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A slack-based MSME development model: a strategic solution to improve business performance and growth

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Abstract: This study investigates how resource slack supports logistics-dependent business systems and influences organizational performance and growth in manufacturing SMEs operating in supply and distribution environments. It specifically examines the mediating roles of organizational resilience and sustainable logistics innovation, as well as the moderating roles of organizational learning and logistics resources. A quantitative research approach was employed, with data collected from 100 manufacturing SMEs operating in resource-constrained yet logistics-intensive environments. Structural equation modeling (SEM) was used to analyze both the direct and indirect effects of resource slack on organizational performance and growth. The results reveal that resource slack positively affects organizational performance both directly and indirectly through sustainable logistics innovation, while its indirect effect through organizational resilience is rejected. Sustainable logistics innovation is shown to be a key driver of business growth by leveraging slack resources for eco-efficient packaging, transport optimization, and distribution agility. Moreover, organizational learning strengthens the effect of resource slack on organizational resilience, while logistics resources amplify the effect of resource slack on sustainable logistics innovation. These findings suggest that SME managers should strategically manage slack resources such as production buffers, warehouse capacity, and supplier relationships to enhance resilience and foster sustainable logistics innovation. This study uniquely integrates slack theory, logistics resource configuration, and sustainability-oriented innovation to explain how SMEs convert slack into competitive advantage under logistics constraints.

1 Introduction

The external environment plays a critical role in shaping the direction and success of small and medium-sized enterprises (SMEs). Factors such as economic conditions, government regulations, technological changes, and socio-cultural trends significantly influence organizational survival and growth [1-3]. Within this context, organizational performance has become one of the most extensively studied dependent variables in management and strategy research [4]. To achieve better performance, SMEs must strategically optimize their resources to align with external demands while maintaining operational flexibility [3]. Choosing the right strategy becomes essential for navigating dynamic environments and achieving business goals [5,6].

From the perspective of the resource-based view [7,8], slack resources can provide the flexibility necessary for SMEs to adapt to change, realign operations, and sustain growth. Slack resources, which is defined as the pool of organizational resources available for redeployment [9], have been shown to support resilience, which enable firms to withstand unexpected disruptions while maintaining stability. In logistics-intensive sectors, such slack may manifest as buffer inventory, extra warehouse capacity, supplier redundancy, or excess transportation capability. These resources provide room for continuous improvement, innovation, and rapid response, especially during periods of turbulence [10].

However, slack resources may also create inefficiencies if not strategically managed [11,12]. Underutilized resources can increase operating costs without adding commensurate value, thereby reducing profitability. SMEs that become complacent with abundant slack may fail to remain responsive to market changes or evolving customer needs.

Furthermore, a lack of pressure to innovate can result in stagnation and weak competitiveness. Prior studies have highlighted that business growth is strongly tied to organizational performance [13], and that complementary factors such as organizational learning and intangible assets play important roles in maximizing the benefits of slack [14]. Organizational learning enhances a firm's capacity to absorb knowledge and adapt to change, while logistics resources, such as supplier relationships and technological capabilities enable firms to generate long-term value.

In the logistics-dependent manufacturing SME sector, slack resources take on particular importance. Limited slack can restrict the ability of firms to innovate in logistics operations [15], adopt digital tools, or expand distribution capacity, while strategic slack utilization can drive resilience and growth [16]. Sustainable logistics innovation, for example, enables SMEs to transform slack resources into eco-efficient practices such as optimized transport routing, green packaging, or reduced energy use in warehouses [9]. Similarly, logistics resources, including IT systems, supplier networks, and relational capital, can amplify the benefits of slack and support sustainable competitiveness [17].

Despite increasing interest in SME resilience and innovation, empirical research integrating resource slack with logistics capability development and sustainable logistics innovation remains limited [18], particularly in manufacturing industry in emerging countries. Existing studies typically examine slack in general strategic or financial terms, without explicitly considering how slack supports logistics flows, supply-chain responsiveness, and eco-efficient distribution systems in SMEs [1,6]. Furthermore, very few studies explore the simultaneous roles of organizational resilience and sustainable logistics innovation as mediating mechanisms, or examine how logistics resources and organizational learning conditions amplify the productivity of slack resources [9,10]. This creates a significant knowledge gap regarding how and when slack becomes an enabler of logistics-based competitive advantage. To address this gap, this study proposes an integrated slack–resilience–logistics innovation framework for manufacturing SMEs operating in logistics-intensive environments. Focusing on SMEs in Bekasi and Cirebon, two major industrial logistics corridors in Indonesia, this research examines how slack resources are transformed into logistics capability, distribution agility, and sustainable performance outcomes, moderated by learning orientation and logistics resource strength. By combining the resource-based view with sustainable logistics and resilience perspectives, this study advances theory by positioning slack not merely as excess resources, but as strategic logistics capital that can catalyze innovation, supply-chain continuity, and long-term growth in resource-constrained SMEs.

2 Literature review

2.1 Resource-based view

As stated by [8], resources in an organization include all owned assets, including capabilities, attributes, information, knowledge, and so on. [19] defines them as tangible and intangible assets that are semi-permanently tied to an organization. [20] emphasizes that organizational resources represent important potential in improving business performance and supporting sustainable growth. From the RBV perspective, resource slack can be viewed as potential that can be transformed into competitive advantage. [21] explain that slack is an actual resource surplus that allows an organization to adapt to pressures and adjust to external conditions. As strategic thinking develops, knowledge and logistics-related capabilities are increasingly recognized as critical resources in achieving organizational performance. Thus, the RBV approach is used in this study because it highlights the importance of internal resources owned by the organization, including slack resources and logistics resources, which can provide additional flexibility and capacity to face change. These resources enable SMEs to take advantage of strategic opportunities to improve business performance, strengthen organizational resilience, and foster sustainable logistics innovation [8,19].

2.2 Resource slack and organizational performance

[21] define slack as the collection of company resources that exceed the minimum amount needed to produce a given level of output. These excess resources can be either utilized or left unused, depending on organizational needs [12]. Slack can take the form of excess financial, human, material, or technological resources, which may be mobilized to support operational activities. In logistics-dependent SMEs, slack may manifest as inventory buffers, unused production capacity, additional warehouse space, or excess supplier networks that can be strategically allocated to meet market demands. Resource slack provides organizations with the ability to cope with change and adapt to environmental uncertainty [22]. Slack can also motivate managers to reallocate resources and pursue initiatives that enhance performance. By enabling firms to explore new opportunities and strengthen resilience, slack supports long-term competitiveness and sustainable performance [10]. [20] emphasized that slack provides flexibility to address unexpected changes and redirect the organization toward more advantageous directions. Overall, slack allows SMEs to increase responsiveness to market changes, strengthen innovation capacity, reduce operational risks, and improve overall business outcomes. In logistics-dependent contexts, these benefits extend to enhanced supply chain responsiveness, delivery reliability, and customer satisfaction. These arguments provide the basis for the following hypothesis:

H1. Resource Slack is positively correlated with organizational performance.

2.3 The mediating role of sustainable logistics innovation

From the RBV perspective, organizations with greater resources are often considered superior to those with fewer resources [8]. Scholars argue that slack resources can protect organizations by providing flexibility in operations, which in turn enhances performance and supports innovation [11]. [16] highlight that slack is crucial for organizational sustainability because it creates space for experimentation. For example, when firms have surplus capacity, skilled employees, or financial reserves, they can allocate a portion of these resources toward innovative projects or process improvements. In logistics-dependent SMEs, resource slack is particularly important for enabling sustainable logistics innovation. Excess resources can be directed toward eco-efficient practices such as adopting green packaging, optimizing transport routes, reducing energy consumption in warehousing, or implementing digital tracking systems. Such initiatives not only strengthen environmental performance but also improve cost efficiency and responsiveness to customer needs. [23] further notes that slack resources allow organizations to invest in innovative practices, ultimately enhancing overall performance. Therefore, sustainable logistics innovation acts as a key mechanism through which resource slack contributes to organizational performance. By channeling slack into logistics-oriented innovations, SMEs can achieve both operational efficiency and long-term competitiveness.

H2. Sustainable logistics innovation mediates the relationship between resource slack and organizational performance.

2.4 The mediating role of organizational resilience

Slack resources within an organization can serve as a reserve asset for the organization to face threats in the business environment. Slack resources can form a significant internal organizational strength, increase operational flexibility and capacity to adapt to change, thereby strengthening organizational resilience [21]. As stated by [21], slack is a collection of resources within an organization that exceeds the minimum required and can be used to improve organizational performance by increasing resilience. [10] state that slack resources function as a reliable buffer to face changes in the business environment and uneven performance flexibility. Furthermore, slack also allows organizations to experiment with innovation without sacrificing operational stability [11]. By leveraging available resources, organizations can increase flexibility and adaptability, ultimately influencing organizational resilience in facing challenges and strengthening organizational performance. Organizational resilience emerges as a determining factor that can optimize organizational performance. Resilient organizations are able to identify, allocate, and utilize available resources effectively in facing challenges. With strong resilience, organizations are not only able to maintain operations during times of crisis but also able to innovate and adapt, thereby improving overall performance.

H3. Organizational resilience mediates the relationship between resource slack and organizational performance.

2.5 Organizational performance and business growth

From a strategic management perspective, the relationship between organizational performance and business growth is a mutually reinforcing one. As stated by [24], superior performance is not only an indicator of success but also a key driver that enables a business to grow sustainably. Organizational performance refers to how effectively an organization meets its goals and objectives [25]. Organizational performance encompasses various aspects, including financial performance, operational efficiency, employee engagement, customer satisfaction, and overall strategic alignment. High organizational performance is required to maintain business growth, as it directly influences the firm's ability to compete. Performance is defined as a set of indicators, both financial and non-financial, which contain information regarding goal achievement and results [4]. He also states that organizational performance encompasses various aspects, including financial performance, operational efficiency, employee engagement, customer satisfaction, and overall strategic alignment. High organizational performance is crucial for sustaining business growth because it directly impacts a company's ability to compete in the market. Performance is defined as a set of indicators, both financial and non-financial, that provide information on the achievement of goals and outcomes. [26] state that organizational performance is the foundation that can determine the direction and success in driving business growth.

H4. Organizational performance has a positive influence on business growth.

2.6 Moderating role of organizational learning and logistics resources

As the business environment changes and competition intensifies, organizations are increasingly aware of the importance of resilience for their survival and growth. In dynamic environments, sufficient resource reserves provide firms with the ability to adapt and endure. From the perspective of the resource-based view, the presence of slack resources enables organizations to engage in learning. Slack provides additional capacity that can be allocated to developing new knowledge, skills, and capabilities [9]. [27] classifies organizational learning into exploitative and explorative modes. Explorative learning encompasses search, risk-taking, and flexibility, while exploitative learning emphasizes refinement, efficiency, and incremental improvement. As a dynamic process, organizational learning allows organizations to continuously adapt based on accumulated knowledge and experience, thereby strengthening their rresilience. In logistics-dependent SMEs, organizational learning is particularly important for developing capabilities such as supply chain coordination, process redesign, and adoption of sustainable logistics practices. This learning capacity strengthens the

relationship between slack resources and organizational resilience by leveraging new ideas, supporting innovation, and improving operational efficiency.

H5a. Organizational learning moderates the relationship between resource slack and organizational resiilience, such that the relationship is stronger when organizational learning is high.

[28] emphasized in the strategy literature that resources and capabilities are crucial for building superior performance. In logistics-intensive contexts, logistics resources, such as transportation infrastructure, warehousing capacity, IT systems, supplier and customer relationships, and distribution networks, represent critical capabilities for achieving competitive advantage [17]. These resources not only support operations but also enhance the ability of firms to convert slack into meaningful outcomes. When SMEs possess strong logistics resources, they are better able to channel slack into sustainable logistics innovation [9]. For example, firms with advanced inventory management systems or robust supplier partnerships can use excess capacity to introduce eco-efficient processes, optimize delivery routes, or reduce waste in production and distribution. [23] noted that resource advantages amplify the impact of slack, making it more likely to translate into innovation and performance gains. Therefore, logistics resources serve as strategic enablers that strengthen the connection between slack and sustainable innovation.

H5b. Logistics resources moderate the relationship between resource slack and sustainable logistics innovation, such that the relationship is stronger when logistics resources are high.

Based on the previous studies that have been presented, the model of this research is proposed as follows.

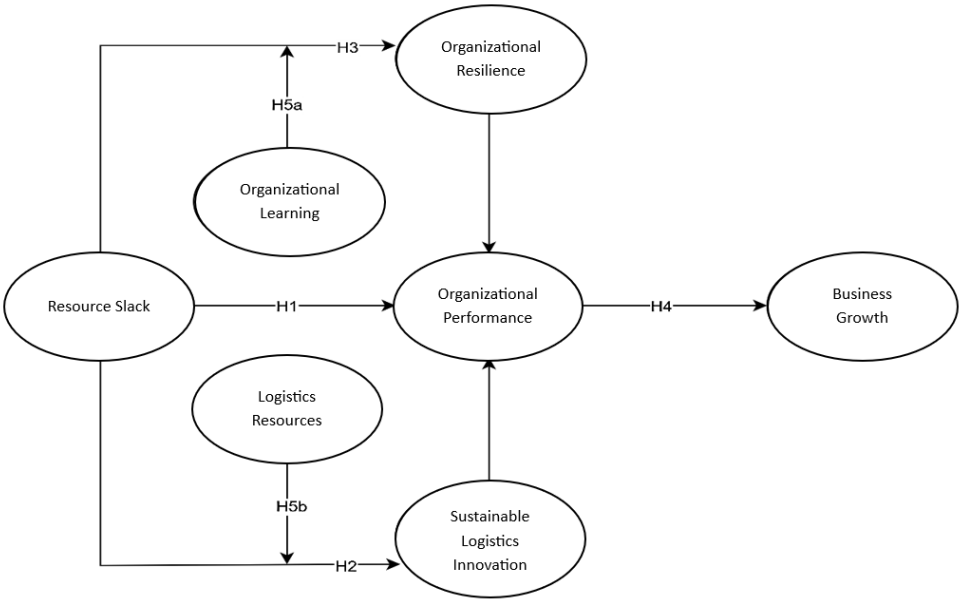

Figure 1 Research model

3 Methodology

3.1 Research design

This study employs a quantitative research design to examine the influence of resource slack on organizational performance and business growth, with organizational resilience and sustainable logistics innovation as mediators, and organizational learning and logistics resources as moderators. Structural Equation Modeling with Partial Least Squares (SEM–PLS) was used to test the hypothesized relationships, as this method is suitable for predictive analysis, complex moderation–mediation models, and exploratory research contexts with relatively small samples. Compared to covariance-based SEM (e.g., AMOS), PLS-SEM was selected due to its robustness for models emphasizing variance explanation and theory development rather than confirmatory fit testing.

The population of this study consists of manufacturing SMEs operating in Bekasi and Cirebon, Indonesia. These SMEs were selected because of their significant dependence on logistics and distribution activities for competitiveness. Respondents were purposively chosen to ensure they met the criteria of (1) being classified as small or medium enterprises according to Indonesian regulations, and (2) engaging in logistics-dependent operations such as supply chain coordination, distribution, or transport-related activities. A total of 100 valid responses were collected and used for analysis.

Data were collected using a structured questionnaire distributed to SME owners and managers. The questionnaire included items measuring resource slack, organizational resilience, sustainable logistics innovation, organizational

learning, logistics resources, organizational performance, and business growth. Responses were recorded on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Data were analyzed using SEM–PLS with SmartPLS software. The analysis included evaluating the measurement model (validity and reliability of constructs) and the structural model (hypotheses testing through path coefficients, t-statistics, and R^2 values).

3.2 Variable Measurement

The measurement of variables in this study was adapted from established scales in previous research. Resource slack was measured through indicators reflecting excess capacity, financial reserves, human resource flexibility, and inventory buffers, drawing on the works of [21]. Organizational resilience and organizational performance was evaluated through the indicators developed by (Essuman et al., 2022. To capture sustainable logistics innovation, items were developed to evaluate eco-efficient packaging, energy-saving transport practices, optimized routing, and the reduction of logistics waste, consistent with [16,23]. Organizational learning was measured by incorporating both exploitative and explorative learning processes, such as efficiency improvement, experimentation, and flexibility, based on [27,30]. Logistics resources were measured using indicators related to IT systems, supplier and customer networks, transportation and warehousing capabilities, and distribution infrastructure, in line with [17,28]. Finally, business growth was assessed through measures of revenue growth, market expansion, and increased customer base, following [3].

4 Results and discussion

4.1 Respondents' characteristics

The respondents in this study were drawn from SMEs operating in sectors that are highly dependent on logistics and distribution activities. As shown in Table 1, the majority were engaged in food and beverage (36%), handicraft (21%), and fashion (18%), all of which represent manufacturing-oriented industries with significant reliance on supply chain management, packaging, and distribution to reach domestic and international markets. Other respondents were from agribusiness (8%), which involves perishable goods requiring efficient transport and storage systems, and from creative product (10%) and digital-enabled SMEs (with physical product distribution (8%), which, while less manufacturing-intensive, also rely on logistics processes such as distribution of products, digital platforms, and supporting materials.

Table 1 Respondent profile

	Category	Total	Percentage
Type of Industry	Food and Beverage (Manufacturing)	90	36%
	Craft & Artisan Products (Manufacturing)	52	21%
	Fashion & Apparel Production	44	18%
	Digital-enabled SMEs (with physical product distribution)	19	8%
	Agribusiness Processing & Distribution	21	8%
	Creative Product	24	10%
Years of Business Establishment	5 – 10 Years	93	37%
	10 – 15 Years	74	30%
	15 – 20 Years	50	20%
	More than 20 Years	33	13%
Number of Employees	10 – 15 Employees	123	49%
	15 – 20 Employees	96	38%
	25 – 30 Employees	31	12%
Annual Income	100.000.000 – 500.000.000 (IDR)	175	70%
	More than 500.000.000 (IDR)	75	30%

Most of the SMEs had been established between 5-15 years (67%), indicating a relatively mature stage of business development. In terms of firm size, nearly half employed 10-15 workers (49%), with another 38% employing 15-20 workers, consistent with Indonesia's SME classification. Annual income data show that 70% earned between IDR 100,000,000-500,000,000, while 30% reported more than IDR 500,000,000. This profile confirms that the majority of respondents were logistics-dependent manufacturing SMEs that face challenges of resilience, innovation, and competitiveness in dynamic market environments.

4.2 Outer model evaluation

Based on the results of the validity and reliability tests, the construct results show an Outer Loading value above 0.7, meeting the recommended threshold for good indicator validity [31]. The AVE (Average Variance Extracted) value for all variables is above 0.5, indicating that more than 50% of the indicator variance is explained by the related construct,

thus achieving convergent validity [32]. Furthermore, the Composite Reliability (CR) value for all variables is higher than 0.7, indicating good internal consistency. In addition, the Cronbach's Alpha and rho_A values are also above 0.7 for all constructs, indicating adequate reliability. Overall, these results indicate that all research variables meet the requirements for validity and reliability.

Table 2 Results of validity and reliability test

Variable	Item	Indicators Outer Loading	AVE	C.R	rho_A	Cronbach's Alpha
Resource Slack	RS1	0.771	0.632	0.873	0.804	0.777
	RS2	0.814				
	RS3	0.792				
	RS4	0.802				
Sustainable Logistics Innovation	SLI1	0.782	0.695	0.901	0.853	0.853
	SLI2	0.871				
	SLI3	0.875				
	SLI4	0.801				
Organizational Resilience	OR1	0.798	0.674	0.892	0.892	0.839
	OR2	0.802				
	OR3	0.839				
	OR4	0.845				
Organizational Learning	OL1	0.734	0.554	0.861	0.861	0.799
	OL2	0.729				
	OL3	0.744				
	OL4	0.770				
	OL5	0.745				
Logistics Resource	LR1	0.718	0.637	0.925	0.925	0.905
	LR2	0.831				
	LR3	0.817				
	LR4	0.804				
	LR5	0.830				
	LR6	0.858				
	LR7	0.718				
Organizational Performance	OP1	0.802	0.618	0.936	0.936	0.884
	OP2	0.798				
	OP3	0.756				
	OP4	0.775				
	OP5	0.785				
	OP6	0.789				
	OP7	0.790				
	OP8	0.810				
	OP9	0.767				
Business Growth	BG1	0.767	0.603	0.820	0.820	0.795
	BG2	0.799				
	BG3	0.763				

Table 3 Discriminant validity with Fornell-Larcker criterion

	BG	LR	OL	OP	OR	RS	SLI
BG	0.745						
LR	0.540	0.798					
OL	0.471	0.521	0.745				
OP	0.733	0.583	0.506	0.725			
OR	0.455	0.507	0.672	0.546	0.821		
RS	0.368	0.330	0.477	0.360	0.578	0.772	
SLI	0.436	0.476	0.665	0.487	0.816	0.630	0.833

Based on the results of the discriminant validation test using the Fornell-Larcker criteria, each construct meets the discriminant validation requirements because the square root value of AVE (diagonal value) of each construct is greater

than the correlation between constructs (off-diagonal value). For example, the AVE value of Business Growth (BG) of 0.745 is greater than its correlation with other variables such as Logistics Resources (LLR) (0.540) and Organizational Performance (OP) (0.733). This indicates that each construct is more correlated with its own indicators than with other constructs, thus meeting the discriminant validation criteria. Thus, each variable in this model is considered sufficiently distinguishable from other variables.

Table 4 Heterotrait-Monotrait (HTMT)

	BG	LR	OL	OP	OR	RS	SLI
BG							
LR	0.726						
OL	0.688	0.601					
OP	0.761	0.640	0.602				
OR	0.632	0.561	0.816	0.631			
RS	0.520	0.367	0.590	0.422	0.695		
SLI	0.596	0.524	0.801	0.556	0.213	0.287	

The results of the HTMT (Heterotrait Monotrait) test show that all HTMT values between constructs are below the recommended threshold of 0.85 for good discriminant validity [33]. For example, the HTMT value between Business Growth (BG) and Logistics Resources (IR) is 0.726, and between Organizational Learning (OL) and Organizational Resilience (OR) is 0.816, both of which are still within acceptable limits. Since no HTMT value exceeds 0.85, this indicates that each construct in this model can be well distinguished from the others, thus achieving discriminant validity.

Table 5 Inner VIF multicollinearities

	BG	LR	OL	OP	OR	RS	SLI
BG							
LR							1.143
OL					1.294		
OP	1.000						
OR				3.556			
RS				1.677	1.337		1.177
SLI				3.923			

The results of the Inner Variance Inflation Factor (VIF) test show that all VIF values are below the recommended threshold of 5.0, except for the relationship between Sustainable Logistics Innovation (SI) and Organizational Resilience (OR) which has a VIF value of 3.923 and 3.556 but is still within acceptable limits [31]. The VIF value indicates that there is no significant multicollinearity problem in the model, meaning that no independent constructs are highly correlated with each other. For example, the VIF value for Resource Slack (RS) against Organizational Resilience (OR) is 1.677 which is still relatively low, indicating low multicollinearity and independent variables do not interfere with each other. Overall, multicollinearity in this model does not interfere with the quality of the estimation results.

4.3 Inner model evaluation

The R Square test results show that the variables Business Growth (BG), Organizational Performance (OP), Organizational Resilience (OR), and Sustainable Logistics Innovation (SI) have varying values. The R Square of 0.537 for Business Growth indicates that 53.7% of the variation in Business Growth can be explained by Organizational Performance. This value is classified as moderate [31]. The R Square for Organizational Performance of 0.302 indicates that 30.2% of the variation in Organizational Performance is explained by the model, which is classified as a weak to moderate influence. Meanwhile, OR has an R Square value of 0.539 which indicates a moderate influence with 53.9% of the variation in Organizational Resilience explained by other variables. Finally, Sustainable Logistics Innovation has an R Square value of 0.508 which indicates that 50.8% of the variation in Sustainable Innovation can be explained by the model. Overall, these results indicate that the model has moderate predictive ability towards the dependent variable, in accordance with the accepted threshold in the PLS-SEM model.

Table 6 R square

	R Square	R Square Adjusted
Business Growth	0.537	0.535
Organizational Performance	0.302	0.294
Organizational Resilience	0.539	0.534
Sustainable Logistics Innovation	0.508	0.502

Table 7 Q square

	SSO	SSE	Q^2(=1-SSE/SSO)
Business Growth	753.000	537.322	0.286
Organizational Performance	2259.000	1925.751	0.148
Organizational Resilience	1004.000	652.265	0.350
Sustainable Logistics Innovation	1004.000	671.322	0.331

The Q Square (Q^2) test results show the model's predictive ability. Based on the Q^2 value, Business Growth (BG) has a Q^2 value of 0.286, indicating that the model has moderate predictive ability for this variable [31]. For Organizational Performance (OP), a Q^2 value of 0.148 indicates weak predictive ability. Meanwhile, Organizational Resilience (OR) has a Q^2 value of 0.350, indicating a fairly strong prediction. Lastly, Sustainable Logistics Innovation (SLI) shows moderate predictive ability with a Q^2 value of 0.331. In general, a Q^2 value above 0 indicates that the model has predictive relevance, where a value between 0.02 and 0.15 indicates weak prediction, 0.15 and 0.35 indicates moderate prediction, and above 0.35 indicates strong prediction.

Table 8 Results of Hypothesis Test

Hypothesis	Path	Beta	T-Value	Sig.	Decision
H1	RS → OP	0.554	6.774	0.000	Accepted
H2	RS → SLI → OP	0.329	5.711	0.000	Accepted
H3	RS → OR → OP	0.051	1.064	0.324	Not Accepted
H4	OP → BG	0.733	27.809	0.000	Accepted
H5a	RS x OL → OR	0.438	7.840	0.000	Accepted
H5b	RS x LR → SLI	0.169	3.767	0.000	Accepted

The results of the hypothesis testing indicate that most hypotheses are accepted with a high level of significance. H1 tests the relationship between resource slack (RS) and organizational performance (OP) with a beta value of 0.554 and a T value of 6.774, indicating a significant positive influence ($p < 0.001$). H2 shows that sustainable logistics innovation (SLI) mediates the relationship between RS and OP with a beta of 0.329 and a T-value of 5.711 ($p < 0.001$). However, H3 which tests the mediation of organizational resilience (OR) is not significant (T-value 1.064, $p > 0.05$), so the hypothesis is rejected. H4, the relationship between organizational performance and business growth (BG), is highly significant with a beta of 0.733 and a T-value of 27.809. The moderating role of organizational learning (OL) in H5a is significant with a beta of 0.438 and a T-value of 7.840, and the moderating role of logistics resources (LR) in H5b is significant with a beta of 0.169 and a T-value of 3.767 supporting the argument that organizational learning and logistics resources strengthen the relationship between RS and innovation outcomes, as well as organizational resilience.

4.4 Discussion

This study employs the RBV approach of [8,20] to examine the influence of resource slack on organizational performance and its impact on business growth by considering the mediating roles of sustainable logistics innovation and organizational resilience. It further examines the moderating roles of organizational learning and logistics resources. Consistent with prior studies, resource slack can act as a reserve that enables organizations to innovate, adapt to environmental changes, and improve operational efficiency, ultimately contributing to SME performance [12]. The findings of this study support those of [10], who argued that unused resources can be leveraged to improve efficiency and innovation, thereby enhancing overall performance (H1). In the case of logistics-dependent SMEs, slack takes the form of unused production capacity, reserve funds, or underutilized labor, which can be mobilized to strengthen supply chain responsiveness, packaging, and distribution processes. Based on these findings, SMEs that manage slack effectively are able to optimize logistics and internal processes, ultimately improving competitiveness and performance. The results further indicate that sustainable logistics innovation mediates the relationship between resource slack and organizational performance (H2). As [16] suggest, slack is a valuable antecedent of sustainable innovation. When slack is directed toward eco-efficient logistics practices such as optimized transportation, waste reduction, or green packaging, it enhances operational performance while supporting sustainability goals. In other words, slack resources allow SMEs to experiment with logistics process improvements that translate into performance gains. However, excessive slack may sometimes reduce the pressure to innovate, leading to complacency. This finding reflects the dual role of slack: while it creates opportunities for sustainable logistics innovation, it must be strategically managed to avoid inefficiency.

Contrary to expectations, the results show that organizational resilience does not strongly mediate the relationship between resource slack and organizational performance (H3). This differs from prior research, such as [10], which found resilience to be a strong pathway. In this study, slack itself appears sufficient to directly enhance organizational performance without relying on resilience as a mediator. This suggests that manufacturing SMEs with adequate slack can

adapt effectively to disruptions and restore operations without necessarily developing resilience as an intermediary capability. As [9] noted, absorbed slack—such as reserve funds or additional workforce capacity—can directly support flexibility and responsiveness, reducing the need for resilience to act as a primary channel.

The study also confirms that organizational performance has a significant impact on business growth (H4). This finding supports prior work suggesting that SMEs that exploit opportunities in the external environment are more likely to achieve growth [29]. High performance allows firms to leverage new technologies, strengthen logistics partnerships, and respond to market changes with agility, thereby driving business expansion. The results align with [26] and [34], who emphasized that organizational performance includes both financial and non-financial aspects, which collectively foster sustainable business growth.

Finally, this study highlights the moderating roles of organizational learning and logistics resources (H5a and H5b). The results show that organizational learning strengthens the impact of resource slack on organizational resiilience. Through learning, SMEs can transform slack into valuable logistics and operational improvements. Continuous learning enables firms to analyze logistics bottlenecks, adopt digital supply chain tools, and implement adaptive distribution strategies. This finding reinforces the importance of learning as a dynamic capability that allows firms to adapt, innovate, and strategically reallocate slack.

Similarly, logistics resources emerge as an important moderator of the relationship between slack and sustainable logistics innovation. SMEs with well-developed logistics resources such as transportation systems, warehousing capacity, supplier relationships, and IT platforms, are more effective in channeling slack into innovative logistics practices. These resources provide the infrastructure and networks necessary for slack to translate into green and efficient logistics solutions. Consistent with [23], this study confirms that resources enhance the effectiveness of slack by enabling its conversion into sustainable logistics innovation. Therefore, logistics resources serve as a crucial capability that amplifies the strategic value of slack and strengthens SME competitiveness.

5 Conclusion

Although the relationship between organizational performance and business growth has been widely examined in the literature, this study highlights the importance of specific logistic drivers, namely resource slack, sustainable logistics innovation, organizational resilience, organizational learning, and logistics resources, that play a crucial role in strengthening SME performance and driving business growth. The findings underscore that in logistics-intensive environments, the strategic management of slack resources supports smoother material, information, and distribution flows, allowing firms to remain agile and competitive. By leveraging slack resources, SMEs can achieve greater flexibility in adapting to market dynamics, while also fostering innovation and resilience that ultimately encourage growth. This study concludes that effective slack utilization, sustainable logistics innovation, and learning capabilities are essential for enhancing performance and sustaining competitiveness in supply chain industries.

From a theoretical standpoint, this study enriches the resource-based view (RBV) by demonstrating that slack resources should not only be seen as buffers in uncertain conditions but also as enablers of sustainable logistics innovation, resilience, and growth. These findings extend RBV by showing how slack resources, when combined with logistics resources (e.g., warehousing capacity, transportation assets, supplier relationships, and IT-enabled logistics systems) and organizational learning, can be transformed into dynamic capabilities that sustain performance in logistics-dependent SMEs.

The study also carries important practical implications. SME managers should recognize that resource slack such as excess capacity, inventory buffers, or reserve funds can be strategically redirected to improve logistics operations and foster sustainable innovation. Strengthening organizational learning and investing in logistics resources, including IT systems, warehousing, and supplier networks, will allow firms to convert slack into tangible performance improvements. Policymakers and SME support institutions should also design interventions that help firms build logistics capabilities and resilience, as these are critical foundations for competitiveness and sustainable growth in manufacturing sectors.

Finally, this study has several limitations that open avenues for future research. The research was conducted with a specific sectoral sample of manufacturing SMEs in Indonesia, which may limit generalizability to other industries or regions. Future studies could explore additional industries, apply longitudinal or mixed-method designs, or examine complementary constructs such as digital supply chain readiness, logistics technology adoption, circular supply chain practices, and logistics policy support. Such research would provide more comprehensive insights into how SMEs can leverage slack resources to thrive in dynamic and logistics-intensive environments.

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