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Building tourism SMEs' business resilience through adaptive capability, supply chain collaboration and strategic human resource

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Abstract

Small- and medium-sized enterprises (SMEs) play a significant role in the global economy, particularly, in tourism and hospitality. However, they face challenges due to their vulnerability to external disruptions. A research model was proposed to enhance SME resilience in tourism through supply chain collaboration, strategic human resource and adaptive capability. Drawing on Dynamic Capability Theory, a total of seven hypotheses were presented. The data collection were conducted in Malaysia. There were 210 SME owners/managers participated in the survey. Data were analysed using Smart PLS software version 4. Results suggest that addressing business collaboration and human resource development are critical factors in developing capabilities that foster business resilience in tourism SMEs. The study addresses the dearth of theoretical and practical research on tourism SMEs. While calling SMEs for more attention to developing resilient businesses, this study serves as insights for disaster planning to withstand potential future shocks.

KEYWORDS
adaptative capability, resilience, small- and medium-sized enterprises, strategic human resources, supply chain collaboration, tourism

1 | INTRODUCTION

Small- and medium-sized enterprises (SMEs) play a crucial role in the economies of nations worldwide. Among all industries, tourism stands out as a lucrative sector that creates significant employment opportunities and generates income (Moreno de la Santa, 2020). There are various local economic activities led by SMEs in the tourism sector contribute to improving economic development, reducing poverty and enhancing rural livelihoods. However, the impact of natural disasters, economic downturns, political instability, and health crises on tourism is difficult to predict. These cause SMEs in the tourism sector (tourism SMEs) to experience disruptions. Take for instance, the recent pandemic has caused SMEs to experience facility malfunctions, supply chain disruptions and service interruptions (Etemad, 2020). Although aid measures have been implemented by governments to support or increase funding for SMEs, external assistance should be synchronized with their internal competencies and capabilities (Kahveci, 2023). Addressing the resilience issues of SMEs is crucial and neglecting these problems could result in business insolvencies and bankruptcies (Choong et al., 2023; Seow et al., 2021). In times of unfavourable situations, tourism SMEs are forced to compromise performance, competitiveness and overall business strength to ensure the survival of their businesses (Abuhussein et al., 2023; Choong et al., 2022). Tourism SME owners require critical managerial skills to effectively manage their businesses, including seeking advice and implementing strategies for business continuity (Hadjielias et al., 2022; Mafimisebi et al., 2023). They must extend their recovery approach and raise their strength to

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resist in the competitive environment (Gunasekaran et al., 2011; Smith et al., 2022; Sullivan-Taylor & Branicki, 2011).

The SMEs in the tourism industry are highly adaptable to changes in consumer preferences, economic conditions and global events (Thukral, 2021). For instance, being responsive to changes in traveller preferences, market demands and external factors such as geo-political events or health crises. This could mean adjusting tour itineraries, accommodation offerings, or transportation services based on evolving customer needs. The better SMEs' ability to quickly adjust their offerings, marketing strategies and business models, the better they can withstand market fluctuations (Peñarroya-Farell & Miralles, 2022). Research in business resilience to identify vulnerable scenarios faced by SMEs in the tourism sector is essential. At present, there are no conclusive studies on the resilience of SMEs in the tourism industry. The authors acknowledge the research gap and the strategic significance of creating contingency plans to prepare for potential crises.

This study emphasizes the capabilities of tourism SMEs to maintain a strong market position, be proactive in improving their business operations and develop innovative solutions to navigate crises. The aims and objectives of this paper is two-fold. First, to examine the direct effects of supply chain collaboration and strategic human resources on adaptive capability and business resilience. Second, to test the mediating effect of adaptive capability on the relationship between supply chain collaboration and business resilience, as well as the relationship between strategic human resources and business resilience. These comprehensive findings could drive SMEs' commitment to business resilience, allowing them to effectively address challenges and ensure sustained operation within the dynamic business environment.

2 | LITERATURE REVIEW

2.1 | Underpinning theory

Dynamic Capability Theory (DCT) was defined as 'The ability to sense and then seize new opportunities, and to reconfigure and protect knowledge assets, competencies, and complementary assets to achieve a sustained competitive advantage' (Teece 2007, p. 520). The early assertions of dynamic capabilities were found in Teece (2007)'s work. Later, Helfat (2007) disaggregated capabilities into technical fitness (how effectively a capability is performed) and dynamic fitness, which refers to external fitness (whether the exact activity is being performed). Dynamic capabilities, therefore, relate to the firm's ability to sense, seize and transform to generate and exploit internal and external firm-specific competencies while responding to and shaping the environment. In a turbulent environment, changes in the status quo can cause uncertainty in implementing business plans and lead to ambiguous expected outcomes. Tourism SMEs need to be able to sense opportunities, seize opportunities and manage threats through the combination, recombination and reconfiguring of assets inside and outside of the firm's boundaries. They must adapt to the new norm and help shape their business environment, particularly, with the help of technological innovation. Therefore, dynamic capabilities can be viewed as the 'contemporary' behavioural theory of the firm to recognize the importance of intangible assets, outsourcing, offshoring and rapid change and such phenomena can be regarded as the central features of the firm's financial prudence for tourism SMEs to compete.

2.2 | Business resilience

The stipulated definition and measurement of tourism SMEs' business resilience and its influencing variables are crucial, thereby expanding the body of knowledge is important (Saad et al., 2021). The term business resilience refers to 'the firm's ability to persevere in their business when facing substantial changes in the business and economic environment, and the ability to withstand disruptions and catastrophic events' (Acquaah et al., 2011, p. 5528). Business resilience, in the context of this study, refers to the enterprise's capacity to adapt and respond effectively to disruptions, ensuring the protection of both people and assets while sustaining uninterrupted tourism business operations. Thus, based on the theoretical support discussed, it is believed that integrating supply chain collaboration, strategic human resources management and adaptive capability into tourism SMEs' business operations, can enhance business resilience to various challenges, including economic downturns, natural disasters and unexpected events like pandemics. These factors enable SMEs to not only survive during difficult times but also thrive and seize growth opportunities.

2.3 | Supply chain, human resources, adaptive capability and business resilience

Previous studies have discussed several factors influencing business resilience in tourism SMEs, including supply chain, human resource and adaptive capability (Hermawati et al., 2020; Saad et al., 2021; Wasiuzzaman, 2019). Strong supply chain collaboration can facilitate rapid problem-solving and resource-sharing during crises by allowing a business to source materials from multiple suppliers and locations, hence, reducing vulnerability to SME disruptions (Osei & Asante-Darko, 2023; Stecke & Kumar, 2009). Meanwhile, effective human resource practices will ensure that the SMEs have the skills and capabilities necessary to navigate uncertainties, capitalize on emerging opportunities and drive necessary changes to business maintain resilience (Pertheban et al., 2023). Additionally, Reeves and Deimler (2011) indicate that monitoring market trends, customer preferences and competitor activities enables businesses to anticipate changes in demand and adapt their offerings accordingly which can differentiate SMEs from competitors and create value for customers. In brief, supply chain collaboration, strategic human resources and adaptive capability are important to enhancing the resilience of tourism SMEs by enabling them to anticipate, prepare for, respond to,

and recover from disruptions while maintaining their competitiveness and sustainability in the long run.

2.4 | Supply chain collaboration

Supply chain collaboration refers to the willingness of two or more separate organisations to work efficiently together, coordinating and conducting supply chain activities against mutual objectives (Cao et al., 2010). For tourism SMEs, collaborating within internal departments and external partners is essential to maintain an efficient flow in the supply chain. This ensures that tourists' demand is met on time and in full. By working with tourism providers, tourism SME businesses can maximize the benefits of cooperation in the supply chain, making it a critical practice in the tourism industry. These efforts are centred on supply chain forecasting, planning, development and replenishment functions (Zhang & Song, 2018). This metric essentially evaluates the level of collaboration between tourism SMEs and their suppliers in terms of risk management, revenue generation and cost-sharing (Wasiuzzaman, 2019). It assesses the tourism SMEs' ability to respond to both short-term and long-term changes, considering the extent of their collaboration and shared incentives with their supply chain partners to achieve their business performance goals (such as adapting to changes). Thus, it is proposed that:

H1: There is a positive relationship between supply chain collaboration and adaptive capability among tourism SMEs.

Supply chain collaboration has become a strategic option for businesses seeking commercial, social and environmental sustainability. The Supply Chain Management studies illustrate the importance of collaboration between firms. According to Soylu et al. (2006) and Cao and Zhang (2011), collaboration throughout the supply chain is a common way for businesses to exchange knowledge across the supply chain, make strategic partnerships to boost efficiency, and minimize total costs and inventories. Collaborating with partners in the supply chain can bring numerous benefits for businesses, such as sharing information, making joint decisions, sharing resources, aligning incentives, communicating collaboratively, aligning goals and creating knowledge. Thus, this study hypothesizes that:

H2: There is a positive relationship between supply chain collaboration and business resilience among tourism SMEs.

2.5 | Strategic human resources

Tourism SMEs' ability to adapt is largely influenced by the quality of their human resources strategy. Human Resource practices in tourism involve talent acquisition and retention strategies that secure a skilled and customer-focused workforce (Brien & Hamburg, 2014). As employees meet tourists' evolving needs and expectations, it leads to tourism business potential. The tourism industry may face unique challenges, including seasonality and fluctuations in demand. Implementing strategic human resource practices can enhance its flexibility and adaptability (Heilmann et al., 2020). Skilled and proficient employees tend to adapt better to dynamic market conditions, contributing immensely to the long-term competitive advantage of the tourism industry (Teece, 2007).

For tourism SMEs to effectively manage and transform internal factors, such as management restructuring and resilience, tourism SMEs must have the adaptive capability to respond appropriately to the environment (Karaevli & Tim Hall, 2006). For instance, strategic human resource programmes and strong adaptive capability are essential for tourism SMEs responding to the changing business environment (Ali et al., 2017). This includes the ability of tourism SMEs to revolve, understand and respond to evolving situations, including handling demanding conditions, adapting to unexpected situations positively, and maximizing business gains while minimizing possible losses. Hermawati et al. (2020) indicated that the performance of human resources of tourism SMEs will influence the adaptive capability of the business. Tourism SMEs have better business performance if they emphasize the practice of innovative strategy apart from adopting social platforms and business planning extent (Seow et al., 2021). Boxall and Huo (2022) further implied that a well-designed strategic human resource framework can foster the cultivation and retention of experienced employees with enhanced adaptive capabilities. Based on the discussion above, it is hypothesis that:

H3: There is a positive relationship between strategic human resources and adaptive capability among tourism SMEs.

Tourism SMEs face various external factors that can affect their business significantly. These factors include changes in market demand and supply for tourism activities, increasing competition, evolving customer preferences, advancements in innovation, and the need to adapt to emerging technologies. The ability to adjust to these changes is crucial for the success and resilience of tourism SMEs, specifically, the strategic human resource aspect influences business resilience. Previous studies reported the vital role that human resources play in the resilience of SMEs (Abylaev et al., 2014; Biggs et al., 2015; Saad et al., 2021). According to Biggs et al. (2015), highly skilled employees and well-experienced management are critical contributors to tourism SMEs' adaptability and business resilience. These human resource factors are believed to improve management efficiency by creating resilience among tourism SMEs to minimize vulnerabilities in managing risk (Abylaev et al., 2014). In addition, better-managed firms with strategic human resources have a higher chance of ensuring business success during economic crises (Saad et al., 2021).

Effective resource allocation can improve the resilience of tourism SMEs, including the proper management of employees. Tourism SMEs must prioritize the potential of their human resources, providing incentives and opportunities for employees

(Douglas, 2021; Mitsakis, 2019). Hence, a strong employee's resilience can contribute to business resilience, supporting tourism SMEs during turbulent and uncertain business and economic times and it is proposed that:

H4: There is a positive relationship between strategic human resources and business resilience among Tourism SMEs.

2.6 | Adaptive capability and its role as a mediator

Wang and Ahmed (2007) defined adaptive capability as an organisation's ability to respond to environmental changes and align internal resources with external demands. Past studies done by Angle and Perry (1981), Akgun et al. (2013), Gibson and Birkinshaw (2004) and Tuominen et al. (2004) indicated that adaptive capability attribute has a significant impact on a firm's resilience as it describes the firm's capability to maintain positive performance. Chowdhury et al. (2019) asserted that tourism-related organisations possessing enhanced adaptive capabilities demonstrate increased effectiveness in the implementation of recovery strategies, thereby ensuring the sustained performance of their business operations. This adaptability becomes crucial in addressing the dynamic challenges the tourism industry faces, such as changes in traveller preferences, geopolitical shifts and unexpected disruptions. By aligning with this perspective, tourism businesses can enhance their resilience and adeptly implement strategies to safeguard and optimize their overall performance in the face of uncertainties.

There are several characteristics related to adaptive capabilities that can have an impact on the resilience of tourism SMEs: organisational adaptive capability, market adaptive capability, technological adaptive capability and management system adaptive capability. Those adaptive capability aspects explained the firm's ability to modify the existing product to meet customer's demand and competitor behaviour, to upgrade the existing products for new markets and to allocate resources for marketing activities using desired technologies. Tourism SMEs' adaptability to risk, growth and business opportunity enables them to bounce back without breaking and deliberate effort to become better able to cope with changes in the environment. For instance, innovative marketing strategies and diversification of services have proven instrumental in expanding their reach and mitigating disruptions caused by unforeseen circumstances (Martínez-Román et al., 2015).

Adaptive capability is an important source of sustainable competitive advantage, leading to resilient organisations. Duchek (2020) reported that the increasing adaptive capability can be a practical guide for improving business resilience. Adaptive capability concepts of management of vulnerabilities and responsiveness are linked to resilience at the business level. The adaptation aspect of tourism SMEs to changing and complex situations in their environments signifies keeping positive growth (Saad et al., 2021). Hence, it is hypothesis that:

H5: There is a positive relationship between adaptive capability and business resilience among SMEs.

Zhou and Li (2010) stated that the ability of a firm to utilize various adaptive capability strategies from the perspective of supply chain collaboration can increase its performance. However, firms that cannot pursue product–market opportunities have lower adaptive capabilities and weak responses to external opportunities. Adaptive capability can build a robust supply chain collaboration (such as with individual customers and suppliers) and contribute to business resilience (Oktemgil & Greenley, 1997). The adaptive capability may encourage the adoption of new processes and routines in developing and influencing the existing relationships among the supply chain partners (Chen & Taylor, 2016). The adaptability of SMEs serves as a reflection of their overall capabilities in responding to the demands of target markets (Cao & Zhang, 2011). This flexibility allows them to extend their reach across the supply chain network and system, thereby improving their ability to adapt to dynamic market changes. Additionally, Rastegar et al. (2023) conveyed that diversifying supply chains and tapping into local and diverse markets, were found to be effective in helping Tourism SMEs in developing countries such as Iran to survive, recover and thrive. Chowdhury and Quaddus (2016) highlighted the importance of supply chain collaborations for tourism-related businesses. They indicated that tourism entities fostering strong partnerships within their supply chains are better equipped to make informed decisions regarding the development of readiness capabilities, particularly, in response and recovery phases. This collaborative approach not only enhances the resilience of tourism businesses but also facilitates effective decision-making during times of uncertainty, ultimately contributing to the overall preparedness and adaptability of the industry. Consequently, this adaptive approach contributes to the overall performance of tourism SMEs.

Ponomarov and Holcomb (2009) found that the supply chain's adaptive capability helps prepare for unexpected situations, respond to disruptions and recover by maintaining continuity of organisational resilience. In the context of this study, the adaptive capability of SMEs in the tourism business can minimize the probability of facing sudden disturbances. They can respond with immediate and effective reactive plans to transcend the disturbance and restore the supply chain to a robust state of tourism SME's business performance (Kamalahmadi & Parast, 2015). Therefore, it is proposed that:

H6: Adaptive capability mediates the influence of supply chain collaboration and business resilience among tourism SMEs.

Shela et al. (2023) found a significant positive effect on adaptive capability, human resources and a firm's resilience. The authors concluded that the top management's understanding of how to sustain business resilience by leveraging strategic human capital is crucial and would achieve greater adaptive capacity and become more resilient during economic turbulence. Additionally, Wei and Lau (2010) and Yu et al. (2022) suggested that strategic human resources involve a continuous adaptation process to maximize the flexibility and efficiency of a firm's employees.

Tourism SMEs that exhibit higher levels of flexibility and competitiveness are poised to strengthen their adaptive capabilities.

This includes enhancing the adaptability of their strategic human resources, leading to an overall improvement in the firm's performance. Business operators with efficient human resources and skills tend to be more prepared for adversity and flexible when encountering business crises (Denyer, 2017). Furthermore, according to Gamage et al. (2023), strategic resource management demands the use of human capital to achieve business agility and resilience within SMEs operating in the tourism sector. In this study, the adaptive capability of tourism SMEs refers to the firm's ability to sustain positive performance, seize business opportunities and contribute to firm resilience development (Biggs et al., 2015). Hence, based on the above discussion, it is hypothesized that:

H7: Adaptive capability mediates the influence of strategic human resources and business resilience among tourism SMEs.

2.7 | Proposed research model

The proposed research model of this study is illustrated in Figure 1. The model suggests that supply chain collaboration and strategic human resources are both predictors of adaptive capability and business resilience. Additionally, adaptive capability is evaluated as a mediator for the direct relationships between supply chain collaboration and business resilience, as well as between strategic human resources and business resilience.

3 | RESEARCH METHODOLOGY

3.1 | Research design

This study uses a quantitative cross-sectional approach to address the research objectives of building business resilience through adaptive capability, supply chain collaboration and strategic human resources. The absence of a complete and updated tourism SMEs list resorted to using a nonprobability sampling technique. A purposive sampling technique was utilized to identify the targeted tourism SMEs based on the criteria of sales turnover or the number of employees as per SME Corp's description. Subsequently, the authors sought the owner or the senior management of tourism SMEs who are the decision makers (e.g., the director, vice president, president, senior manager, chief financial officer, etc.), and requested their voluntary participation in this study. The research objectives and procedures were then explained to the agreed participants.

3.2 | Data collection and instrumentation

The data were collected from five regions in Malaysia: The Northern Region, East Coast, Central Region, Southern Region and East Malaysia. Selecting diverse regions in Malaysia for data collection enhances the representativeness of the result findings. Additionally, SMEs from renowned tourist spots in these regions were chosen to ensure that the collected data aligns with the research objective of examining the interrelationship of adaptive capability, supply chain collaboration and strategic human resources in building Tourism SMEs' business resilience. The authors took 3 months to collect the data. Data cleaning and data processing were performed before proceeding to data analysis. A total of 210 complete responses were gathered, with a response rate of 42.0%.

The research instruments implemented in this study referred to the past established literature. The instruments were pretested by subject matter experts and industry practitioners before proceeding to pilot tests for the targeted respondents. Supply chain collaboration was adopted from Cao et al. (2010) with the sample measurement item 'The company coordinates with supply chain partners for smooth supply chain process'. In contrast, the measurement items of strategic human resources were adopted from Bouaziz and Smaoui

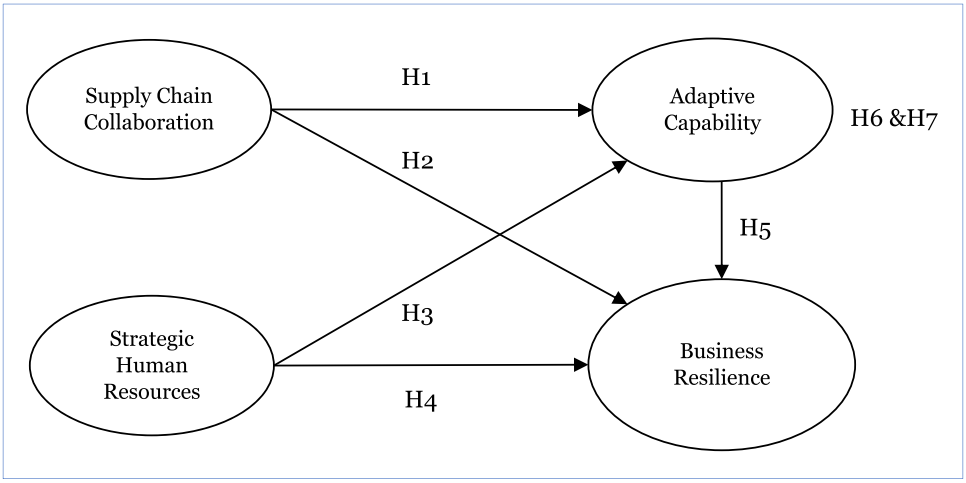


FIGURE 1 Proposed research model.

Hachicha (2018), for example, 'The company train and develops human resources to handle the crisis with unexpected challenges'. Meanwhile, the adaptive capability measurement items were referred to Lee et al. (2013) and McCann et al. (2009), for instance, 'The company is willing to make changes when facing uncertainty'. As for business resilience, the instruments were obtained from Bouaziz and Smaoui Hachicha (2018) and Tibay et al. (2018) such as 'The company can maintain its position in the market'. The measurement items are appended in Supporting Information S1: Appendix I. Following the pilot test results, all variables of interest are reliable and valid.

These data were collected using a self-administered questionnaire whereby the survey questions were designed explicitly and made accessible for the respondent to answer without interference from the researcher's assistance. This approach reduces the potential bias. The self-administered questionnaire contains two sections. The first section requires the respondents to fill up the enterprise profiles such as the size of the enterprise, type of business, years of establishment and the respondents' demographic information such as position, age and education level. The second section covers questions of the proposed conceptual model.

Common method bias (CMB) appears as a severe methodological issue in social sciences when the estimates of the relationships between two or more constructs are biased because the same method was used (Podsakoff et al., 2012). Henceforth, the data is susceptible to potential inflation of relationships that hamper the reliability and validity of the measures. Kock (2015) proposed to deal with the issue of CMB with a full multicollinearity test using variance inflated factor (VIF). A VIF value greater than 3.3 suggests the presence of CMB. The results in Table 1 show that VIF values were less than 2.5, indicating that the constructs in this study were not highly correlated with others.

3.3 | Data analysis

Variance-based partial least squares structural equation modelling (PLS-SEM) was employed to test the proposed model based on its three merits (Hair et al., 2021). First, the exploratory nature of this study that requires theory integration instead of theory confirmation (e.g., testing of adaptive capability theory for business resilience) is accommodated by PLS-SEM. Second, PLS-SEM can handle complex research models (e.g., involving many constructs and indicators and mediation effects). Third, PLS-SEM is a soft model that requires less restrictions in terms of data distribution assumptions. A two-stage approach of PLS-SEM (Anderson & Gerbing, 1988) was implemented to perform the analysis, as shown in Figure 2.

TABLE 1 Variance inflated factor.

Construct	Adaptive capability	Business resilience
Adaptive capability		1.614
Strategic human resource	1.68	2.073
Supply chain collaboration	1.68	1.728

3.4 | Measurement model

The evaluation of the measurement model involved checking construct reliability, convergent validity and discriminant validity. Convergent validity was assessed through indicator loadings and average variance extracted (AVE). As shown in Table 2, all indicator loadings were above the 0.600 threshold, and AVEs exceeded the recommended level of 0.500. Additionally, the Cronbach α values are above .700, which conforms to reliable measures. Items with loading lower than .600 such as AC1, AC6, AC8, AC9, AC10, SHR1, SHR2, SHR5, SHR6, SHR8, AC1 and AC6 were removed during the data inspection. The internal consistency for all constructs was then examined for composite reliability and they were deemed satisfactory, with composite reliability values surpassing the recommended value of 0.700 (Hair et al., 2021).

Subsequently, discriminant validity was examined using the heterotrait-monotrait ratio of correlations (HTMT) criterion proposed by Henseler et al. (2015). Henseler et al. (2015) added that establishing discriminant validity, with the HTMT statistics, should not exceed 0.90 or 0.85. Referring to Table 3, none of the HTMT values are greater than 0.90 (Henseler et al., 2015). Moreover, all the values of the confidence interval in Table 3 do not have a value of 1 in between, which indicates that all HTMT values are significantly different from 1 (Henseler et al., 2015). Hence, it is concluded that the discriminant validity for the present study is established.

4 | RESULTS

4.1 | Descriptive analysis

4.1.1 | Tourism SMEs and respondents' profiles

The responses collected mirror the overall population of tourism SMEs in Malaysia. Micro-sized SMEs with sales turnover less than RM300,000 or employees less than 5, 42.38% dominated the responses of this study, followed by small-sized tourism SMEs with sales turnover between RM300,000 to RM 3 million or a total number of employees between five and 30, 36.67%; and medium-sized SMEs with sales turnover between RM 3 million to RM20 million or a total number of employees between 30 and 75, 20.95% (see Table 4). Regarding the establishment setup, sole proprietorship structure was recorded at 39.52%, followed by corporations' structure, at 30.95%, while partnership structure at 29.52%. Most of the tourism SMEs are incumbents who have been in business for more than 10 years (34.29%), followed by 3–6 years (30.48%), less than 2 years (21.90%) and between 7 and 10 years (13.33%). These data show that most SMEs are in the food and beverage sector,

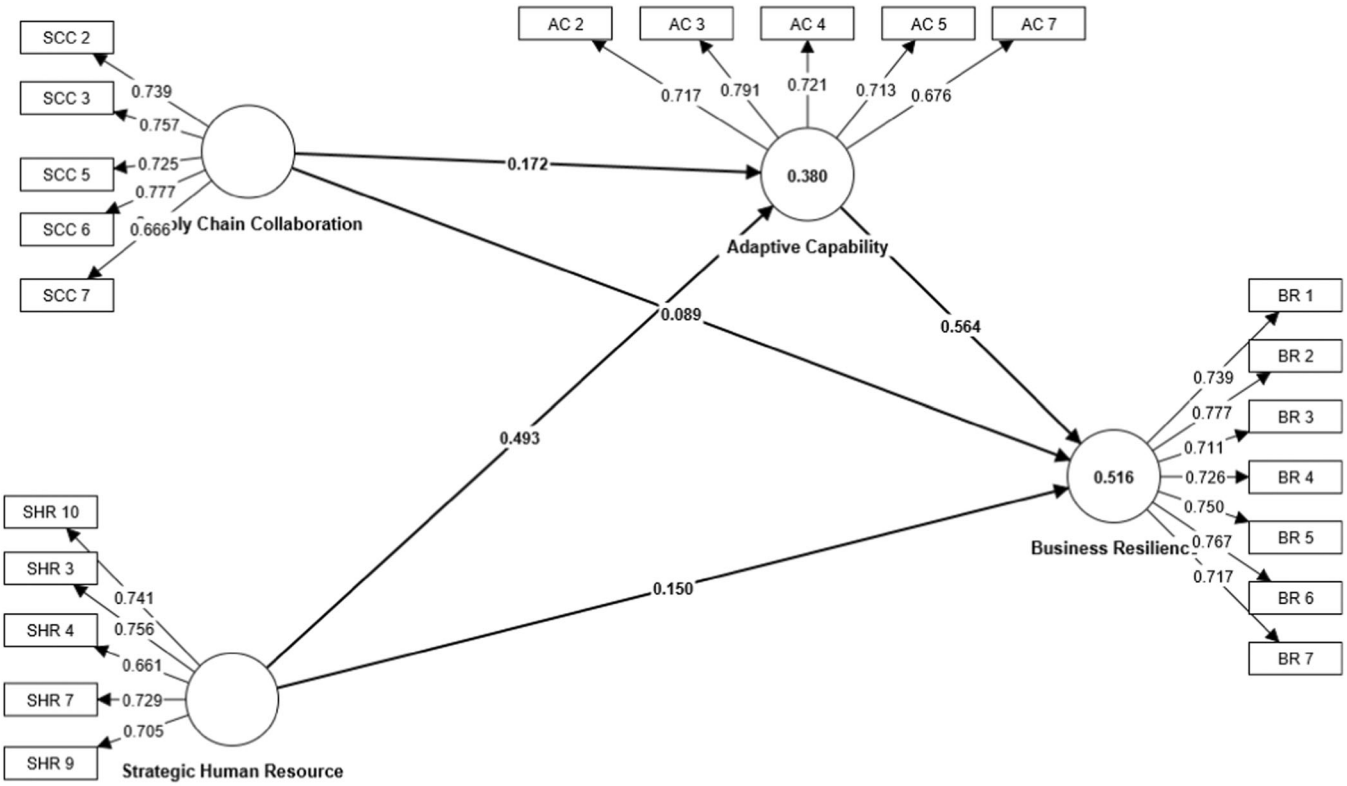


FIGURE 2 SmartPLS results of the research model.

35.57%, followed by the accommodation sector, 21.90% and the healthcare sector, 18.10%.

Apart from the tourism SMEs' profiles, the respondents' demographics, such as age group, position and educational background, were also gathered. Most respondents hold the manager position, 49.05%, while the owner group forms 34.29% of the responses, followed by the senior management group of 16.67% (see Table 5). The young respondents below or equal to 25 made up the majority of the respondents, 32.68%, followed by the age group of 26–35 years old, 24.76% and 36–45 years old, 23.33%. For the education background, degree holders formed that large response with 46.19%, followed by respondents with secondary school qualifications, 29.52% and the respondents with a diploma recorded at 21.43%.

4.2 | Structural model

The bootstrapping procedure using 10,000 resampling was conducted to generate the *t* values to measure the statistical significance of the path coefficients (Becker et al., 2023). The path co-efficient assessment is presented in Table 6, which shows that all the hypotheses (H1–H7) proposed in this study were significant except for H2. This shows that supply chain collaboration is only positively related to adaptive capability among the SMEs ($\beta = .172$, $p < .05$) but not related to business resilience ($\beta = .089$, $p > .05$). Hence, H1 is supported but not H2. Meanwhile, strategic human resources show a positive significant relationship with adaptative capability ($\beta = .493$, $p < .05$) and business resilience ($\beta = .150$, $p < .05$), thereby indicating that H3 and H4 are supported. Regarding the direct hypothesis between adaptive capability and business resilience, a significant positive result with $\beta = .564$, $p < .05$, and H5 is supported. As for the two indirect hypotheses, H6 and H7, with adaptive capability modelled as the mediator between supply chain collaboration and business resilience, and strategic human resource and business resilience, recorded $\beta = .097$ and $\beta = .278$, $p < .05$, respectively. Additionally, following Hayes and Rockwood (2017), no zero values are straddling between the lower and upper bound, indicating that the indirect hypothesis is supported. As such, H6 and H7 are supported.

Thereafter, R^2, the variance explained in the dependent construct, business resilience and f^2 effect size were also examined, and the results are presented in Table 7. The R^2 for adaptive capability is .380, which indicates that 38.0% of the variance in adaptive capability can be explained by the significant independent variables of supply chain collaboration and strategic human resource while the R^2 for business resilience is .516, which informs that 51.6% of the variance in business resilience can be explained by the significant independent variables of supply chain collaboration and strategic human resource. According to Chin (2010), R^2 above .33 or 33.0% represent a moderate level of acceptance, and in this study, the R^2 values are higher than .33. The f^2 assesses the relative impact of the independent variable on the dependent variable. The results show that strategic human resource has a medium effect size on

TABLE 2 Measurement model evaluation.

Construct	Item	Loading	Cronbach's α	Composite reliability (rho_c)	Average variance extracted
Adaptive capability	AC 2	0.717	.773	0.846	0.525
	AC 3	0.791			
	AC 4	0.721			
	AC 5	0.713			
	AC 7	0.676			
Business resilience	BR 1	0.739	.864	0.895	0.550
	BR 2	0.777			
	BR 3	0.711			
	BR 4	0.726			
	BR 5	0.750			
	BR 6	0.767			
	BR 7	0.717			
Supply chain collaboration	SCC 2	0.739	.787	0.853	0.538
	SCC 3	0.757			
	SCC 5	0.725			
	SCC 6	0.777			
	SCC 7	0.666			
Strategic human resource	SHR 10	0.741	.766	0.842	0.517
	SHR 3	0.756			
	SHR 4	0.661			
	SHR 7	0.729			
	SHR 9	0.705			

TABLE 3 Discriminant validity.

Construct	1	2	3	4
1. Adaptive capability				
2. Business resilience	0.839 (0.775, 0.908)			
3. Strategic human resource	0.781 (06.85, 0.877)	0.661 (0.555, 0.755)		
4. Supply chain collaboration	0.603 (0.489, 0.721)	0.548 (0.421, 0.677)	0.815 (0.723, 0.906)	

adaptive capability ($f^2 = 0.233$) while supply chain collaboration has a small effect size on adaptive capability ($f^2 = 0.0.28$). Meanwhile, adaptive capability recorded a large effect size on business resilience ($f^2 = 0.408$), followed by strategic human resource and supply chain collaboration with a small effect size on business resilience with $f^2 = 0.022$ and $f^2 = 0.009$, respectively.

4.3 | Predictive model assessment

According to Shmueli et al. (2019), PLS-SEM follows a causal predictive approach, and, therefore, it has predictability power to assess a path model, which is named PLSpredict. PLSpredict is based on the concepts of separating training and holdout samples to estimate model parameters and evaluate the model's predictive power. Root mean squared error and mean absolute error (MAE) were used to ascertain the model's predictive power. PLSpredict assessment results are illustrated in Table 7. When PLS-SEM < Regression Model (LM) for the majority of the indicators in the PLS analysis have lower RMS and MAE values compared to the naïve LM benchmark, this indicates that the proposed research model possesses medium predictive power (Shmueli et al., 2019). Referring to Table 8, the majority of the indicators' PLS-SEM < LM in the PLS analysis have lower RMS and MAE values compared to the naïve LM

TABLE 4 SMEs' profiles.

Profiles frequency count		Percentage
Type of tourism SME		
Micro	89	42.38
Small	77	36.67
Medium	44	20.95
Type of business structures		
Sole Proprietorship	83	39.52
Partnership	62	29.52
Corporation	65	30.95
Year of establishment		
≤2 years	46	21.90
3–6 years	64	30.48
7–10 years	28	13.33
≥10 years	72	34.29
Type of business operation		
Food and beverage	81	38.57
Wholesale and retail trade	10	4.76
Accommodation	46	21.90
Maintenance and repair service	12	5.71
Healthcare	38	18.10
Professional service	11	5.24
Telecommunications service	10	4.76
Others	2	0.95
	210	100.0

Abbreviation: SME, small- and medium-sized enterprise.

TABLE 5 Respondents' profiles.

Profiles	Frequency count	Percentage
Position in the company		
Owner	72	34.29
Senior manager	35	16.67
Manager	103	49.05
Age group		
≤25	69	32.86
26–35	52	24.76
36–45	49	23.33
46–55	31	14.76
≥56	9	4.29
Education background		
Secondary school	62	29.52
Diploma	45	21.43
Bachelors of degree	97	46.19
Postgraduate	6	2.86
	210	100.0

benchmark. Additionally, the Q^2 values for the indicators of the PLS model are greater than zero. Based on these results, it is concluded that the model for the present study has a medium predictive power to represent reality.

5 | DISCUSSION

The current research offers several prominent findings. First, this study revealed that supply chain collaboration positively relates to adaptive capability. In alignment with the dynamic capability theory (DCT), the adept planning and execution of supply chain operations by tourism SMEs, particularly in collaboration with two or more autonomous companies, enhance their capacity to respond and flourish in a dynamic and ever-changing environment (Zhang & Song, 2018). This proactive engagement reflects the organisation's ability to dynamically adapt its operational strategies and capitalize on collaborative synergies, contributing to sustained competitiveness amid fluctuating conditions. For instance, when SMEs collaborate with their supply chain partners to identify customers' needs, they can adjust their strategies, processes and operations to tackle new challenges, capitalize on opportunities and stay competitive in ever-changing environments. Conversely, tourism SMEs without an integrated supply chain system with supply chain partners will struggle to adjust their operations and slow decision-making in responding to current market conditions (Iranmanesh et al., 2023; Van Nguyen et al., 2024). The results found that supply chain operation is not significantly related to business resilience. In essence, the efficiency of supply chain operations in SMEs does not directly influence their ability to adapt and respond to business disruptions or safeguard people and assets (Brusset & Teller, 2017; Koh et al., 2007).

Second, findings demonstrated that strategic human resource management positively relates to adaptive capability and business resilience among tourism SMEs. These findings are in line with prior findings such as Biggs et al. (2015), Saad et al. (2021), Ali et al. (2017) and Abylaev et al. (2014). Tourism SMEs actively adopting the future-oriented process of developing and implementing human resource-related programs are more likely to respond quickly to market changes and maintain their business performance even during global crises. Adopting strategic human resource management could help the firm foster a culture of adaptability, developing a skilled and agile workforce. Ultimately, it would ensure that employees are better equipped to navigate adversity, contribute innovative ideas and go the extra mile to support organisational resilience (Hermawati et al., 2020; Jaiswal et al., 2022). In essence, by aligning with the tenets of the DCT, tourism SMEs position themselves to thrive in dynamic and unpredictable environments through proactive and

TABLE 6 Hypotheses testing.

Direct and indirect hypotheses	Std β	T statistics	p Values	5.00%	95.00%	Decision
H1: Supply chain collaboration -> Adaptive capability	.172	2.292	.011	0.042	0.284	Supported
H2: Supply chain collaboration -> Business resilience	.089	1.207	.114	−0.029	0.216	Not supported
H3: Strategic human resource -> Adaptive capability	.493	6.578	.000	0.368	0.613	Supported
H4: Strategic human resource -> Business resilience	.150	2.256	.012	0.042	0.261	Supported
H5: Adaptive capability -> Business resilience	.564	9.37	.000	0.454	0.651	Supported
H6: Supply chain collaboration -> Adaptive capability -> Business resilience	.097	2.189	.014	0.025	0.166	Supported
H7: Strategic human resource -> Adaptive capability -> Business resilience	.278	5.347	.000	0.198	0.366	Supported

TABLE 7 Structural model assessment.

Construct	R^2	R^2 Adj	Effect size f^2	
			Adaptive capability	Business resilience
Adaptive capability	.380	.375		0.408 (substantial)
Business resilience	.516	.509		
Strategic human resource			0.233 (medium)	0.022 (small)
Supply chain collaboration			0.028 (small)	0.009 (small)

TABLE 8 PLSpredict assessment.

Indicator	Q^2 Predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE	PLS-SEM -LM RMSE	PLS-SEM -LM MAE
AC 2	0.182	0.674	0.513	0.674	0.512	0.000	0.001
AC 3	0.207	0.717	0.542	0.714	0.547	0.003	−0.005
AC 4	0.155	0.653	0.48	0.684	0.501	−0.031	−0.021
AC 5	0.214	0.697	0.51	0.734	0.532	−0.037	−0.022
AC 7	0.168	0.714	0.543	0.724	0.544	−0.010	−0.001
BR 1	0.174	0.659	0.496	0.666	0.51	−0.007	−0.014
BR 2	0.128	0.719	0.542	0.748	0.561	−0.029	−0.019
BR 3	0.079	0.666	0.489	0.702	0.499	−0.036	−0.01
BR 4	0.216	0.650	0.481	0.672	0.488	−0.022	−0.007
BR 5	0.122	0.733	0.577	0.757	0.594	−0.024	−0.017
BR 6	0.149	0.796	0.609	0.817	0.622	−0.021	−0.013
BR 7	0.225	0.724	0.582	0.748	0.584	−0.024	−0.002

Abbreviations: MAE, mean absolute error; PLS-SEM, partial least squares structural equation modelling; RMSE, root mean squared error.

strategic human resource practices. In addition, companies that integrate human resource strategies and activities with their strategic priorities enhance their performance and competitiveness, thereby developing more excellent adaptive capability to seize emerging opportunities and overcome potential threats (Gutierrez-Gutierrez et al., 2018). Tourism SMEs operate in a dynamic and highly competitive industry. Their ability to thrive relies heavily on their workforce's skills, knowledge and adaptability. Thus, effective strategic human resource management helps employees acquire new skills, stay updated with industry trends and become more adaptable. As argued in DCT, the emphasis on continuous learning and adaptation as essential components of dynamic capabilities would further enhance the tourism SMEs resilience in an uncertain environment (Quansah et al., 2022). Consequently, they could adjust and be flexible in accommodating a rapidly evolving business environment.

Third, the results of this study further confirmed that adaptive capability is positively related to business resilience among tourism

SMEs in Malaysia. This finding is congruent with prior studies such as Duchek (2020) and Saad et al. (2021). Adaptive capability enables tourism-related companies to be flexible and agile in responding to changes, disruptions and unpleasant events. It allows them to quickly adjust strategies, processes and operations to align with changing environment. This further facilitates tourism SMEs to withstand, adapt and recover more effectively. Additionally, if tourism SMEs are willing to adapt when facing unexpected challenges, they will bounce back more quickly in the face of adversity. This is supported by DCT where tourism SMEs with dynamic capabilities sense changes in their environment and can proactively and respond effectively. The enhanced capacity to adapt to a turbulent environment correlates with a greater ability to recover and sustain their business in the face of disruptive events. In essence, the more robust the capability to navigate dynamic conditions, the higher the likelihood of successful recovery and sustained business performance during unforeseen challenges.

Finally, this study found that adaptive capability significantly mediates the relationship between supply chain operation and business resilience and between strategic human resource management and business resilience. This is in line with DCT where companies with strong supplier relationships fostered through effective supply chain operations and responsive systems could enhance their adaptability in the dynamic business environment (Zhang & Song, 2018). Consequently, this further enhances companies' overall business resilience (Duchek, 2020; Saad et al., 2021). Kazancoglu et al. (2022) contended that tourism SMEs with agile supply chain operations allow for flexibility in dealing with challenges and enhance their responsiveness to unexpected turbulent events. These companies better anticipate and mitigate risks, reduce vulnerabilities and enhance overall business resilience. The findings also asserted that adopting strategic human resource management practices can increase employee's creativity, equipped with the latest skills and knowledge (Rasool et al., 2019). In turn, it enhances employee flexibility and continuously makes them better prepared for future disruptions. This develops their capacity to withstand, respond to, and recover from various internal and external threats that can impact business continuity (Duchek, 2020).

6 | CONCLUSION

This study's findings enrich the existing literature on business resilience by confirming the mediating role of adaptive capabilities in the proposed direct paths in the context of tourism SMEs. This has further support for the principles of DCT, which indicate the importance of an organisation's capacity to adapt and evolve its resources over time for sustained competitiveness. Three significant contributions are made. First, strategic human resource and supply chain collaboration positively relate to adaptive capabilities. Second, the impact of adaptive capabilities on business resilience is more significant in magnitude compared to strategic human resource management and supply chain collaboration. Third, adaptive capabilities fully mediate the relationship between supply chain collaboration and business resilience while partially mediating the relationship between strategic human resource management and business resilience. The thorough findings of this study have the potential to strengthen the capabilities of SMEs in the tourism sector to enhance business resilience. It enables them to proficiently confront challenges and maintain sustained operations within the dynamic and continually evolving business environments. As contended through DCT, this strategic enhancement not only equips these SMEs to navigate uncertainties but also positions them to capitalize on opportunities for growth and innovation.

6.1 | Theoretical implications

This study provides several theoretical implications. This study's theoretical underpinning draws upon DCT, providing a comprehensive research model to understand how tourism SMEs can enhance their adaptive capabilities. DCT emphasizes an organisation's ability to integrate, build and reconfigure internal and external competencies to address changing environments effectively (Teece, 2007).

First, the findings of this study indicate that strategic human resource has a more substantial effect on adaptive capabilities than supply chain collaboration. This aligns with the DCT's premise that a firm's ability to reconfigure its resources, particularly human resources, is crucial for sustaining a competitive advantage in dynamic markets. It implies that tourism SMEs should prioritize developing and implementing effective human resource programs to foster the cultivation and retention of experienced employees, thereby sustaining their competitive advantage (Harsch & Festing, 2020). Moreover, enterprises must cultivate strategic human resources by providing training for employees, empowering them to embrace flexibility and maintain agility in response to competitive environments. Therefore, enterprises, including tourism SMEs, are encouraged to invest in on-the-job training or mentorship, possibly provided by owners or managers to employees. However, for enterprises with limited resources, it is feasible to conduct informal training sessions for their employees. By doing so, employees become more adaptive to market situations and are better equipped to address environmental challenges effectively.

Second, this study also contributes to the business resilience literature to indicate that adaptive capabilities have the strongest effect on business resilience as compared to supply chain collaboration and strategic human resources on business resilience in the context of tourism SMEs. This suggests that employees with greater adaptability and capabilities can manage business operations when facing crises, strengthening their ability to survive and remain resilient during turbulent times (Thukral, 2021). This is consistent with the DCT's emphasis on continuous learning and adaptation as essential components of dynamic capabilities (Quansah et al., 2022). However, it is essential to note that tourism SMEs should not neglect the importance of strategic human resources, as they continue to play a critical role in bolstering business resilience.

Third, this study's finding also expands the existing knowledge of tourism SMEs by confirming that adaptive capabilities significantly mediate the proposed research model. Although supply chain collaboration is not significant towards business resilience, the statistical results revealed that supply chain collaboration can significantly influence business resilience through its impact on adaptive capabilities. As indicated by DCT, a firm's success does not solely come from its existing resources or capabilities. Instead, it comes from the company's skill in adapting and evolving those resources over time to stay competitive. Thus, the study directed the importance of adaptative capabilities between supply chain collaboration and business resilience, particularly in the context of tourism SMEs. In contrast, concerning the relationship between strategic human resources and business resilience, the study stipulated that adaptive capabilities serve as complementary variables. This suggests that strategic human resource practices can directly influence business resilience without necessarily relying on the mediating role of adaptive capabilities.

6.2 | Managerial implications

Several managerial implications can be presented based on three constructs: strategic human resource, supply chain collaboration and adaptive capability. For strategic human resources, tourism SMEs should design practical training and development programmes that enhance employees' skills, knowledge and abilities under the organisation's strategic needs. This ensures that employees have the necessary capabilities to fulfil their roles effectively, support the organisation's strategic initiatives and enhance their capability to be resilient. Additionally, tourism SMEs should foster a learning culture by involving employees in strategic decision-making processes (Nunez-Rios et al., 2022). This involvement provides valuable insights into the company's operations and business model, enabling them to develop a comprehensive understanding. Further, by cultivating a supportive learning environment, tourism SMEs empower employees to respond better to disruptive events, enhancing the organisation's overall resilience.

Next, the supply chain collaboration can be strengthened by actively engaging in collaborative partnerships with their supply chain counterparts. This is especially important to create a smooth supply chain process. Thus, the company can minimize disruptions, optimize resource utilisation and deliver products to customers promptly and cost-effectively (Correia et al., 2021). Tourism SMEs are strongly advised to cultivate close collaborations with their supply chain partners, jointly seeking solutions to address challenges rather than addressing this problem alone. This collaborative approach enables the development of effective problem-solving strategies and promotes a more resilient and efficient supply chain ecosystem.

Finally, it is worth noting that adaptive capability has been identified as a significant predictor of business resilience. Therefore, tourism SMEs are advised to adopt a flexible organisational structure that can effectively adapt to changes in the external environment (Giudice et al., 2021). This flexibility enables them to swiftly adjust their operations, strategies and resource allocation in response to uncertainties. To foster such adaptability, tourism SMEs should actively promote a culture of continuous learning within the organisation. This entails encouraging employees to proactively seek new knowledge, acquire additional skills and stay updated on industry trends (Jaiswal et al., 2022). By cultivating a culture of continuous learning, tourism SMEs also facilitate the development of robust problem-solving and critical-thinking skills among their employees. These skills empower individuals to analyse complex situations, adapt to emerging challenges and devise innovative solutions.

6.3 | Limitations and future research recommendations

Despite these valuable contributions, this study has limitations that provide avenues for future research. One limitation is the potential for self-report bias, a common issue in social science research. Future studies could adopt a mixed methods approach to address this bias to strengthen the reliability and depth of findings, promoting a more comprehensive understanding of the topic. Additionally, it is essential to note that these findings are limited to tourism SMEs and may not be directly applicable to nontourism SME sectors such as the construction sector, as well as large companies or multinational corporations with more than 200 employees or sales exceeding RM50 million. Therefore, it is recommended for future research scholars to replicate the study in the context of large companies and multinational corporations as well as in other nontourism SME sectors. Exploring these contexts may yield unexpected insights and findings that further contribute to the field. Moreover, a mixed method is encouraged to be adopted to conduct similar studies in the future. Such an approach is recommended as it may have the potential to yield more robust and comprehensive findings.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data sets generated during and/or analysed during the current study are not publicly available due the data is required to be kept confidentially which requested by third party but are available from the corresponding author on reasonable request.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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