., 2018; Pramesworo et al., 2025).

HRM practices are a set of strategic policies and actions that businesses use to effectively manage their workforce in order to attract, develop, motivate, and retain workers in order to meet organizational objectives. According to Noe (2022), Human Resource Management practices refer to a set of strategic organizational practices aimed at attracting, developing, motivating, and retaining employees so that they can effectively contribute to the achievement of organizational goals and serve as a source of competitive advantage. Effective HRM strategies, especially in small and medium-sized businesses, greatly enhance employee performance, engagement, and organizational outcomes, according to recent studies. Aboramadan et al. (2021) demonstrate that strategic HRM practices positively influence firm performance by enhancing employee capabilities and work motivation,

H3: HRM practices have a positive effect on MSME performance.

### **HRM Practices as a Mediating Variable**

Paruli and Santosa (2023) report that supply chain management implementation does not always exert a direct positive impact on MSME performance. Their findings indicate that supply chain management implementation may negatively affect MSME performance when it is not supported by effective human resource management practices. Nevertheless, human resource management practices show a positive influence on MSME performance and significantly mediate the relationship between supply chain management implementation and MSME performance, resulting in a positive indirect effect.

Jena and Ghadge (2021) demonstrate that supply chain management positively influences MSME performance and is also positively associated with human resource management practices. The findings further support the idea that supply chain management and MSME performance are mediated by human resource management techniques, which also have a favorable impact on MSME performance. These results demonstrate how important human resource management techniques are to boosting supply chain management's efficacy and enhancing MSME performance.

H4: The effect of supply chain management on MSME performance through HRM practices.

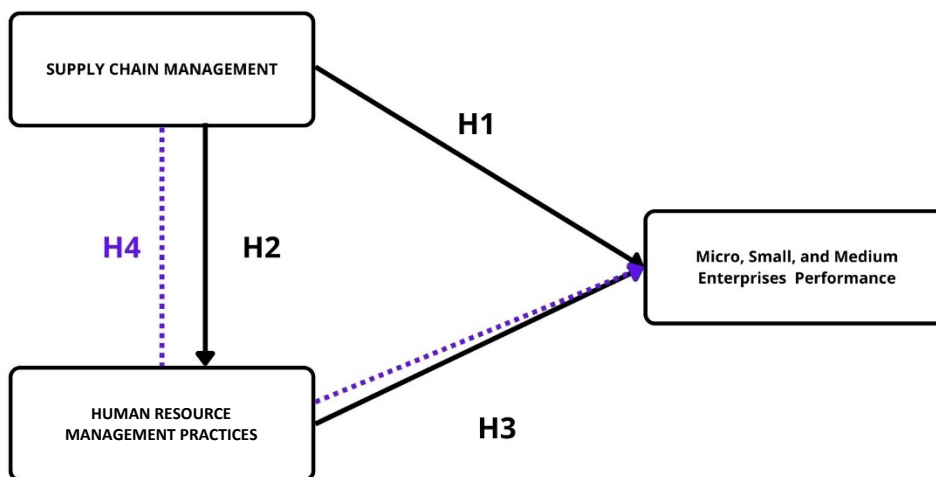


Figure 1. Conceptual Framework

The study's conceptual framework is depicted in Figure 1, which also shows how supply chain management, human resource management techniques, and the performance of micro, small, and medium-sized businesses are related. According to the model, supply chain management has a direct impact on MSME performance as well as HRM procedures. The relationship between supply chain management and enterprise performance is partially mediated by HRM practices, which also help MSMEs perform better. This paradigm emphasizes how crucial it is to combine supply chain tactics with efficient human resource management in order to improve MSME performance as a whole.

## RESEARCH METHODS

The study's objectives indicate that it is an explanatory investigation examining theories to explain the connections between variables and their consequences (Falk & Miller, 1992; Sugiyono, 2012). This study adopts a quantitative approach, utilizing a survey research design and a questionnaire to collect data. Jogiyanto Hartono (2018) asserts that the survey method is employed to gather data pertaining to the viewpoints and views of particular respondents. The research process involved developing a structured questionnaire based on established indicators from previous literature, ensuring that the measurement items for supply chain management, human resource management practices, and MSME performance were adapted from validated scales in similar studies. To address potential common method bias arising from self-reported data, Harman's single-factor test was conducted, confirming that no single factor accounted for the majority of variance, thus supporting the validity of the responses.

Margono (2005) states that any data within a specific scope and time period chosen by the researcher is referred to as the population. According to this definition, all of Jayapura's MSMEs make up the study's population. Purposive sampling was used to determine the sample, and 113 MSME owners were chosen as responders based on factors pertinent to the study's goals. This sample size was justified using a power analysis for PLS-SEM, considering the model's complexity with mediation paths and aiming for a minimum power of 0.80 at a significance level of 0.05, as recommended for structural equation modeling in management research. The selection ensured representation across key sectors such as trade, services, and creative industries, enhancing the relevance of the findings to the local MSME context.

Structured questionnaires were provided to MSME owners as part of a survey to gather data. MSME performance is the dependent variable in this study, whereas supply chain management is the independent variable and human resource management practices are the mediating variable. The constructs were specified as reflective models, where indicators are manifestations of the underlying latent variables, allowing for assessment

through convergent and discriminant validity. Indicators for supply chain management were drawn from Chopra and Meindl (2019), focusing on aspects like procurement and distribution; human resource management practices from Noe (2022), including training and compensation; and MSME performance from Haryanto and Lunarindiah (2023), emphasizing financial and operational outcomes.

This study examines and interprets the gathered data using quantitative data analysis methods. In order to aid comprehension, data analysis seeks to condense, categorize, and find patterns in the data. Mediation analysis and validity and reliability testing were used in the processing and analysis of the data. SmartPLS version 4.0.1, which allows the measurement of direct and indirect (mediated) effects among variables, was used for the analysis. The outer model evaluation included assessing indicator loadings (>0.70), composite reliability (CR >0.70), average variance extracted (AVE >0.50), and Heterotrait-Monotrait (HTMT) ratios (<0.85) for discriminant validity, ensuring robust measurement properties before proceeding to the inner model. Bootstrapping with 5,000 subsamples was applied to test the significance of path coefficients and indirect effects, providing reliable inference for the hypotheses.

## RESULTS

The results of the path analysis of the direct influence of Supply Chain Management (XSCM) and HRM Practices (ZPMSDM) on MSME Performance (YKINUM) can be seen in Figure 2.

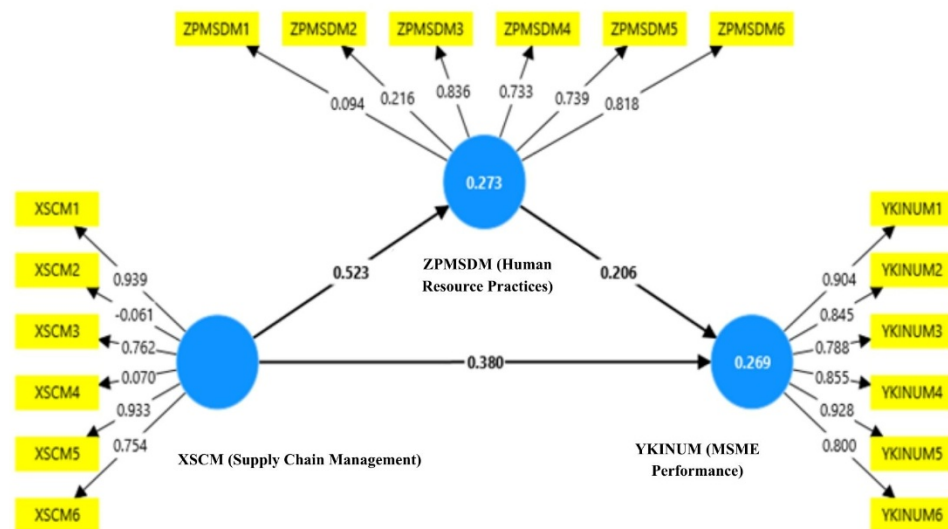


Figure 2. Path Analysis of Direct Influence - Phase I

Based on Figure 2, the measurement model indicates that the indicators demonstrate adequate construct validity. Each indicator shows a stronger loading on its respective construct than on other constructs, confirming discriminant validity. In addition, the indicator loadings generally exceed acceptable thresholds, indicating that the indicators are able to represent their latent variables appropriately. Therefore, it can be concluded that the constructs of supply chain management, human resource management practices, and MSME Performance meet the validity requirements and are suitable for further structural analysis.

Table 1. Validity Test

Indicator	Supply Chain Management	MSME Performance	Human Resource Management Practices
SCM1	0.939	0.437	0.479
SCM2	-0.061	-0.081	0.023

Indicator	Supply Chain Management	MSME Performance	Human Resource Management Practices
SCM3	0.762	0.277	0.227
SCM4	0.070	0.203	-0.011
SCM5	0.933	0.438	0.469
SCM6	0.754	0.420	0.526
MSMEP1	0.431	0.904	0.366
MSMEP2	0.446	0.845	0.393
MSMEP3	0.344	0.788	0.282
MSMEP4	0.357	0.855	0.232
MSMEP5	0.512	0.928	0.341
MSMEP6	0.380	0.800	0.430
HRMP1	0.173	0.032	0.094
HRMP2	0.181	0.214	0.216
HRMP3	0.424	0.314	0.836
HRMP4	0.272	0.216	0.733
HRMP5	0.264	0.134	0.739
HRMP6	0.494	0.418	0.818

Based on the data in Table 1, there are several indicators from the variables supply chain management, MSME Performance, and HRM Practices that are invalid. Therefore, the author conducted a second stage of testing to obtain valid data from each indicator, as shown in Figure 3.

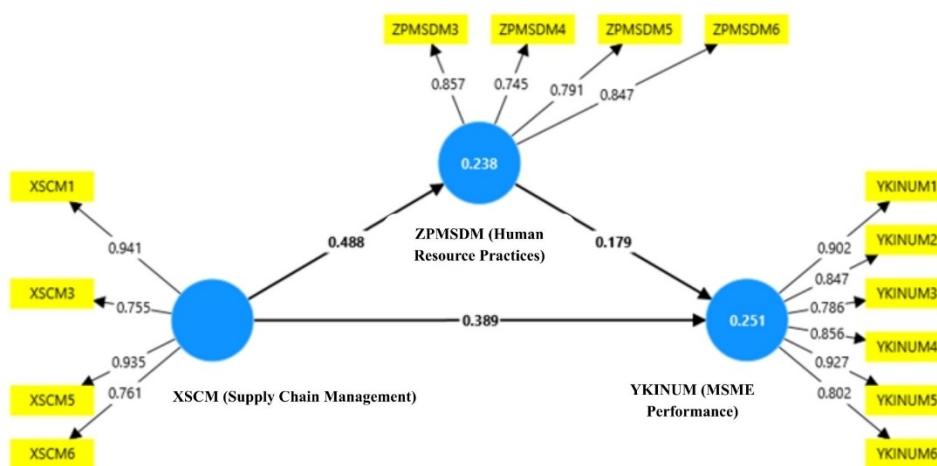


Figure 3. Path Analysis of Direct Influence Model II

Based on the data in Figure 3, it can be seen that all statement indicators from each variable, namely supply chain management, MSME performance, and HRM Practices as mediating variables, are valid and can be continued to the next stage of analysis to see the direct and indirect (mediating) effects.

Table 2. R square

Variable	Value
MSME Performance	0.251
HRM Practices	0.238

Table 2 displays the R-squared value of 0.238, or 23.8%, for the model determinant or the feasibility of the model's influence of HRM practices on MSME performance, 0.251, or 25.1%, for supply chain management, and 76.2% and 74.9% for other variables outside the model. The relationship between the coefficient of determination ( $R^2$ ) of the two aforementioned equations is used to determine the hypothesis model's accuracy based on the study data

$$R^2 \text{ model} = 1 - (1 - R21)(1 - R22) = 1 - (1 - 0.251)(1 - 0.238)$$

$$= 1 - (0.749) (0.762)$$

$$= 1 - 0.571$$

$$= 0.429 \text{ or } 42.9\%$$

The model accuracy calculation result of 42.9% explains that the model's contribution to explaining the causal relationship of all variables studied is sufficient

Table 3. Direct Effects

Description	Original sample (O)	t-statistics ( O/STDEV )	p-values	Notes
Supply Chain Management → MSME Performance	0.389	7.348	0.000	Significant
Supply Chain Management → Human Resource Management Practices	0.488	7.408	0.000	Significant
Human Resource Management Practices → MSME Performance	0.179	2.007	0.045	Significant

SCM significantly affects MSME performance, according to Table 3's results, with a p-value of 0.000, which is less than the 0.05 significance level. This is further corroborated by a t-value of 7.348, which is higher than the critical t-table value of 1.983 and results in the rejection of H0 and the acceptance of H1. These findings indicate that effective SCM implementation contributes meaningfully to improving MSME performance. The regression coefficient supply chain management = 0.389 shows that every unit increase in SCM leads to an increase of 0.389 in MSME performance, meaning that higher MSME performance is associated with higher SCM values. In addition, SCM also has a significant impact on HRM practices, as evidenced by a p-value of 0.000 and a t-value of 7.408, both exceeding the required statistical thresholds. The coefficient Supply Chain Management 0.488 indicates that each unit improvement in SCM increases HRM practices by 0.488, suggesting that better SCM implementation is linked to more effective HRM practices. Furthermore, HRM practices themselves significantly affect MSME performance, with a p-value of 0.045 and a t-value of 2.007, higher than the t-table value of 1.983. The coefficient of human resource management practices, 0.179, shows that each unit increase in HRM practices results in a 0.179 increase in MSME performance, highlighting the crucial role of HRM in enhancing organizational outcomes.

Table 4 demonstrates that SCM not only directly impacts MSME performance but also indirectly contributes through the improvement of HRM practices, ultimately supporting the overall performance of MSMEs. The magnitude of the path coefficients in each variable association is explained by the prior path analysis findings. MSME performance has both direct and indirect ties with this study model. Supply chain management and HRM procedures directly affect MSME performance. Meanwhile, the indirect effect stems from the connection between supply chain management and MSME performance, either directly or indirectly through human resource management techniques. The results of the indirect effect computation are shown in Table 4 for more details.

Table 4. Indirect Effect

Description	Value
Path	Supply Chain Management → HRM Practices → MSME Performance
Original Sample (O)	0.087
t-statistics ( O/STDEV )	1.894
p-values	0.058
Result	Not significant

The information in Table 4 shows that HRM practices do not function as a mediator in the association between SCM and MSME performance. The indirect effect displays a t-statistic of 1.894, which is less than the t-table value of 1.983, and an original sample value of 8.7% with a p-value of 0.058, which is above the 0.05 significance level. These

findings show that there is no statistically significant impact of SCM on MSME performance through HRM practices. As a result, the relationship between SCM and MSME performance is not mediated by HRM practices.

## **DISCUSSION**

The results indicate that SCM exerts a direct, positive, and significant influence on MSME performance in Jayapura City, with a path coefficient of 0.389 ( $p = 0.000$ ). This finding suggests that more effective SCM practices, such as streamlined procurement, inventory management, and distribution, enhance operational efficiency, reduce costs, minimize stockouts, and improve delivery reliability and customer satisfaction. In the context of Jayapura, where geographical isolation and high transportation costs pose persistent logistical challenges, robust SCM enables MSMEs in sectors like culinary, handicrafts, and trade to maintain supply stability through sustained collaboration with suppliers from nearby areas such as Sentani, Keerom, and Nabire. Consequently, these enterprises can respond more swiftly to market fluctuations and expand their reach beyond Papua, thereby boosting overall competitiveness. This outcome aligns with prior empirical studies by Tampubolon and Binangkit (2023) and Dwiantoro (2023), which similarly demonstrate SCM's beneficial impact on MSME performance. Theoretically, the result is underpinned by the Resource-Based View (RBV) of Wernerfelt (1984) and Barney (2001), which posits that valuable, rare, and inimitable resources like integrated supply chain networks contribute to sustained competitive advantage.

SCM also positively and significantly affects human resource management practices (path coefficient 0.488,  $p = 0.000$ ), implying that stronger supply chain operations foster improvements in hiring, training, performance appraisal, and compensation systems. By demanding greater employee skills in coordination, data handling, and adaptability, effective SCM prompts MSMEs to invest in workforce development, ultimately promoting labor competency, discipline, and flexibility. This linkage is supported by Waileruny (2025), who highlighted SCM's role in driving supply chain-oriented training, and Nugroho (2023), who noted enhanced operational and interdepartmental synergy through SCM–HRM integration. From a theoretical standpoint, Heizer et al. (2020) stress the necessity of aligning human resources with supply chain strategies, while Chopra and Meindl (2019) argue that such integration generates cohesive value creation and competitive edge.

Furthermore, human resource management practices exert a positive and significant direct effect on MSME performance (path coefficient 0.179,  $p = 0.045$ ). Well-implemented practices, including targeted recruitment, ongoing training, equitable compensation, fair evaluations, and open communication, correlate closely with elevated productivity, service quality, operational efficiency, and customer satisfaction. In Jayapura's MSME landscape, where workforce quality often limits growth, superior HRM strengthens business sustainability and resilience beyond mere production or marketing strengths. This is consistent with Aini et al. (2022), who linked training and compensation to higher employee productivity, and Sukriani et al. (2023), who showed that enhanced knowledge, skills, and abilities positively influence performance. Theoretically, Dessler (2020) underscores how strategic HRM builds employee commitment and advantage, while Sisca et al. (2020) highlight the value of aligning HRM with broader organizational goals.

Notably, human resource management practices do not significantly mediate the relationship between SCM and MSME performance (indirect effect 0.087,  $p = 0.058$ ,  $t = 1.894$ ). Although the  $p$ -value approaches the 0.05 threshold and the indirect path is positive, it falls short of statistical significance, indicating that HRM does not effectively channel SCM's benefits into performance gains. This suggests limited integration between supply chain strategies and HR systems in Jayapura's MSMEs, where supply chain advancements often occur without commensurate workforce upskilling or professional HR support. The finding echoes Linda et al. (2022) and Karman et al. (2022), who observed that SCM's positive effects weaken absent strong organizational and HR

capabilities. Heizer et al. (2020) further explain that SCM success hinges on employees' execution proficiency, and Armstrong and Taylor (2023) emphasize HRM's role in enabling strategy realization. The borderline result may partly stem from the sample size constraining the power to detect smaller indirect effects, or from context-specific barriers such as restricted access to training and a nascent professional work culture in the region.

While SCM remains the primary direct driver of MSME performance improvement, its full potential is constrained by underdeveloped HRM integration. These insights carry important practical implications for stakeholders in Jayapura. MSME owners should prioritize aligning HR initiatives, such as supply-chain-focused training programs, performance incentives tied to operational metrics, and cross-functional coordination, with SCM objectives to amplify indirect benefits and achieve more holistic gains. Policymakers and local development agencies could support targeted interventions, including subsidized training workshops, mentorship for HR formalization, and logistics-HR linkage programs, to foster stronger synergies and enhance MSME competitiveness and sustainability in Papua's challenging economic environment.

## **CONCLUSION**

This study concludes that supply chain management has a positive and significant effect on MSME performance and human resource management practices in Jayapura City. Effective supply chain implementation, such as efficient procurement, inventory control, distribution management, and supplier relationships, directly improves business performance while also encouraging better human resource management practices. In addition, human resource management practices have a positive and significant effect on MSME performance, indicating that well-managed human resources contribute to higher productivity, efficiency, innovation, and competitiveness.

However, the findings also reveal that human resource management practices do not significantly mediate the relationship between supply chain management and MSME performance. This indicates that although both SCM and HRM independently influence performance, HRM has not yet functioned optimally as a mechanism to strengthen the indirect impact of SCM. This condition reflects limitations in human resource capacity, professionalism, and the lack of integration between supply chain strategies and human resource management at the operational level of MSMEs.

These results imply that MSME performance improvement in Jayapura City is still driven mainly by direct supply chain management implementation rather than through HRM mediation. Therefore, strengthening human resource competencies through targeted training, improved coordination, and incentive systems aligned with supply chain objectives is essential. Future research is encouraged to explore additional mediating or moderating variables and to examine more specific dimensions of human resource management to better explain the relationship between supply chain management and MSME performance.

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