talenta PUBLISHER

Jurnal Sistem Teknik Industri
Journal homepage: **https://talenta.usu.ac.id/jsti**

Bobabox SME Development Strategy Based on the Influence of Supply Chain Resilience Variables on Company Performance

Dhede Pristi Afrinda*[1], Nazaruddin[1], Juliza Hidayati[1]
[1]*Industrial Engineering Department, Faculty of Engineering, Universitas Sumatera Utara, Jln. Dr. T. Mansyur No. 9 Padang Bulan, Medan, 20222, Indonesia*
*Corresponding Author: dhedepristia@gmail.com

ARTICLE INFO

Article history:
Received 24 September 2025
Revised 17 November 2025
Accepted 24 November 2025
Available online 26 November 2025

E-ISSN: 2527-9408
P-ISSN: 1411-5247

How to cite:
D. P. Afrinda, Nazaruddin, and J. Hidayati, "Bobabox SME development strategy based on the influence of supply chain resilience variables on company performance," *J. Sist. Tek. Ind.*, vol. 27, no. 4, pp. 308–319, Nov. 2025.

http://doi.org/10.32734/register.v27i1.idarticle

ABSTRACT

Supply chain resilience refers to the capacity of a supply chain to develop adequate responsiveness, readiness, and recovery strength so it can handle risks and disruptions and restore its operations to their previous condition or achieve an even better state. Bobabox faced challenges such as fluctuating sales, the closure of six outlets, shifting customer demand, and increasing competition. This study involved 81 boba drink outlets in Medan using purposive sampling. Data were collected through questionnaires and an interview with the Bobabox CEO, then analyzed using Smart-PLS 4 to test relationships between variables. SWOT and QSPM methods were applied to formulate strategies. The findings show that supply chain resilience significantly influences company performance. The IE matrix placed Bobabox in quadrant V (hold and maintain), suggesting that the company should preserve its current market position and focus on efficiency rather than aggressive expansion. The study identified 11 internal factors (IFE score: 2.73636) and 8 external factors (EFE score: 2.67857). The SWOT matrix produced nine alternative marketing strategies. Based on the QSPM results, the most recommended strategy is reducing supplier dependency through multi-sourcing to mitigate geopolitical risks (W2, T3).
Keywords: supply chain resilience, company performance, PLS SEM, SWOT, QSPM

ABSTRAK

Ketahanan rantai pasokan merupakan kemampuan untuk membangun respons, kesiapan, dan pemulihan dalam menghadapi risiko dan gangguan sehingga rantai pasok dapat kembali ke kondisi awal atau lebih baik. Bobabox menghadapi masalah penjualan fluktuatif, penutupan enam outlet, perubahan permintaan pelanggan, dan persaingan ketat. Penelitian ini mencakup 81 gerai boba di Medan melalui teknik purposive sampling. Data dalam perhitungan diperoleh melalui kuesioner yang disebar serta wawancara dengan CEO Bobabox, lalu dianalisis menggunakan Smart-PLS 4. Penyusunan strategi dilakukan dengan metode SWOT dan QSPM. Berdasarkan hasil penelitian, diperoleh bahwa ketahanan rantai pasok berpengaruh terhadap kinerja perusahaan. Matriks IE digunakan untuk menentukan posisi perusahaan dan menjadi dasar dalam merumuskan alternatif strategi pemasaran melalui SWOT. Bobabox memiliki 11 faktor internal (skor IFE 2,73636) dan 8 faktor eksternal (skor EFE 2,67857). Posisi perusahaan berada pada kuadran V (hold and maintain), yang berarti perusahaan perlu mempertahankan posisi pasar dan fokus pada efisiensi tanpa ekspansi besar. Matriks SWOT menghasilkan sembilan strategi alternatif. Analisis QSPM merekomendasikan strategi utama, yaitu mengurangi ketergantungan pada pemasok melalui multi-sourcing untuk mengantisipasi risiko geopolitik (W2, T3).
Keyword: ketahanan rantai pasok, kinerja perusahaan, PLS SEM, SWOT, QSPM

1. Introduction

Supply chain resilience is understood as the capacity of a supply chain to build adequate responsiveness, preparedness, and recovery abilities so that it can handle risks and disruptions and return to its previous

condition or even reach a better state after the disturbance occurs [1]. The term is often applied to low-probability but persistent disruptive events, including natural disasters, pandemics, financial and economic crises, changes in regulations, security issues, political instability, conflict situations, and terrorism. Discussions on supply chain resilience also include more frequent and ongoing disturbances, such as poor infrastructure, delivery or logistics delays, supplier problems, and internal issues like equipment breakdowns or technological failures [2]. Apart from major events such as disasters or geopolitical conflicts, supply chains also face small and routine operational problems, including flat tires, unfavorable weather, or product damage. Any form of disruption, regardless of scale, can lead to shipping delays, inventory shortages, and increased operational costs. A resilient supply chain must therefore reduce the likelihood of unexpected disturbances, prevent disruptions from spreading by maintaining structural and functional control, and implement quick and effective recovery actions so operations can return to a stable condition [3]. SCRes refers to a firm's ability to recover from disruptive situations and, more specifically, describes how well a system can adapt to short-term disruptions [4]. To support this, organizations need to identify risks and vulnerabilities ahead of time so they can determine their level of exposure and reduce the effects of disruptions [5]. According to Christopher and Peck (2004), resilience capability includes four core components: agility, collaboration, re-engineering, and a risk-management culture [6]. It has also been suggested that SCRMC relies on two main aspects, which are leadership and innovation. Reference [7] points out that agility can be assessed through visibility and velocity. Re-engineering is commonly achieved through flexibility and redundancy [6], while collaboration is strengthened through trust and information sharing [6].

Previous studies indicate that the results of testing and data analysis show a positive impact of supply chain resilience factors (visibility, velocity, trust, information sharing, innovation, leadership, flexibility, redundancy) on competitive advantage and firm performance among MSMEs in Yogyakarta City [8]. Another study shows that a supply-chain risk-management culture can create positive influences towards SCRes capabilities, which include collaboration, agility, and re-engineering. Among these capabilities, agility is found to have the strongest effect on company performance and competitive advantage [2]. Evidence also shows that specific collaborative practices, such as information sharing, effective communication, jointly developed knowledge, and cooperative relationship efforts, enhance supply chain resilience by improving visibility, velocity, and flexibility. This research also identifies the underlying mechanisms and interconnections among these factors within the supply chain network [9]. Further evidence shows that agility has a positive and meaningful impact on both supply chain resilience and the long-term continuity of supply chain performance. Furniture SMEs that demonstrate higher levels of agility in handling their supply chain processes tend to maintain stronger performance despite uncertainty in the business environment [10]. Another study recommends that SMEs improve their use of outsourcing strategies and enhance collaborative practices as a way to build and strengthen supply chain resilience [11].

Bobabox is one of the SMEs in Medan that took advantage of the business opportunity to establish a bubble tea SME amidst the Covid-19 pandemic. Bobabox is a homemade bubble tea shop founded on July 7, 2020, on Jalan Setia Budi, Medan, which serves various kinds of drinks and toppings. Bobabox also has the tagline "the best homemade boba for you". After establishing the Bobabox business for almost a year, Bobabox has succeeded in expanding its business to 20 outlets, including in Setia Budi outlet, Syailendra, Pembangunan USU, Kasuari, Helvetia, Paya Geli, Adam Malik, Katamso, STM, Sembada, Veteran, Ayahanda, Setia Luhur, Pasar Baru, Simpang Pemda, Sri Gunting, Flamboyan Raya, Marelan, Gaperta, Gatot Subroto. In addition, Bobabox can also be ordered through marketplaces (Gojek and Grab). One of the factors that encourages opening branches is due to the high interest from consumers in other areas and by opening branches in other areas, it makes it easier for consumers to reach or buy Bobabox whose homes are far from Setia Budi.

Table 1 shows the sales of Bobabox sales in 2020-2025. Bobabox sales have been declining since 2024, peaking in 2025. This led to the closure of six Bobabox outlets in parts of Medan in 2024. Furthermore, the presence of numerous other bubble tea outlets has caused the Bobabox Company to lose competitiveness. Given the large number of competitors in the bubble tea beverage business, a strategy to increase sales is necessary.

Table 1. Sales of Bobabox in 2020-2025

Branch	2020	2021	2022	2023	2024	2025
Setia Budi	14294	12149	12410	11853	12108	10233
Syailendra	12210	12613	11525	12613	11775	10572
Pembangunan						
USU	13037	11420	12788	12340	4721	0
Kasuari	12785	11187	12397	11847	12575	10496
Helvetia	12197	11033	12273	11865	12643	11455
Paya Geli	12242	11274	11082	12577	12213	10138
Adam Malik	12236	11661	12657	12887	12913	11321
Katamso	12616	11884	12579	11428	12999	11527
STM	12272	12222	11159	12343	3512	0
Sembada	12763	12355	11667	11335	11352	10005
Veteran	12242	12979	12178	12598	3856	0
Ayahanda	12666	12016	12136	12455	12843	10328
Setia Luhur	12731	11425	12985	12085	7231	0
Pasar Baru	11948	11770	12285	12418	3485	0
Simpang Pemda	12222	12681	12075	11751	12950	11461
Sri Gunting	12146	12901	12796	11900	2369	0
Flamboyan						
Raya	11714	11633	12689	11610	11501	10167
Marelan	12634	11779	12978	11744	12667	10598
Gaperta	12350	12744	12731	11646	11578	10001
Gatot Subroto	12526	11964	11918	11386	12021	11654
Total	249831	239690	245308	240681	197312	123956

Table 2. Purchase of Raw Materials

Distributor	Nama Of Material	Unit	Order	Received	Lead Time
PT Aneka Talenta Mandiri	thai tea	24x1kg	2 cases	2 cases	7 days
CV Cahaya Makmur Abadi	green tea	24x1kg	2 cases	2 cases	7 days
	strawberry	24x1kg	2 cases	2 cases	
	red velvet	24x1kg	2 cases	2 cases	
	vanilla	24x1kg	2 cases	2 cases	
	taro	24x1kg	2 cases	2 cases	
	milk tea	24x1kg	2 cases	2 cases	
	silverqueen	24x1kg	2 cases	2 cases	
	vietnam coffee	24x1kg	2 cases	2 cases	
	coklat	24x1kg	2 cases	2 cases	
	Lychee	24x1kg	2 cases	2 cases	
PT Natural Foods Sukses Makmur	Mango	24x1kg	2 cases	2 cases	1 days
CV Globalindo Sejati	Lemonade	24x1kg	2 cases	2 cases	1 days
Home made	Jelly	-	-	-	-
Home made	Boba	-	-	-	
Home made	Aren sugar	-	-	-	
PT Bayhani Sinergi Nusantara	Honey	20x500ml	20 bottles	20 bottles	1 days
PT Aneka Talenta Mandiri	SKM	48x370gr	4 cases	4 cases	1 days
Makmur Plastik	Plastic	Pcs	300	300	1 days
	Straw	Pcs	30.000	30.000	
	cup	Pcs	30.000	30.000	

Considering the many parties involved in Bobabox, including owners, partners, employees, distributors, and customers, a good relationship from upstream to downstream is necessary to ensure access to data and information related to the supply chain and to achieve the shared vision of increasing sales by providing the best service in terms of price, taste, and size. Facing ever-changing customer needs, the supply chain must be able to adapt to future changes in order to respond appropriately to market needs. As seen in Table 2, there was an obstacle in purchasing powder raw materials, where Bobabox had to wait 7 days for the goods to arrive.

Undoubtedly, events like these have disrupted the supply chain, fraught with risk and uncertainty, as these unexpected disruptions are a major source of poor operational and financial performance. Supply chain success depends on a company's resilience and ability to navigate internal and external challenges. Adapting to change and addressing disruptions to ensure uninterrupted sales requires enhancing supply chain resilience. Therefore, the SWOT and QSPM strategy methods were used as an effort to solve problems in improving the supply chain.

Given this background, the author is motivated to carry out a study on the development strategy of Bobabox SMEs by examining how supply chain resilience variables influence company performance.

2. Method

This research uses the Quantitative Strategic Planning Matrix (QSPM) method with a quantitative approach. The relationship between the independent variable (supply chain resilience) and the dependent variable (company performance) is tested using Partial Least Squares-Structural Equation Modeling (PLS-SEM) software, followed by a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis.

A population refers to the whole set of individuals or elements that become the focus of a researcher's study [12]. A sample represents a smaller portion taken from that population through particular procedures, and it is used to describe the characteristics of the larger group [13]. This study applied purposive sampling, which is a non-probability sampling technique that selects specific individuals who meet predetermined criteria as sources of data or information. In this case, the selected participants were employees working at several boba beverage outlets in Medan.

Partial Least Squares (PLS) is a component- or variance-based Structural Equation Modeling (SEM) model [14]. The analysis performed using PLS consists of:

1. Measurement Model Analysis. Measurement model analysis is useful for explaining how variables and their indicators relate to each other and evaluating whether the measurements used are valid. In this study, the measurement model tests conducted consisted of[14]:

a. Outer loading: A measurement item is valid and can represent the variable if its outer loading value is above 0.7.[15]

b. Convergent validity test: Convergent validity is assessed through the values of Cronbach's alpha, composite reliability, and Average Variance Extracted (AVE). A construct is deemed reliable when its Cronbach's alpha and composite reliability exceed 0.70, and its AVE value is greater than 0.50 [15]

c. Discriminant validity is assessed based on the cross-loading value of the measurement with the variable. If the correlation between a variable and a measurement item is greater than that of other variable measures, it indicates that the latent variable predicts the measures in its block better than other block measures.[14]

2. Structural Model Analysis. Based on substantive theory, the inner model shows the relationships between variables. Assessment of a structural model using PLS begins with an R-square calculation to predict the strength of a model. R-square values are divided into: a lower limit of 0.67 indicates a strong model, a lower limit of 0.33 indicates a moderate model, and a lower limit of 0.19 indicates a weak model. Furthermore, path coefficients and f-square values are used to examine the significance level of the influence. F-square values with limits of 0.02, 0.15, and 0.35 indicate that the latent variable predictor has a "weak," "medium," and "strong" influence on the model, respectively [14].

3. Hypothesis Testing. Hypothesis testing is useful for determining the significance of a variable's influence on another variable by examining the parameter coefficient values and the t-statistical significance value.

Hypothesis testing is divided into direct and indirect effects. Direct and indirect effects are analyzed using bootstrapping in SmartPLS software.

4. Strategy Formulation. Decision-making in the strategic planning process requires determining the basic assumptions that will be used as the basis for strategy selection and implementation [16]. Strategy formulation involves three stages: input, matching, and decision [17]. The strategic planning process consists of three stages [18]: input, matching, and decision [19].

Data analysis refers to the activity of processing data in order to uncover meaningful information that can serve as a foundation for making decisions and addressing a particular problem [19]. Quantitative data processing in this study implements the SWOT analysis approach and the QSPM. SWOT analysis is used in solving the attributes of factors (internal and external) that influence the growth of the Bobabox business. The QSPM is used in formulating the right strategy for the development of the Bobabox business by determining the weight of each attribute of the internal and external factors that have been previously determined. [20]

The data processing and analysis process used to formulate Bobabox's business development strategy is as follows: External Factor Evaluation (EFE) dan Internal Factor Evaluation (IFE) matrices.

1. The EFE and IFE matrices help strategists examine the external and internal environments of Bobabox.

2. IE (Internal-External) Matrix. This is a step-by-step approach to positioning an organization's various divisions in a nine-column table.

3. SWOT Matrix. This step-by-step approach determines the company's best strategy for greater focus and allows for comparison from various angles.

4. QSPM. This provides an objective assessment of different strategic alternatives by considering the internal and external success factors identified earlier.

3. Result and Discussion

3.1. Result

1. Measurement Model Analysis

a. Outer Loading. [15] A valid measurement item can represent a variable if it has an outer loading value above 0.7. The outer loading value of each questionnaire indicator obtained from the SmartPLS 4 software can be seen in Figure 1.

b. Convergent Validity Test. To conduct a convergent validity test, the Cronbach's alpha, composite reliability, and Average Variance Extracted (AVE) values can be assessed. A variable is considered reliable if its Cronbach's alpha and composite reliability values are >0.70, and its AVE value is >0.50 [15].

c. Validity Discriminant Test. Discriminant validity for reflective indicators is evaluated through the cross-loading values between each measurement item and its associated variable. When an indicator shows a stronger correlation with its own construct than with other constructs, it suggests that the latent variable is better at explaining the indicators in its own block compared to indicators in other blocks [14]. The cross-loading results are presented in Figure 3. Another approach to evaluating discriminant validity is to compare the square root of each variable’s AVE using the Fornell and Larcker criterion with the correlations between that variable and the others in the model. A construct is deemed to possess sufficient discriminant validity when its AVE square root exceeds its correlations with other constructs [21]. The AVE values used in this assessment are presented in Figure 4.

Outer loadings - Matrix

	Company Performance	Supply Chain Resilience
A1		0.841
A2		0.885
A3		0.828
A4		0.819
C1		0.829
C2		0.741
C3		0.799
KP1	0.823	
KP2	0.854	
KP3	0.939	
KP4	0.898	
KP5	0.878	
RE1		0.774
RE2		0.821
RE3		0.841
S1		0.891
S2		0.808
S3		0.778
S4		0.821
S5		0.781

Figure 1. Outer Loading Value

Construct reliability and validity - Overview

	Cronbach's alpha	Composite reliability (r...	Composite reliability (r...	Average variance extrac...
Company Performance	0.926	0.930	0.944	0.773
Supply Chain Resilience	0.964	0.966	0.968	0.669

Figure 2. Validity and Reliability Discriminant

Discriminant validity - Cross loadings

	Company Performance	Supply Chain Resilience
A1	0.624	0.841
A2	0.658	0.885
A3	0.591	0.828
A4	0.642	0.819
C1	0.698	0.829
C2	0.601	0.741
C3	0.674	0.799
KP1	0.823	0.649
KP2	0.854	0.717
KP3	0.939	0.793
KP4	0.898	0.738
KP5	0.878	0.781
RE1	0.792	0.774
RE2	0.722	0.821
RE3	0.702	0.841
S1	0.759	0.891
S2	0.706	0.808
S3	0.683	0.778
S4	0.722	0.821
S5	0.654	0.781

Figure 3. Cross Loadings

Discriminant validity - Fornell-Larcker criterion

	Company Performance	Supply Chain Resilience
Company Performance	0.879	
Supply Chain Resilience	0.839	0.818

Figure 4. Fornell dan Lacker

2. Structural Model Analysis. Structural model testing is conducted to examine the relationships between constructs and predict their strength. Structural model testing consists of R-square and F-square tests. The R-square test is used to predict the strength of a model. The R-square test results generated through the SmartPLS software are displayed in Figure 5. To determine the magnitude of the independent variable's effect on the dependent variable, the f-square outcomes are shown in Figure 6. The structural model produced from this analysis using SmartPLS 4 is presented in Figure 7.

R-square - Overview

	R-square	R-square adjusted
Company Performance	0.704	0.701

Figure 5. R-square table

f-square - Matrix

	Company Performance	Supply Chain Resilience
Company Performance		
Supply Chain Resilience	2.382	

Figure 6. F-Square table

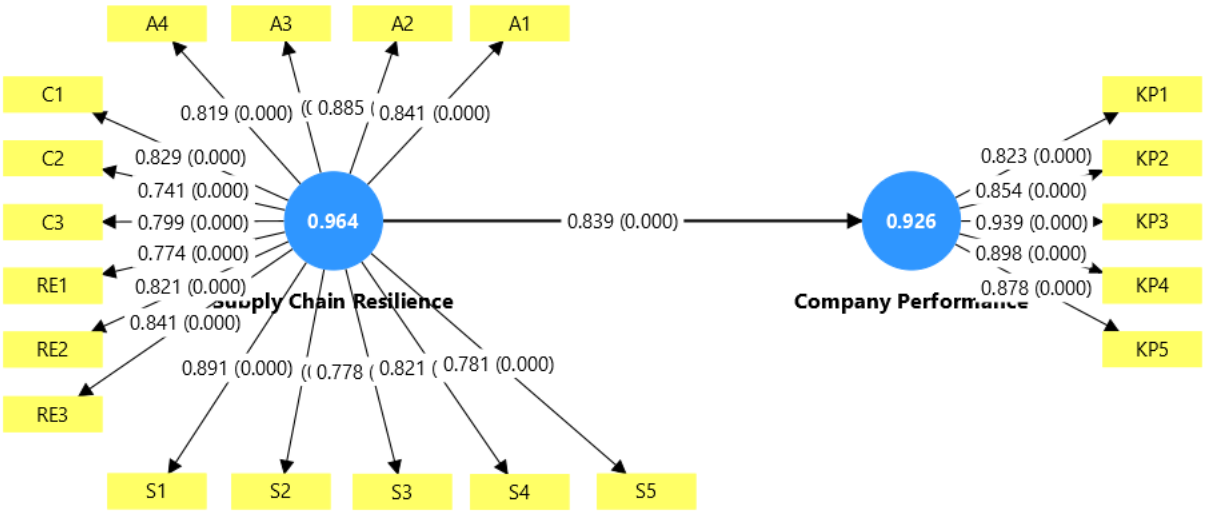

Figure 7. Structural Model Evaluation Construct

3. Hypothesis Testing. To identify whether the proposed hypothesis should be accepted or rejected, the resulting t-statistic value is examined. Using $\alpha = 5\%$, df = n-k = 44-4 = 40, the t-table value is 1.684. If the t-statistic is lower than the t-table value, the null hypothesis (H_0) is accepted. Conversely, if the t-statistic exceeds the t-table value, the null hypothesis (H_0) is rejected. The results of the t-statistic estimation in this model can be seen in Figure 8.

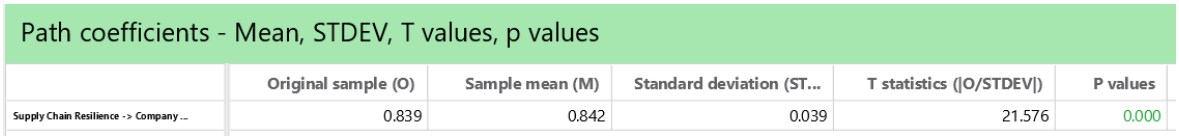

Figure 8. Direct Hypothesis Testing

4. Strategy Formulation. The SWOT matrix is made up of nine sections, which include four main factor cells, four strategy cells, and one blank cell located in the upper-left corner. The strategy cells, identified as SO, WO, ST, and WT, are formulated after the four primary factor cells—Strengths, Weaknesses, Opportunities, and Threats—have been completed [22].

The IFE and EFE matrices are used in the SWOT analysis process to evaluate a company both internally and externally. The combination of the two produces two types of matrices: the quadrant matrix and the Internal/External (IE) matrix [23]. The indicators sorted in the QSPM are strategies formulated based on the SWOT analysis's four factors: SO strategies, ST strategies, WO strategies, and WT strategies [24]. The Bobabox SWOT analysis position quadrant diagram can be seen in Figure 9.

Based on the results obtained, the SWOT matrix is in Quadrant IV with coordinates at (1.51; -0.67). Quadrant IV is known as a defensive strategy, which is a defensive position when there are internal weaknesses and external threats. This position occurs due to intense competition from competitors and a negative sales trend, requiring the company to formulate a strategy to address these issues [25].

Table 3. IFE Matrix Recapitulation

No	Factor	Amount	Weight	*Rating*	*Score*
Strengths					
1	Implementation of digital technology that supports the integration of supply chain processes	14	0,063636	3	0,190909
2	The existence of documented standard work procedures	18	0,081818	4	0,327273
3	Ability to respond quickly to changes in market demand through flexible production capacity	19	0,086364	3	0,259091
4	*Lead time short*	19	0,086364	3	0,259091
5	Strong relationships with key suppliers	20	0,090909	4	0,363636
6	Shared information system	18	0,081818	4	0,327273
7	Availability of a supply chain risk management team	22	0,1	4	0,4
Total		130	0,59091	25	2,12727
Weaknesses					
1	Limitations in automation adoption	20	0,1	2	0,181818
2	Dependence on certain suppliers reduces flexibility	23	0,090909	1	0,104545
3	There are still silos between departments	23	0,104545	1	0,104545
4	There is no integrated risk mitigation system yet	24	0,104545	2	0,218182
Total		90	0,40909	6	0,60909
Total		220	1	31	2,73636
Difference (*Strengths* – *Weaknesses*) = 2,12727-0,60909 = 1,51818					

Table 4. EFE Matrix Recapitulation Table

No	Factor	Amount	Weight	*Rating*	*Score*
Opportunities					
1	Opportunities for utilizing industry 4.0 technology.	14	0,125	2	0,25
2	Varied market demand trends	13	0,116071	3	0,348214
3	Government support for strategic partnerships between companies	15	0,133929	2	0,267857
4	Increasing global awareness of sustainability	15	0,133929	1	0,133929
Total		57	0,50893	8	1
Threats					
1	Rapid technological disruption means that existing systems have the potential to become obsolete quickly.	8	0,071429	3	0,375
2	Global market volatility causes sharp fluctuations in demand and prices of raw materials.	16	0,142857	2	0,232143
3	Risk of dependence on supply chain partners	17	0,151786	4	0,535714
4	Threats of natural disasters and pandemics	14	0,125	4	0,535714
Total		55	0,49107	13	1,67857
Total		112	1	21	2,67857
Difference (*Opportunities* – *Threats*) = 1-1,67857 = -0,6786					

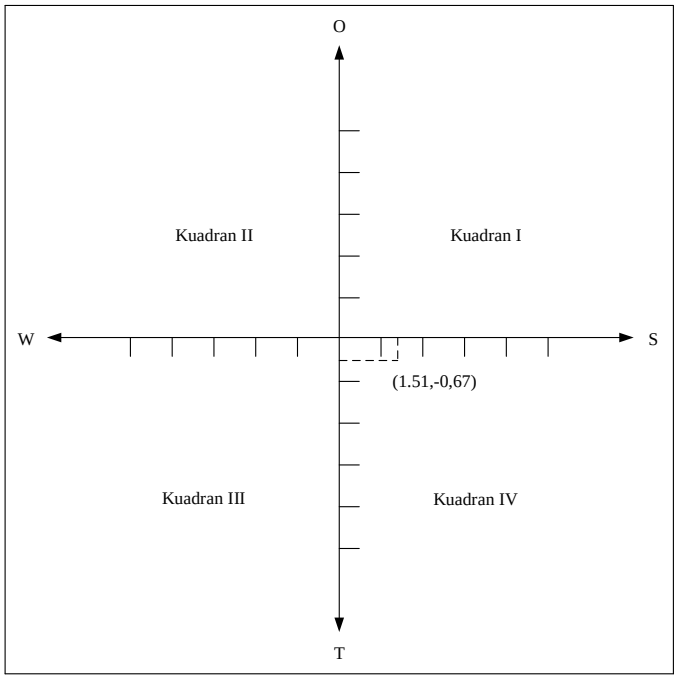

Figure 9. SWOT Quadrant Diagram

The IE Matrix is utilized to assess the strategic position of Bobabox. This matrix has two dimensions: the total weighted score of the IFE matrix plotted on the X-axis and the total weighted score of the EFE matrix on the Y-axis [26]. The IE matrix is generated from the combined total scores of the IFE and EFE assessments. From the calculations, the IFE score is 2.73636, while the EFE score is 2.67857. The resulting IE matrix is shown in Figure 10.

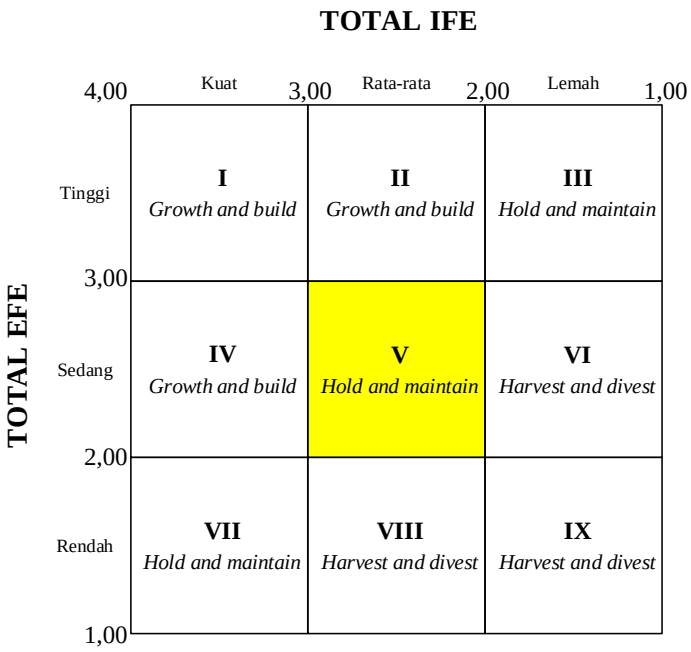

Figure 10. Bobabox Internal External (IE) Matrix

Based on the results obtained, the company is in column V, namely Hold and Maintain, with an Internal Factor Evaluation value of 2.73636 and an External Factor Evaluation value of 2.67857. The hold and maintain position indicate that the company is generally in a position that is not superior internally and external opportunities are not large. The hold and maintain strategy indicate that the company must maintain its existing market position and focus on efficiency and not carry out large-scale expansion [24].

Table 5. Strategy Ranking Based on QSPM

No	Strategi	*Rank*
1	Digital system integration is utilized for the adoption of industry 4.0 technology (S1, O1)	4
2	Production flexibility is used to respond to customized product trends (S3, O2)	3
3	Strategic relationships with suppliers are strengthened through government support for partnerships (S5, O3)	8
4	Limitations of automation investment are overcome with government support and new technologies (W1, O1, O3)	9
5	Silos between departments are reduced through the adoption of modern data sharing platforms (W3, O1)	2
6	Supply chain risk management teams face the threat of technological disruption and global disasters (S7, T1, T4)	5
7	Short distribution lead times are used to reduce the impact of market volatility (S4, T2)	6
8	Dependence on suppliers is addressed by multi-sourcing to anticipate geopolitical risks (W2, T3)	1
9	The absence of an integrated risk mitigation system is addressed to address disaster & cyberattack threats (W4, T4)	7

Based on the results obtained, the strategy that Bobabox must implement is to overcome dependence on suppliers through multi-sourcing to anticipate geopolitical risks (W2, T3). This relates to the results obtained from the SWOT quadrant matrix, which indicates that the company must immediately improve with strategies related to Weaknesses and Threats because it is in Quadrant IV. This strategy shows that the company's limitations can be overcome with digital strengths. This strategy ensures that customers can still find and be interested in the product.

3.2. Implementation

1. Re-engineering (Flexibility & Redundancy)

a. Actions: Provide safety stock of key raw materials (boba, milk, palm sugar, tea powder); Diversify suppliers to reduce the risk of delays (not relying on just 1-2 suppliers); Implement a production machine rotation system and routine maintenance to prevent downtime

b. Output: Shorter lead times, stable production even in the event of supply disruptions

2. Agility (Visibility & Velocity)

a. Actions: Digitize the supply chain with a real-time stock and sales monitoring dashboard; Form a quick response team for distribution/logistics disruptions; Implement simple predictive analytics (based on sales trends) to ensure stock meets seasonal needs

b. Output: Quick decisions when demand increases/decreases, minimizing dead stock losses

3. Collaboration (Trust & Information Sharing)

a. Actions: Strengthen long-term contracts with core raw material suppliers; Create an app-based communication system with partners/franchisees to ensure uniform stock, ingredient, and promotional information; Customer loyalty program to maintain relationships with consumers; Open a booth at seasonal events (music concerts, campus activities, mall bazaars, and other events)

b. Output: Stable supply chain relationships, improved customer service levels

4. SCRM Culture (Leadership & Innovation)

• Action: Train employees on risk awareness (e.g., simulate raw material delays); Develop new menu options based on trends (e.g., low-sugar, vegan-friendly), and food menus (corndogs, toppokki, pancakes). Then, create a bundling system; The owner/CEO actively encourages innovation with weekly review meetings.

• Output: Adaptive, innovative, and prepared company culture for external risks

4. Conclusion

The results of the outer model assessment indicate that all indicators within the measurement variables meet the criteria for validity and reliability. The inner model evaluation produced an R-square value of 0.704, which reflects a strong model (70.4%). The F-square value of 2.382 also signifies a strong effect. From the hypothesis testing results, it can be concluded that supply chain resilience has a significant impact on company performance, supported by a P-value of 0.000 and a T-statistic of 21.576.

Based on the results obtained, the strategy that Bobabox must implement is to overcome dependence on suppliers through multi-sourcing to anticipate geopolitical risks (W2, T3). This relates to the results obtained from the SWOT quadrant matrix, which indicates that the company must immediately improve with strategies related to Weaknesses and Threats because it is located in Quadrant IV. This strategy demonstrates that the company's limitations can be overcome with digital strengths. It is advisable for the company to take concrete steps, especially based on the strategies formulated from this research, so that the company's business processes can run better in the future.

Future studies may consider testing and implementing the same conceptual framework using a larger number of companies within a broader population. Researchers can also widen the scope by examining small and medium-sized enterprises as well as firms operating in different sizes and sectors.

The author would like to thank all parties who have provided support, both directly and indirectly, so that this research can be completed well.

References

[1] M. M. H. Chowdhury, M. Quaddus, and R. Agarwal, "Ketahanan rantai pasokan terhadap kinerja: Peran praktik relasional dan kompleksitas jaringan," *Supply Chain Manag.*, vol. 24, no. 5, pp. 659–676, 2019.

[2] N. Abeysekara, H. Wang, and D. Kuruppuarachchi, "Effect of supply-chain resilience on firm performance and competitive advantage," *Bus. Process Manag. J.*, vol. 25, no. 7, pp. 1673–1695, 2019.

[3] M. Kamalahmadi and M. Parast, "A review of the literature on the principles of enterprise and supply chain resilience: Major findings and directions for future research," *Int. J. Prod. Econ.*, vol. 2, 2016.

[4] U. Soni, V. Jain, and S. Kumar, "Measuring supply chain resilience using a deterministic modeling approach," *Comput. Ind. Eng.*, vol. 74, no. 1, pp. 11–25, 2014.

[5] T. J. Pettit, J. Fiksel, and K. L. Croxton, "Ensuring supply chain resilience: Development of a conceptual framework," *J. Bus. Logist.*, vol. 31, no. 1, pp. 1–21, 2010.

[6] M. Kamalahmadi and M. M. Parast, "A review of the literature on the principles of enterprise and supply chain resilience: Major findings and directions for future research," *Int. J. Prod. Econ.*, vol. 171, no. 1, pp. 116–133, 2016.

[7] M. Christopher and H. Peck, "Building the resilient supply chain," *Int. J. Logist. Manag.*, vol. 15, no. 2, pp. 1–13, 2004.

[8] G. Rizki and S. Nursyamsiah, "Pengaruh ketahanan rantai pasokan terhadap kinerja perusahaan dan keunggulan bersaing: Studi empiris UMKM di Kota Yogyakarta," *J. Mhs. Bisnis Manaj.*, vol. 2, no. 1, pp. 1–17, 2023.

[9] K. Scholten *et al.*, "The role of collaboration in supply chain resilience," *Supply Chain Manag. Int. J.*, 2015.

[10] K. Pratondo and T. Kusmantini, "Gaining supply chain resilience and performance sustainability through supply chain agility in furniture SMEs in Yogyakarta," *J. Bus. Econ.*, vol. 5, no. 3, pp. 392–398, 2021.

[11] K. A. D. N. Manathunge, V. A. Samaraweera, and W. J. H. Withanage, "Fostering resilience of SMEs to supply chain disruptions: The role of relationships," *J. Mgmt.*, vol. 1, no. 2, pp. 71–94, 2021.

[12] S. Sinulingga, *Metode Penelitian*, 5th ed. Medan, Indonesia: USU Press, 2022.

[13] S. Sinulingga, *Metode Penelitian*, 3rd ed. Medan, Indonesia: USU Press, 2018.

[14] I. Ghozali, *Structural Equation Modeling: Metode Alternatif dengan Partial Least Square*, 2nd ed. Semarang, Indonesia: Univ. Diponegoro Press, 2006.

[15] J. F. Hair, M. Sarstedt, L. Hopkins, and V. G. Kuppelwieser, "Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research," *Eur. Bus. Rev.*, vol. 26, no. 2, pp. 106–121, 2014.

[16] S. F. Tafti, M. Jahani, and S. A. Emami, "Explaining evolutionary trend of strategic planning from traditional economy to innovation economy," *Procedia—Soc. Behav. Sci.*, vol. 58, pp. 56–65, 2012.

[17] G. Fuertes *et al.*, "Conceptual framework for strategic management: A literature review," *J. Eng.*, vol. 2020, 2020.

[18] D. T. Alamanda, G. Anggadwita, M. Raynaldi, S. Novani, and K. Kijima, "Designing strategies using IFE, EFE, IE, and QSPM analysis: Digital village case," *Asian J. Technol. Manag.*, vol. 12, no. 1, pp. 48–57, 2019.

[19] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung, Indonesia: Alfabeta, 2013.

[20] J. Abdul, "Strategi pengembangan sentra IKM furniture Langkat dalam upaya meningkatkan daya saing dengan analisis SWOT dan QSPM," Bachelor Thesis, Univ. Sumatera Utara, 2024.

[21] J. F. Hair Jr., G. T. M. Hult, C. M. Ringle, and M. Sarstedt, *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 2nd ed. Thousand Oaks, CA, USA: SAGE, 2017.

[22] H. Aghasafari, A. Karbasi, H. Mohammadi, and R. Calisti, "Determination of the best strategies for development of organic farming: A SWOT–Fuzzy Analytic Network Process approach," *J. Cleaner Prod.*, vol. 277, p. 124039, 2020.

[23] Z. A. F. A. Az *et al.*, "The implementation of the strategy of marketing management through a SWOT analysis with the matrix of IFE, EFE and IE," Univ. Singaperbangsa Karawang, 2021.

[24] T. Wheelen *et al., Strategic Management and Business Policy*. England: British Library Cataloguing-in-Publication Data, 2015.

[25] D. Sudiantini, *Manajemen Strategi*. Purwokerto, Indonesia: CV Pena Persada, 2022.

[26] S. Amirshenava and M. Osanloo, "Strategic planning of post-mining land uses: A semi-quantitative approach based on the SWOT analysis and IE matrix," *Resour. Policy*, vol. 76, p. 102585, 2022.