

SME RESILIENCE IN A POST-PANDEMIC BUSINESS ENVIRONMENT: EVIDENCE FROM NORTHERN PENINSULAR MALAYSIA

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Abstract

This paper develops and evaluates the Small and Medium Enterprises Resilience Index (SME-RI) as a diagnostic tool for assessing the resilience of SMEs in the northern region of peninsular Malaysia, specifically Kedah, Perlis, and Pulau Pinang. SME-RI presents SME resilience according to state, business sector, namely agriculture, manufacturing, construction, and services, as well as three key resilience dimensions: financial stability, uncertainty environment, and competitiveness. Based on survey data collected from 139 SMEs, the findings indicate that most of SMEs demonstrate moderate to high levels of resilience. Overall, 57.6% of SMEs were classified as having moderate resilience, 38.1% as highly resilient, and only 4.3% as having low resilience. Among the three states, Kedah recorded the highest proportion of highly resilient SMEs, suggesting a relatively stronger adaptive capacity in responding to uncertainty and external shocks. Across business sectors, SMEs in agriculture, manufacturing, services, and construction generally exhibited similar resilience patterns, with the agriculture and construction sectors recording no SMEs in the low-resilience category. The dimensional analysis of the SME-RI further reveals that uncertainty environment and competitiveness represent the strongest aspects of resilience, indicating that SMEs are generally capable of adapting to changing market conditions and sustaining their competitive position. However, financial stability consistently recorded the lowest scores across sectors, highlighting financial capacity as the main weakness affecting SME resilience. These findings suggest that strengthening financial stability, improving access to financial support, and enhancing business preparedness are essential for sustaining SME resilience against future economic disruptions.

Keywords: SME Resilience Index (SME-RI); Small and Medium Enterprises Resilience; Financial Stability; Economic Uncertainty; Competitiveness

INTRODUCTION

Small and Medium Enterprises (SMEs) are widely recognized as important contributors to economic growth, employment creation, income generation, and regional development. In Malaysia, SMEs form a major component of the business ecosystem and play a strategic role in supporting domestic production, local entrepreneurship, supply-chain activities, and community livelihoods. In 2024, Malaysian MSMEs contributed RM652.4 billion, equivalent to 39.5% of national GDP, and accounted for 48.7% of total employment, highlighting their strategic importance to the national economy (Department of Statistics Malaysia [DOSM], 2025). Their contribution is particularly important in regional economies such as the northern region of Peninsular Malaysia, which includes Perlis, Kedah, and Pulau Pinang. These states consist of diverse business activities across agriculture, manufacturing, services, and construction, making SMEs an essential driver of regional economic resilience.

However, SMEs are also among the most vulnerable business groups during periods of crisis and uncertainty. Compared with large firms, SMEs usually operate with limited financial resources,

smaller workforce capacity, weaker access to formal financing, and lower ability to absorb sudden economic shocks. These limitations became more visible during and after the COVID-19 pandemic, when many SMEs faced declining sales, disrupted supply chains, rising operating costs, labor constraints, and changes in consumer behaviors. Previous studies show that small businesses were highly exposed to operational and financial disruption during COVID-19 due to limited liquidity and reduced business activity (Bartik et al., 2020). The pandemic also accelerated the need for firms to become more adaptable, financially prepared, and competitive in a changing business environment.

In this context, resilience has become an important concept in SME development. Resilience refers not only to the ability of firms to survive during periods of crisis, but also to their capacity to recover, adapt, and transform in response to changing economic conditions. Organizational resilience is commonly understood as a firm's capability to anticipate disruptions, cope with shocks, and adapt to changing environments (Duchek, 2020). For SMEs, resilience means the ability to continue business operations, manage uncertainty, maintain competitiveness, and recover from disruptions. A resilient SME is not only able to withstand shocks, but also able to adjust its strategies, strengthen internal capacity, and respond effectively to new market realities (Lengnick-Hall et al., 2011; Pal et al., 2014).

The post-pandemic business environment has further strengthened the need to measure SME resilience systematically. Without a proper measurement tool, it is difficult for policymakers, development agencies, financial institutions, and business support organizations to identify which SMEs are most vulnerable and which dimensions require intervention. Recent studies emphasized that SME resilience is shaped by financial capacity, organizational preparedness and the ability to respond to changing market conditions (Lestari et al., 2024; Óri et al., 2024). Therefore, the development of the Small and Medium Enterprise Resilience Index (SME-RI) is important because it provides a diagnostic tool to assess resilience at the firm level.

LITERATURE REVIEW

The prevailing literature conceptualizes Small and Medium Enterprise (SME) resilience as a multidimensional, capability-based capacity enabling firms to anticipate, cope with, and adapt to disruptive economic shocks (Duchek, 2020; Lengnick-Hall et al., 2011). Because SMEs are structurally constrained by smaller management teams, limited cash reserves, and lower resource access, their capacity to survive macroeconomic volatility relies heavily on a complex interplay of internal competencies and external support structures (Pal et al., 2014; Lestari et al., 2024).

Empirical applications of the Small and Medium Enterprise Resilience Index (SME-RI) isolate three critical pillars defining this adaptive capacity. First is financial stability. These pillars was identified as the primary structural vulnerability for SMEs. Strong financial capacity dictates an organization's ability to manage cash flow, retain talent, and absorb operational losses during downturns (Bartik et al., 2020). When financial liquidity is compromised, it curtails a firm's capacity to deploy digital tools or execute strategic recovery plans, making targeted financial support and literacy vital for baseline survival (Kruse, 2026; Malik et al., 2026).

Second is uncertainty environment that reflects an organization's capability to operate amid volatile market shifts, inflation, and supply-chain bottlenecks. Empirical evidence indicates that regional SMEs often score highly in this dimension, demonstrating robust, informal coping mechanisms—such as cost control and operational flexibility—honed through navigating prior crises (Duchek, 2020; Pal et al., 2014).

Third is competitiveness, which governs long-term market sustainability. While SMEs consistently show a stable baseline capacity to maintain market relevance, evolving pressures from global e-commerce and well-capitalized corporate entities require continuous innovation, technical upskilling, and digital transformation to sustain this competitive edge (Herbane, 2019; Kahveci, 2025).

Literature underscores that resilience is not uniform; it is highly context-specific and varies across geographical lines and economic sectors. Therefore, this study develops and evaluates the SME-RI for SMEs in the northern region of Peninsular Malaysia, specifically Perlis, Kedah, and Pulau Pinang. The analysis focuses on three levels. First, it examines SME resilience by state. Second, it analyses resilience according to business sector, namely agriculture, manufacturing, services, and construction. Third, it evaluates three key resilience dimensions: financial stability, uncertainty environment, and competitiveness. These dimensions are important because they capture the ability of SMEs to manage financial conditions, respond to external uncertainty, and sustain their market position. In line with recent evidence, business adaptability are increasingly important for strengthening SME resilience, although their effectiveness depends on financial readiness, skills, organizational capability, and supportive policy mechanisms (OECD, 2024; Petropoulou et al., 2024).

RESEARCH METHODS

This study employed a quantitative research design supported by qualitative input to assess the resilience of Small and Medium Enterprises (SMEs) in the Northern Region of Peninsular Malaysia. The study focused on three states, namely Perlis, Kedah, and Pulau Pinang, which represent important regional economic areas with diverse SME activities. The main purpose of the study was to develop and evaluate the Small and Medium Enterprise Resilience Index (SME-RI) based on selected resilience dimensions. A total of 384 SME respondents is targeted using a proportionate stratified simple random sampling approach across four main sectors: agriculture, manufacturing, services, and construction. These sectors were selected because they represent key economic activities among SMEs in the northern region. However, only 139 of SMEs participated in the survey. The respondents consisted of SME owners, managers, or representatives who had knowledge of business operations, financial condition, and overall business performance. Data was collected using a structured questionnaire. The questionnaire gathered information on business background, state location, business sector, and SME resilience dimensions. The resilience level of SMEs was measured using the SME-RI, which consists of three main dimensions: financial stability, uncertainty environment, and competitiveness. Financial stability refers to the ability of SMEs to manage financial resources and sustain business operations. The uncertainty environment dimension refers to the ability of SMEs to respond to external changes, risks, and disruptions. Competitiveness refers to the ability of SMEs to maintain their market position and remain competitive under changing business conditions. The SME-RI was computed by standardizing the scores for each resilience dimension before combining them into a composite index. The standardization process was conducted using the min-max normalization method as follows:

$$X_{ij}^s = \frac{X_{ij} - \min(X_j)}{\max(X_j) - \min(X_j)} \dots \dots \dots (1)$$

Where X_{ij}^s denotes standardised value for SME i on indicator j , X_{ij} refers to original value for SME i on indicator j , $\min(X_j)$ refers to minimum value of indicator j and $\max(X_j)$ refers to maximum value of indicator j . This transformation converts all dimension scores into a standard scale ranging from 0 to 100. Table 1 depicted the scale of the resilience index score. The index is measured on a scale from 0 to 100 and is divided into three resilience levels: low, moderate and high. SMEs with an index value of 0 to below 50 are categorised as having low resilience. This means that these firms may have weak capacity to survive, adapt, or recover when facing economic shocks, financial difficulties, market uncertainty, or operational disruptions. On the other hand, SMEs with an index value of 50 to below 75 are classified as having moderate resilience. This indicates that the firms have some ability to manage challenges and continue their business operations, but they may

still need improvement in areas such as financial stability, competitiveness, governance, technology adoption, and government support. Meanwhile, SMEs with an index value of 75 to 100 are categorised as having high resilience. These SMEs are considered more capable of adapting to change, maintaining business continuity, responding to uncertainty, and recovering from disruptions.

Table 1. SME Resilience Index (SME-RI) Scale

Index Value	Scale
$0 \leq \text{SME-RI} < 50$	Low
$50 \leq \text{SME-RI} < 75$	Moderate
$75 \leq \text{SME-RI} \leq 100$	High

Source: Sarma (2015) and Oumatou and Celestin (2021)

Overall, the SME-RI scale provides a useful benchmark for identifying the resilience level of SMEs. It allows researchers and policymakers to compare SMEs across different sectors, locations, and business characteristics, as well as to identify firms that require targeted support and intervention.

The survey data collected was analyzed using SPSS and Microsoft Excel. Frequency and percentage were used to classify SMEs according to resilience level. The analysis was conducted by state and business sector to identify differences in SME resilience patterns across Perlis, Kedah, and Pulau Pinang, as well as across agriculture, manufacturing, services, and construction sectors. In addition, the scores for the three SME-RI dimensions were compared to identify the strongest and weakest aspects of SME resilience.

In addition to the survey, a focused group discussion (FGD) was conducted to support and validate the quantitative findings. The FGD involved representatives from key agencies and stakeholders involved in SME development, including the Northern Corridor Implementation Authority (NCIA), Bank Muamalat, Majlis Amanah Rakyat (MARA), and SME owners. The purpose of the FGD was to obtain deeper insights into the challenges faced by SMEs, particularly in relation to access to finance, institutional support, business preparedness, competitiveness, and resilience during uncertain economic conditions.

The FGD also provided an opportunity for agencies and SME owners to discuss the practical implications of the SME-RI findings. Inputs from NCIA, Bank Muamalat, MARA, and SME representatives helped explain the reasons behind the quantitative results, especially the lower score for financial stability and the stronger performance in uncertainty environment and competitiveness. The qualitative information from the FGD was used to strengthen the interpretation of the findings and to support the formulation of policy recommendations.

Overall, the combination of survey analysis, SME-RI computation, and FGD input provided a more comprehensive understanding of SME resilience in the Northern Region of Malaysia. The SME-RI serves as a diagnostic tool to evaluate the overall resilience performance of SMEs, while the FGD helps contextualize the findings from the perspectives of institutions and business owners. Through this approach, the study provides empirical evidence on the resilience capacity of SMEs and highlights the importance of strengthening financial stability, business preparedness, institutional support, and sector-specific intervention to enhance long-term SME sustainability.

RESULTS AND DISCUSSION

Table 2 shows the socio-demographic profile of the study respondents, involving 139 SMEs. In terms of business type, the majority of respondents operated as Sdn. Bhd. companies (46.04 percent) and sole proprietorships (41.73 percent), while the remaining respondents were partnerships (12.23 percent).

Table 2. Socio-Demographic Profile

Variable	Category	Frequency (n)	Percentage (%)
Type of business	Sdn. Bhd.	64	46.04
	Sole proprietorship	58	41.73
	Partnership	17	12.23
SME category	Small	73	52.52
	Medium	53	38.13
	Micro	13	9.35
	Services	73	52.52
Business sector	Manufacturing	41	29.50
	Agriculture	18	12.95
	Construction	7	5.04
	Pulau Pinang	65	46.76
State	Kedah	61	43.88
	Perlis	13	9.35
	RM300k-RM500k	58	41.73
Annual sales	> RM3 million	20	14.39
	RM1-3 million	19	13.67
	< RM300k	18	12.95
	RM500k-RM750k	13	9.35
	RM750k-RM1 million	11	7.91
	RM50k-RM100k	50	35.97
	> 250k	38	27.34
Annual profit	< RM50k	17	12.23
	RM100k-RM150k	17	12.23
	RM150k-RM200k	12	8.63
	RM200k-RM250k	5	3.60
	RM50k-RM100k	58	41.73
	> RM250k	24	17.27
	No debt	18	12.95
Current debt	< RM50k	14	10.07
	RM100k-RM150k	10	7.19
	RM200k-RM250k	8	5.76
	RM150k-RM200k	7	5.04
	Bumiputera	116	83.45
Business ownership	Non-Bumiputera	20	14.39
	International	3	2.16
	Male	75	53.96
Gender	Female	64	46.04

Source: SPPSS's calculation based on the data surveyed

In terms of firm size, most respondents were small SMEs (52.52 percent), followed by medium-sized SMEs (38.13 percent), while only 9.35 percent were micro SMEs. This indicates that the study sample was dominated by small and medium-sized firms, which are generally more exposed to economic shocks, particularly those caused by the COVID-19 pandemic. With regard to business sector, most respondents were involved in the services sector (52.52 percent), followed by manufacturing (29.50 percent), agriculture (12.95 percent), and construction (5.04 percent). In terms of geographical location, most SMEs were located in Pulau Pinang (46.76 percent) and Kedah (43.88 percent), while only 9.35 percent were located in Perlis. This distribution reflects the focus of the study on SMEs operating in the northern region of Malaysia. From a financial perspective, the majority of SMEs recorded annual sales within the range of RM300,001 to RM500,000 (41.73 percent), while the largest proportion reported annual profits within the range of RM50,001 to RM100,000 (35.97 percent). In addition, most firms had current debt between RM50,001 and

RM100,000 (41.73 percent), while 12.95 percent reported having no debt. In terms of business ownership, most SMEs were owned by Bumiputera entrepreneurs (83.45 percent), followed by non-Bumiputera owners (14.39 percent) and international owners (2.16 percent). With regard to gender, the composition of respondents was relatively balanced, with 53.96 percent male and 46.04 percent female. Overall, the respondent profile reflects the typical characteristics of SMEs in Malaysia, particularly those operating in the northern region. Therefore, the sample is considered suitable for assessing post-pandemic business resilience among SMEs.

Table 3 presents the Small and Medium Enterprise Resilience Index (SME-RI) by state and shows that most SMEs in Perlis, Kedah, and Pulau Pinang exhibited moderate to high levels of resilience, indicating a generally satisfactory level of resilience among businesses in the Northern Region of Malaysia. In Perlis, 61.5% were classified as having moderate resilience, 30.8% as high resilience, and 7.7% as low resilience. In Kedah 52.4% were categorized as having moderate resilience, 44.3% as high resilience, and 3.3% as low resilience, representing the highest proportion of highly resilient SMEs among the three states. In Pulau Pinang, 61.5% were classified as having moderate resilience, 33.9% as high resilience, and 4.6% as low resilience. This suggests that most SMEs in Pulau Pinang have a stable level of resilience, although there remains room to strengthen their preparedness and adaptability. Overall, out of 139 SMEs surveyed, 57.6% were categorized as having a moderate level of resilience, 38.1% as highly resilient, and only 4.3% as having low resilience. These results indicate that the majority of SMEs in the three states possess moderate to strong resilience. Among the states, Kedah recorded the highest proportion of highly resilient SMEs, highlighting its relatively stronger capacity to cope with uncertainty and external shocks.

Table 3. The Small and Medium Enterprise Resilience Index (SME-RI) level by states

State	Perlis		Kedah		Pulau Pinang		Total	
SME-RI level	No.	%	No.	%	No.	%	No.	%
Low	1	7.7	2	3.3	3	4.6	6	4.3
Moderate	8	61.5	32	52.4	40	61.5	80	57.6
High	4	30.8	27	44.3	22	33.9	53	38.1
Total	13	100	61	100	65	100	139	100

Source: SPSS's calculation based on the data surveyed

Table 4 presents the Small and Medium Enterprise Resilience Index (SME-RI) by business sector. The results indicate that most SMEs across all sectors exhibited moderate to high levels of resilience. Businesses in the agriculture sector (18 SMEs), 66.7% were classified as having moderate resilience and 33.3% as having high resilience, with no SMEs falling into the low resilience category. Businesses in the manufacturing sector (41 SMEs), 61.0% were categorized as having moderate resilience, 36.6% as having high resilience, and 2.4% as having low resilience. Businesses in the service sector (73 SMEs), which recorded the highest number of respondents, 53.5% were classified as having moderate resilience, 39.7% as having high resilience, and 6.8% as having low resilience. Businesses in the construction sector (7 SMEs), 57.1% were categorized as having moderate resilience and 42.9% as having high resilience, with no SMEs classified as having low resilience.

Table 4. The Small and Medium Enterprise Resilience Index (SME-RI) by business sector

Business sector	Agriculture		MAnufacturing		Service		Construction		Total	
SME-RI	No.	%	No.	%	No.	%	No.	%	No.	%
Low	0	0	1	2.4	5	6.8	0	0	6	4.3
Moderate	12	66.7	25	61	39	53.5	4	57.1	80	57.6
High	6	33.3	15	36.6	29	39.7	3	42.0	53	38.1

Total	18	100	41	100	73	100	7	100	139	100
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Source: SPSS's calculation based on the data surveyed

Overall, of the 139 SMEs surveyed, 57.6% were categorized as having a moderate level of resilience, 38.1% as having a high level of resilience, and only 4.3% as having a low level of resilience. These findings suggest that SMEs across all business sectors generally possess moderate to strong resilience. Businesses in the agriculture sector and construction sector recorded no SMEs in the low resilience category, indicating a relatively stronger capacity to cope with uncertainty and disruptions.

Figure 1 illustrates the three dimensions of the Small and Medium Enterprise Resilience Index (SME-RI): financial stability, uncertainty environment, and competitiveness across the four business sectors. The results reveal a broadly similar pattern across business sectors, indicating that SMEs share comparable resilience characteristics.

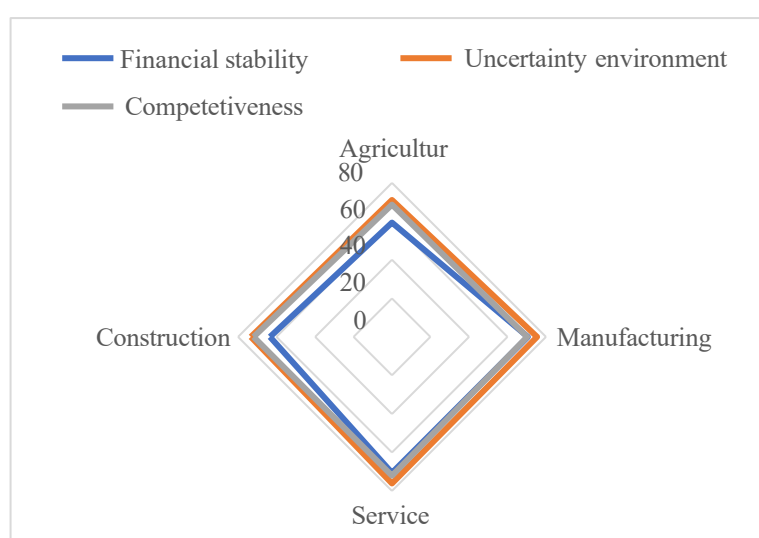


Figure 1. SME-RI by dimensions and business sectors

In every business category, the uncertainty environment dimension recorded the highest scores, ranging from 71 to 76, suggesting that SMEs are generally well equipped to anticipate and respond to external uncertainties and disruptions. Competitiveness also showed consistently strong performance, with scores ranging from 69 to 72. In contrast, financial stability recorded the lowest scores in all categories, particularly in businesses in agriculture sector (59) and businesses in construction sector (63), indicating that financial capacity remains the weakest dimension of resilience. Businesses in service sector demonstrated the strongest overall performance, achieving the highest scores in uncertainty environment (76) and competitiveness (72), along with a high score in financial stability (71). Businesses in manufacturing sector also performed well, while businesses in agriculture and construction sector exhibited relatively lower resilience due to weaker financial stability. Across all business sectors, the uncertainty environment dimension consistently recorded the highest scores, ranging from 71 to 76, indicating that SMEs were generally well prepared to manage external uncertainties and disruptions. Competitiveness also showed relatively strong performance, with scores ranging from 69 to 72. In contrast, financial stability recorded the lowest scores in all sectors, ranging from 59 to 71, suggesting that financial capacity remains the most challenging aspect of resilience for many SMEs. Overall, businesses in service sector exhibited the strongest resilience performance, while businesses in agriculture recorded the lowest SME-RI score, largely due to weaker financial stability.

In conclusion, the findings of the SME-RI demonstrate that most SMEs in Perlis, Kedah, and Pulau Pinang possess moderate to high levels of resilience, reflecting their overall ability to withstand and adapt to uncertainties and external disruptions. Kedah recorded the highest proportion of highly resilient SMEs, indicating a comparatively stronger adaptive capacity among businesses in the state. Across business sectors, SMEs generally exhibited similar resilience patterns, with the majority categorized under moderate and high resilience levels. The analysis of SME-RI dimensions further revealed that uncertainty environment and competitiveness were the strongest aspects of resilience among SMEs, suggesting that businesses are relatively capable of responding to changing market conditions and maintaining competitiveness. However, financial stability consistently recorded the lowest scores across sectors, highlighting financial capacity as the main challenge faced by SMEs. Overall, the findings suggest that while SMEs in the northern region demonstrate satisfactory resilience performance, strengthening financial stability remains crucial to further enhance their long-term sustainability and resilience against future economic uncertainties and shocks.

CONCLUSION

The findings of this study indicate that SMEs in the northern region of Malaysia demonstrate a generally satisfactory level of resilience. The SME-RI results show that uncertainty environment and competitiveness are the strongest dimensions of SME resilience. This suggests that SMEs in Perlis, Kedah, and Pulau Pinang are relatively capable of adapting to changing market conditions, responding to external uncertainties, and maintaining their competitive position. However, financial stability consistently recorded the lowest scores across sectors, indicating that financial capacity remains the main weakness affecting SME resilience.

These findings have important implications for SME development and policy intervention. Although SMEs show positive resilience in managing uncertainty and maintaining competitiveness, their long-term sustainability depends strongly on financial strength. Therefore, improving access to financial support, strengthening financial management skills, enhancing business preparedness, and providing sector-specific assistance are essential to sustain SME resilience against future economic disruptions. Financial institutions, government agencies, and SME development bodies should provide more targeted assistance, especially for SMEs with weaker financial capacity. The SME-RI also provides a practical diagnostic tool for identifying vulnerable SMEs and guiding evidence-based policy interventions to support stronger, more sustainable, and more resilient SME development.

Future research should expand the geographical scope by including more states or conducting a nationwide study. A larger and more diverse sample should also be used to strengthen the reliability of the findings. In addition, future studies should include other important resilience dimensions such as digital technology adoption, innovation, leadership, human capital, government support, supply-chain resilience, and business networking. Since this study uses cross-sectional data, future research may apply longitudinal methods to examine how SME resilience changes over time.

BIBLIOGRAPHY

- Bartik, A. W., Bertrand, M., Cullen, Z. B., Glaeser, E. L., Luca, M., & Stanton, C. T. (2020). How are small businesses adjusting to COVID-19? Early evidence from a survey (NBER Working Paper No. 26989). National Bureau of Economic Research. DOI: 10.3386/w26989
- Department of Statistics Malaysia. (2025). Micro, small and medium enterprises performance 2024. Department of Statistics Malaysia.

- Duchek, S. (2020). Organizational resilience: A capability-based conceptualization. *Business Research*, 13, 215–246. DOI: 10.1007/s40685-019-0085-7
- Herbane, B. (2019). Rethinking organizational resilience and strategic renewal in SMEs. *Entrepreneurship & Regional Development*, 31(5–6), 476–495. DOI: 10.1080/08985626.2018.1541594
- Kahveci, E. (2025). Digital transformation in SMEs: Enablers, interconnections and strategic pathways. *Administrative Sciences*, 15(3), Article 107. DOI: 10.3390/admsci15030107
- Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. *Human Resource Management Review*, 21(3), 243–255. DOI: 10.1016/j.hrmr.2010.07.001
- Lestari, E. D., Susanto, P., Hoque, M. E., & Omar, A. R. C. (2024). Investigating the factors of SMEs' business resilience in the aftermath of the COVID-19 pandemic: The role of technology adoption. *Cogent Business & Management*, 11(1), Article 2301135. DOI: 10.1080/23311975.2023.2301135
- Malik, F. S., & Terzidis, O. (2026). The metamorphosis of organizational resilience: A strategic roadmap for SMEs in the digital age. *Review of Managerial Science*. DOI: 10.1007/s11846-026-01002-3
- OECD. (2024). SME digitalisation to manage shocks and transitions. OECD Publishing.
- Óri, D., Szabó, I., Kő, A., & Kovács, T. (2024). Digitalizing in crisis: The role of organizational resilience in SMEs' digitalization. *Journal of Enterprise Information Management*, 37(4), 1185–1208. DOI: 10.1108/JEIM-09-2022-0343
- Pal, R., Torstensson, H., & Mattila, H. (2014). Antecedents of organizational resilience in economic crises: An empirical study of Swedish textile and clothing SMEs. *International Journal of Production Economics*, 147, 410–428. DOI: 10.1016/j.ijpe.2013.02.031
- Petropoulou, A., Angelaki, E., Rompogiannakis, I., Passas, I., Garefalakis, A., & Thanasis, G. (2024). Digital transformation in SMEs: Pre- and post-COVID-19 era. *Sustainability*, 16(23), Article 10536. DOI: 10.3390/su162310536
- Sarma, M. (2015). Measuring financial inclusion. *Economics Bulletin*, 35(1), 604–611.