

Environmental Turbulence And Strategic Flexibility Of Smes In Rivers State, Nigeria

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ABSTRACT: This study investigates at the association between environmental turbulence and strategic flexibility among Small and Medium Enterprises (SMEs) in Rivers State, Nigeria. Environmental turbulence was examined in two dimensions: market turbulence and technology turbulence, whilst strategic flexibility was evaluated using strategic agility and strategic choices. The study used a cross sectional research design. The accessible populations comprise of 385 managers and supervisors of 20 SMEs, within Rivers State. A sample of 196 was drawn using Krejcie and Morgan (1970) Table. A structured questionnaire was used to collect data. Spearman's rank-order correlation coefficient was used for the analysis. The findings reveals a strong positive associations between market turbulence, strategic agility, and Strategic options. Similarly, technological turbulence was substantially associated with strategic agility and Strategic options. These findings emphasise the importance of environmental dynamism in defining the strategic responsiveness and flexibility of SMEs. The study indicates that in order to survive and grow in volatile situations, SMEs must improve their agility and diversify their Strategic options. It proposes investing in market intelligence systems, using adaptive technology, and developing contingency planning processes. The study adds to the empirical literature on strategic management in emerging economies and offers practical insights for Nigerian policymakers, business support organisations, and SME practitioners.

Keywords: Environmental Turbulence, Strategic Flexibility, Technological Turbulence, Strategic Options.

INTRODUCTION

Strategic flexibility is a company's ability to quickly and efficiently adjust to changing external conditions through resource reallocation, strategy revision, and innovation (Combe & Carrington, 2020). It is the capacity to make quick decisions, experiment with alternative approaches, and seize fresh possibilities while managing risks. Small and medium-sized firms (SMEs) require strategic flexibility to succeed in an unpredictable and continuously changing business environment. SMEs are more vulnerable to external shocks, such as market volatility, economic downturns, technological disruptions, and regulatory changes, because they may have fewer financial, technological, and human resources than large corporations. Strategic flexibility allows SMEs to modify their strategies, reallocate resources, and adjust their operations in response to these changes. In the face of environmental disruption, SMEs that cultivate flexible strategic capabilities are more resilient and adaptable, allowing them to preserve continuity and competitiveness during emergencies like the COVID-19 pandemic (Al-Haddad et al., 2022).

The capacity to recognise and seize new opportunities, particularly in unpredictable situations, is a crucial aspect of strategic flexibility. Strategically adaptable SMEs can make swift changes, such as introducing new goods, breaking into untapped markets, or implementing cutting-edge technology. This flexibility frequently separates prosperous SMEs from those that falter under duress. Awan et al., (2023), suggest that SMEs with high levels of digital strategic agility were better equipped to react to digital disruption by instantly altering their supply chain and customer engagement plans. By instilling inventiveness and proactive thinking in organisational culture, responsiveness not only saves losses during difficult times, but also fosters long-term success. Strategic flexibility helps SMEs make better decisions by allowing them to execute many strategy options and change course as needed. In organisations with severe rivalry and rapid technological breakthroughs, this responsiveness is extremely vital. According to Combe and Carrington (2020), SMEs using adaptive strategic planning tools can embrace new strategy directions as market demands change, rather than being limited to old business models. Flexibility gives SMEs a competitive advantage by allowing them to capitalise on niche markets, respond rapidly to client feedback, and experiment with low-risk innovations, while adhering to their key operational objectives.

Additionally, by promoting experimentation, feedback, and adaptation, strategic flexibility enhances internal procedures and organisational learning. It creates a culture in which people welcome change as a means of progress and sustainability rather than fearing it. SMEs with robust networking capabilities and adaptable strategies were more adept at integrating stakeholder input and market knowledge into their strategy changes (Talaja et al., 2021). The ability to learn continuously guarantees that SMEs stay robust and relevant in the face of both gradual and drastic changes in the environment. In a world of perpetual change, strategic flexibility is more than simply a means of survival; it is a driving force behind creativity, effectiveness, and long-term success. Research (Clauss et al., 2021; Mikalef & Pateli, 2022; Wang, 2023) has shown that in uncertain situations, SMEs with greater strategic flexibility tend to outperform their competitors. SMEs can withstand external shocks and prepare themselves for future growth thanks to their ability to change course and adjust their strategy. Despite the well-known advantages of strategic flexibility, internal obstacles such as a lack

of strategic foresight, managerial inertia, and a lack of financial capital make it difficult for many SMEs in emerging economies to implement it successfully. On the other hand, proactive SMEs that make strategic learning process and dynamic skill investments usually exhibit greater flexibility. According to Al-Haddad et al. (2022), SMEs that place a high priority on learning and innovation are better able to alter their strategy in response to shifting conditions. SMEs need to make strategic flexibility a fundamental part of their business plans if they want to thrive in unstable environments.

In today's increasingly volatile and complex global business environment, small and medium-sized enterprises (SMEs) face constant challenges caused by environmental turbulence, which includes unpredictability in markets, technology, customer preferences, regulatory frameworks, and global economic conditions. Environmental volatility affects long-standing company paradigms, forcing SMEs to develop quick reactions in order to remain competitive. According to Wahabet al., (2022), environmental turbulence has emerged as a defining determinant for business performance in the post-COVID-19 period, owing to sudden digital transformations, shifting consumer behaviour, and geopolitical instability. Small and medium-sized enterprises (SMEs), which are frequently limited in resources, are more vulnerable to these external shocks, making strategic adaptation not only helpful but also critical for survival and growth. Furthermore, the growing turbulence in business ecosystems—caused by digital transformation, climate change, supply chain disruptions, and regulatory volatility has made it critical for SMEs to include flexibility into their strategic planning processes. Firms that foresee change and adapt quickly are more likely to retain operational continuity and strategic coherence. The fast digitalisation of commerce and communication has forced SMEs to adopt adaptable digital strategies, which has been shown to be a predictor of market resilience (Awan et al., 2023). This digital agility allows SMEs to modify their marketing, logistical, and client interaction strategies in real time.

Despite several studies on environmental turbulence (Prajogo, 2016; Mikalef & Pateli, 2022; Nwankwo et al., 2023; Adomako et al., 2020) and strategic flexibility (Clauss et al., 2021; Wang, 2023; Grewal & Tansuhaj, 2001; Nadkarni & Herrmann, 2010) respectively, there is a dearth of empirical research on the influence of environmental turbulence on strategic flexibility of SMEs in Rivers State. Existing research has examined how businesses around the world react to environmental uncertainties, but most of it is based in developed nations or economies, frequently ignoring the particular difficulties and operating conditions that SMEs in subnational areas like Rivers State face. Given the region's vulnerability to ecological, political, and economic upheavals—such as shifting oil prices, inadequate infrastructure, and inconsistent policies that exacerbate environmental instability—this disparity is especially serious. Localised empirical studies that document how SMEs in Rivers State use strategic flexibility as a coping strategy in unstable situations are therefore desperately needed. In addition to advancing theoretical knowledge, this research will help shape context-specific tactics for boosting the sustainability and resilience of SMEs in the area.

STATEMENT OF THE PROBLEM

The low levels of strategic flexibility exhibited by small and medium-sized businesses (SMEs) hinder their capacity to adapt to the dynamic and uncertain character of the business environment. Many SMEs still lack strategic flexibility, which is the capacity to modify plans, reorganise business processes, and react quickly to changes in the environment. Internal limitations like scarce resources, poor managerial ability, and a dearth of innovation-driven cultures exacerbate this difficulty. According to Al-Haddad et al., (2022), SMEs faces difficulties in adjusting to changing market conditions, technical advancements, and changing regulatory requirements, which can result in business failure or stagnation. A crucial gap in strategic responsiveness required for long-term survival and growth is shown by the decision-making processes and business models' continued rigidity.

Lack of strategic adaptability puts SMEs at serious danger, particularly in a volatile climate marked by policy inconsistencies, infrastructure deficiencies, and economic instability—all of which are common in Rivers State. SMEs risk deteriorating performance, decreased competitiveness, and frequently closure if they are unable to change course in response to these dynamic dynamics. Businesses that lack strategic adaptability are more susceptible to environmental shocks, especially in emerging nations. They lack the ability to take advantage of new market opportunities or counter new threats, which reduces operational efficiency and stunts scalability (Awan et al., 2023). Additionally, SMEs' ability to innovate, develop resilience, and quickly meet customer expectations is hampered by a lack of strategic flexibility. This inability makes it more difficult for these businesses to establish a long-term competitive edge, particularly in sectors where consumer trends and technology are subject to quick changes. According to Combe and Carrington (2020), strategic flexibility is crucial for businesses functioning in unpredictable circumstances since it allows them to make quick, well-informed decisions. Without this skill, SMEs risk becoming outdated or being surpassed by more adaptable domestic and foreign rivals, which would hurt the local economy and job creation.

The strategic flexibility of SMEs in Rivers State has not been considerably enhanced by the numerous government and non-governmental initiatives that have attempted to improve SME performance in Nigeria, such as financing access, capacity-building initiatives, and entrepreneurship development programs. Initiatives like the Bank of Industry's SME support programs and the National MSME Survival Fund have prioritised financial inputs over strategic adaptability (SMEDAN, 2021). Many SMEs still struggle because they lack the internal understanding and aptitude to handle the intricacies of the environment, even after these interventions. This issue continues to exist, indicating the necessity of a more context-driven, strategic approach to SME resilience, hence the need to investigate the connection between environmental turbulence and the strategic flexibility of SMEs in Rivers State and assess how SMEs' ability to adapt is impacted by external environmental factors, including technical, economic, and

regulatory challenges. The study intends to offer empirical insights that can guide customised strategic responses, improve firm-level agility, and support sustainable SME development in Rivers State by pinpointing the precise aspects of environmental turbulence that influence SMEs' strategic behaviour.

AIM AND OBJECTIVES OF THE STUDY

The aim of this study is to examine the relationship between environmental turbulence and strategic flexibility of SMEs in Rivers State, Rivers State. The specific objectives are to;

- i. Examine the relationship between market turbulence and strategic agility of the SMEs in Rivers State.
- ii. Determine the relationship between market turbulence and strategic options of the SMEs in Rivers State.
- iii. Ascertain the relationship between technological turbulence and strategic agility of the SMEs in Rivers State.
- iv. Investigate the relationship between technological turbulence and strategic options of the SMEs in Rivers State.

RESEARCH QUESTIONS

The following research questions were given in the study;

- i. What is the relationship between market turbulence and strategic agility of the SMEs in Rivers State?
- ii. How does market turbulence relate to strategic options of the SMEs in Rivers State?
- iii. How does technological turbulence relate to strategic agility of the SMEs in Rivers State?
- iv. What is the relationship between technological turbulence and strategic options of the SMEs in Rivers State?

RESEARCH HYPOTHESES

The following research hypotheses were stated and tested in this study;

- H_{01} : There is no significant relationship between market turbulence and strategic agility of the SMEs in Rivers State.
- H_{02} : There is no significant relationship between market turbulence and strategic options of the SMEs in Rivers State.
- H_{03} : There is no significant relationship between technological turbulence and strategic agility of the SMEs in Rivers Sta.
- H_{04} : There is no significant relationship between technological turbulence and strategic options of the SMEs in Rivers State.

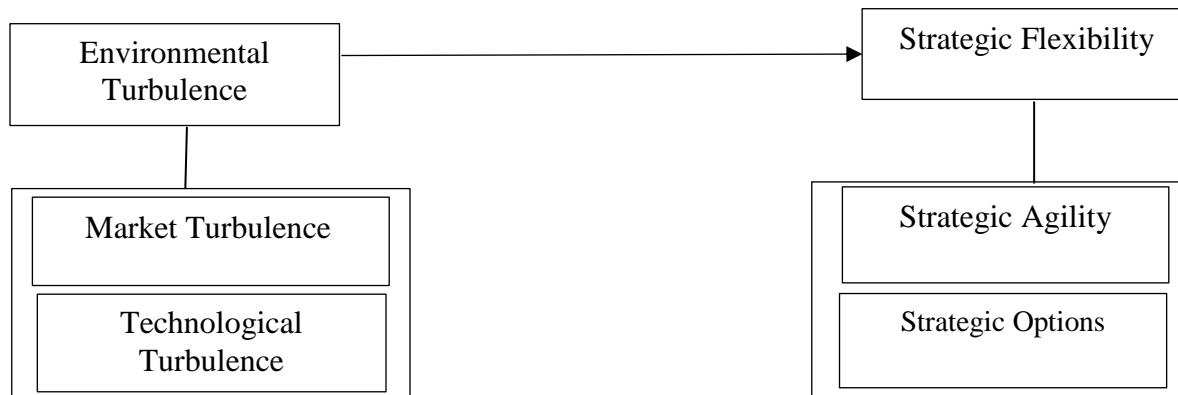


Figure 1: A conceptual model showing the relationship between environmental turbulence and strategic flexibility of SMEs in Rivers State

Source: Adapted from Al-Haddad, Al-Sabbagh, and Al-Omari (2022); Talaja, Miocevic, and Alfirevic (2021); and Odoom, Anning-Dorson, and Acheampong (2019).

ENVIRONMENTAL TURBULENCE

The degree of instability, unpredictability, and complexity in an organization's external environment is referred to as environmental turbulence. It includes elements like societal trends, competitive challenges, political and economic upheaval, and regulatory modifications. Environmental instability can have a major impact on SMEs' long-term growth and operational continuity, particularly in emerging nations like Nigeria. SMEs with limited resources and buffers are frequently caught off guard when external changes happen quickly and are unpredictable. High levels of environmental turbulence require a strategic posture that prioritises constant monitoring and adaption because companies that don't do so suffer from decreased performance and competitive disadvantage (Al-Haddad et al., 2022).

Additionally, the traditional linear strategic planning procedures are challenged by environmental volatility, which forces SMEs to embrace dynamic and iterative strategic models. Recent global supply chain disruptions and the COVID-19 epidemic serve as prime examples of how environmental volatility can make long-standing corporate plans outdated. Being responsive turns into a survival strategy in these situations. SMEs that integrate scenario planning and real-time data analysis into their operations are better equipped to anticipate environmental disruptions and react appropriately, according to Aziz et al., (2023). Therefore, in volatile markets, corporate resilience, risk mitigation, and opportunity recognition all depend on an awareness of environmental turbulence.

Market Turbulence

The rate of change in consumer preferences, market demand, and competition behaviour that impacts how companies function within a particular industry is referred to as market turbulence. High market turbulence suggests rapid product innovation, frequent entry of new competitors, or unanticipated shifts in customer behaviour. SMEs must adjust to these changes since their survival frequently depends on local or speciality markets. SMEs must respond to market volatility by staying abreast of changing consumer demands and implementing agile marketing, product redesign, or service differentiation tactics. According to Nguyen et al. (2022), SMEs in volatile markets do better when they employ market intelligence tools to guide strategic decision-making and update consumer feedback systems on a regular basis.

Customers may become dissatisfied, market share may be lost, and the business may eventually decline if market turbulence is not managed. The speed and extent of market changes are accelerated by globalisation and digital transformation, which expose even regional SMEs to global competition. According to Wang and Fang (2023), market instability can present both a threat and an opportunity depending on how businesses react,. Despite the volatility, companies who can quickly modify their value propositions, pricing schemes, or distribution networks can prosper. Therefore, sustaining competitiveness in volatile conditions requires building the ability to detect and react to changes in the market.

Technological Turbulence

The frequent and unpredictable changes in technology that impact product development, competitive positioning, and corporate operations are referred to as technological turbulence. Due to their restricted access to advanced infrastructure, expertise, and cash, SMEs face both a problem and a requirement in adjusting to technological upheaval. Industries are changing quickly due to emerging technologies like AI, blockchain, and IoT, and businesses that can't keep up run the danger of going out of business. According to Awan et al., (2023), SMEs are compelled to upgrade digital tools, enhance IT capabilities, and innovate their business models in order to stay relevant as a result of technological turbulence.

Furthermore, businesses must have dynamic capabilities that provide ongoing learning and the incorporation of new technologies into operational procedures in light of technological instability. Additionally, it necessitates adaptability in product creation as well as the use of digital platforms for customer interaction, marketing, and logistics. SMEs in poor nations can greatly increase their competitiveness by utilising scalable and reasonably priced technology like cloud computing and mobile apps. In a dynamic technological landscape, SMEs can better respond to opportunities and disruptions by investing in technology-driven innovation processes and digital preparedness, according to Mikalef et al. (2022).

STRATEGIC FLEXIBILITY

The ability of an organisation to quickly and efficiently adapt its operations, strategy, or resource allocation to changes in the external environment is known as strategic flexibility. It helps SMEs to take advantage of new possibilities, adjust to new challenges, and continue operating normally. Due to their comparatively limited resources, SMEs need to be able to shift their focus to different approaches in the event of market or environmental uncertainty. According to Combe and Carrington (2020), strategic flexibility improves a company's capacity to reorganise resources, update plans, and create backup plans in order to prevent failure or stagnation.

With strategic flexibility, businesses may be proactive rather than reactive in fiercely competitive and unpredictable settings. This flexibility in strategic thinking is especially helpful when new competitors appear or customer expectations change. According to Talaja et al., (2021), SMEs that possess greater strategic flexibility tend to do better than their counterparts because they are better equipped to take advantage of market niches and innovate under duress. A key component of long-term success, strategic flexibility also promotes sustainable growth by coordinating internal resources with external opportunities.

Strategic Agility

The ability of an organisation to promptly recognise, react to, and modify its strategic direction in real time when market and environmental conditions change is known as strategic agility. It is crucial for SMEs functioning in unstable or fiercely competitive situations because it blends aspects of speed, foresight, and adaptability. Strategic agility is the quick development and implementation of completely new strategic initiatives, as opposed to strategic flexibility, which permits modifications within pre-existing Strategic options. Al-Haddad et al. (2022) claim that by encouraging proactive innovation, decentralised decision-making, and quick experimentation, strategic agility aids SMEs in staying ahead of change. Globalisation and the speed at which digital change is occurring have made strategic agility even more crucial. Agile companies may rapidly scale up successful tactics, test new business models, and shorten innovation cycles. According to Denning (2022), strategic agility encourages ongoing change and

keeps businesses robust to technology disruption or economic downturns. Strategic agility can be a crucial factor in SMEs' survival and success in fast-paced marketplaces, allowing them to maintain their competitiveness despite having few resources.

Strategic Options

The range of different approaches that a company can take to achieve its long-term objectives, particularly in reaction to changes in the environment, is referred to as its strategic choices. Diversification, market entry, product development, forming partnerships, and digital transformation are a few examples. For SMEs, maintaining operations and adapting to uncertainty depend heavily on the availability and assessment of strategic options. When one road becomes less viable, a company can quickly change course by having a diverse portfolio of possibilities. According to Martins and Rialp (2023), SMEs that consistently produce and assess a variety of strategic choices are typically more inventive and flexible in tumultuous situations. Furthermore, creating strategic choices calls for both imagination and a methodical framework for decision-making that takes risk, resource needs, and long-term effects into account. When faced with crises or unforeseen changes, firms that have few strategic options frequently find themselves in a tight spot. Effective strategic decision-making requires striking a balance between long-term strategic coherence and short-term agility, as Eisenhardt and Zbaracki (2020) point out. Therefore, SMEs may retain a strong portfolio of strategic options to draw from when circumstances change by investing in strategic planning methods that encourage scenario preparation, stakeholder involvement, and competitive analysis.

Dynamic Capabilities Theory (DCT)

The Dynamic Capabilities Theory was first presented by Teece et al. (1997) to explain why certain businesses can adapt and thrive in volatile marketplaces while others cannot. To address a quickly changing environment, businesses can integrate, develop, and reconfigure internal and external competencies. The ability of the company to recognise opportunities and dangers, take advantage of them, and modify operations and resources to preserve a competitive edge is the basis of the idea. Environmental turbulence, such as shifts in economic policies, legislation, technologies, or market trends, necessitates that SMEs be flexible and adaptable. The notion that businesses need to cultivate strategic adaptability to deal with such uncertainty is supported by the dynamic capabilities' framework. In reaction to instability, SMEs with high dynamic capacities might restructure operations, realign their strategic priorities, and investigate new markets or innovations. To thrive in extremely unstable situations with rapid changes in infrastructure, politics, and regulations, SMEs must adapt their strategy on the fly. SMEs with robust dynamic capacities demonstrate more strategic flexibility, enabling them to successfully respond to environmental turbulence (Al-Haddad et al., 2022). This demonstrates how DCT may be directly applied to comprehend and improve the resilience and flexibility of SMEs.

EMPIRICAL STUDY

Al-Haddad et al., (2022) examined the mediating effect of dynamic capacities in the relationship between environmental turbulence and strategic agility among SMEs in Jordan. 230 SMEs from various industries were sampled for the study using a quantitative survey design, and data analysis was done using structural equation modelling, or SEM. Their research showed that the development of dynamic characteristics like learning and adaptability mediates the association between environmental turbulence and strategic agility. In order to be adaptable and competitive in the face of unpredictability, the study underlined the significance of developing internal competencies.

Kraslawski, and Huisken (2023) investigate how digital transformation and strategic agility help SMEs in Finland and Pakistan deal with technological upheaval. The researchers used a mixed-method approach, combining semi-structured interviews with quantitative surveys, to examine 278 SMEs, with a focus on technology-intensive and service industries. The findings indicated that digital readiness and agile leadership greatly increase resilience in turbulent environments, as SMEs with high levels of digital strategic agility were better able to adapt to quick changes in technology. In the face of continuous technological disruptions, this study emphasises the vital role that digital skills play in improving strategic flexibility.

A research by Talaja et al., (2021) on 142 Croatian SMEs in the industrial and service industries provided more evidence in favour of the strategic flexibility claim. Their study investigated the connection between business performance in volatile markets, networking capacity, and strategic flexibility. The study, which used a quantitative approach with regression analysis and structured surveys, discovered that performance is significantly improved by strategic flexibility. Furthermore, this effect was enhanced by the presence of robust networking capabilities, which made it possible for SMEs to more efficiently access essential market data and resources. The study emphasises how internal and external capabilities work in concert to manage environmental volatility.

Odooom et al., (2019) concentrated on how flexibility and strategic orientation might moderate the impact of market and environmental volatility on the performance of SMEs in Ghana. 301 SMEs that operate in urban areas participated in this cross-sectional study, and the data was analysed using partial least squares structural equation modelling, or PLS-SEM. Although environmental volatility generally has a detrimental impact on SME performance, the results showed that enterprises with a strong entrepreneurial orientation and strategic flexibility typically perform better in such circumstances. This implies that strategic responsiveness is a means of achieving better organisational results as well as serving as a buffer against environmental shocks.

METHODOLOGY

The cross-sectional survey was used in this study. The accessible populations comprise of 385 managers and supervisors of 20 SMEs, within Rivers State. A sample of 196 was drawn using Krejcie and Morgan (1970) Table. The primary data was obtained using a well-structured questionnaire. The independent variable, environmental turbulence, was operationalized using two dimensions: market turbulence and technological turbulence. Each construct was measured using a set of five items. Five items were used in measuring market turbulence (e.g., "Customer preferences change rapidly in our industry"). Likewise, five items were used in measuring technological turbulence (e.g., "Technological changes in our industry are frequent and unpredictable"). The criterion variable, strategic flexibility, was measured using strategic agility and strategic options. Five items were used to measure strategic agility (e.g., "Our business can quickly adjust strategies to respond to unexpected changes in the environment"). Five items were also used to measure strategic options (e.g., "We maintain multiple Strategic options to respond to environmental uncertainties"). Face and content validity were used to determine the validity of the instrument used in this investigation. The reliability was determined using Cronbach's Alpha. The Cronbach's Alpha reliability level of 0.7 was used in the investigation. Values above 0.70 are considered composite reliable. Spearman's rank correlation analyses were used for the analysis.

RESULTS AND DISCUSSION

196 questionnaires were distributed, but only 182 (92.9%) copies were returned, and this constitute the valid questionnaire. The hypotheses test is undertaken at a 95.5% confidence interval and the decision rule is stated below.

Where $P < 0.05$ = Reject the null hypotheses

Where $P > 0.05$ = Accept the null hypotheses

Table 1: Correlations between Market turbulence and Dimensions of Strategic flexibility

		Market turbulence	Strategic agility	Strategic options
Spearman's Rho	Market turbulence	Correlation Coefficient	1.000	.695**
		Sig. (2-tailed)	.	.000
		N	182	182
Strategic agility		Correlation Coefficient	.695**	1.000
		Sig. (2-tailed)	.000	.
	N		182	182
Strategic options		Correlation Coefficient	.680**	.645**
		Sig. (2-tailed)	.000	.000
	N		182	182

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output, 2025.

Market turbulence and Strategic agility: As shown in Table 1, the Spearman's rho value is 0.695 ($p = 0.000$), which is less than the significance threshold of 0.05. The coefficient of determination (r^2) is 0.483, indicating that approximately 48.3 % of the variation in strategic agility can be explained by market turbulence. Based on these results, the null hypothesis (H_01) is rejected, and the alternative hypothesis (H_a1) is accepted. This indicates a significant and positive relationship between market turbulence and strategic agility.

Market turbulence and Strategic options: Table 1 reveals a Spearman's rho value of 0.680 ($p = 0.000$), which is also below the alpha level of 0.05. The r^2 value of 0.462 suggests that 46.2% of the variance in strategic options is attributable to market turbulence. Consequently, the null hypothesis (H_02) is rejected in favour of the alternative hypothesis. This confirms a strong and positive relationship between Market turbulence and strategic options.

Table 2: Correlations between Technological turbulence and The Dimension of Strategic flexibility

		Technological turbulence	Strategic agility	Strategic options
Spearman's rho	Technological turbulence	Correlation Coefficient	1.000	.675**
		Sig. (2-tailed)	.	.000
		N	182	182
	Strategic agility	Correlation Coefficient	.675**	1.000
		Sig. (2-tailed)	.000	.
		N	182	182
	Strategic options	Correlation Coefficient	.660**	.620**
		Sig. (2-tailed)	.000	.000
		N	182	182

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output, 2025.

Technological turbulence and Strategic agility: According to Column Five of Table 2, the Spearman's rho value is 0.675 ($p = 0.000$), which is below the significance level of 0.05. The coefficient of determination (r^2) is 0.456, indicating that 45.6% of the variation in strategic agility is explained by technological turbulence. Given this result, the null hypothesis (H_03) is rejected, and the alternative hypothesis (H_a3) is accepted. This demonstrates a strong and significant positive relationship between technological turbulence and strategic agility.

Technological turbulence and Strategic options: As shown in Column Six of Table 2, the Spearman's rho value is 0.660 ($p = 0.000$), which is less than the 0.05 significance level. The r^2 value is 0.436 indicating that technological turbulence accounts for 43.6% of the variation in strategic options. Based on this evidence, the null hypothesis (H_04) is rejected in favour of the alternative hypothesis. This suggests that there is a highly significant and positive relationship between technological turbulence and strategic options.

DISCUSSION OF FINDINGS

The study's findings show that environmental turbulence, which includes both market and technological turbulence, has a statistically significant and positive relationship with the strategic flexibility of SMEs in Rivers State, Nigeria. These findings provide strong empirical support for the argument that turbulent business environments necessitate strategic responsiveness, particularly in terms of agility and adaptable strategic options.

The first factor, market turbulence, had a high positive connection with strategic agility ($\rho = 0.695$, $p < 0.000$), explaining 48.3% of the variance. This lends credence to the argument that if consumer preferences, rival strategies, and market trends move unexpectedly, SMEs with greater strategic agility may more effectively traverse these changes. Market turbulence significantly influenced strategic options ($\rho = 0.680$, $p < 0.000$), accounting for 46.2% of variance. This finding is consistent with Odoom, Anning-Dorson, and Acheampong's (2019) argument that enterprises functioning in turbulent market conditions must maintain a portfolio of strategic choices to remain competitive.

The findings also show that technological turbulence is strongly associated with both dimensions of strategic flexibility. The study found a positive correlation ($\rho = 0.675$, $p < 0.000$) between technological turbulence and strategic agility, with an explanatory power of 45.6%. This reinforces the notion that SMEs must be able to quickly reconfigure resources and processes in response to frequent and unpredictable technological shifts. Technological turbulence significantly correlated with strategic options ($\rho = 0.660$, $p < 0.000$), explaining 43.6% of the variance. These findings support previous research by Al-Haddad et al., (2022), which emphasised the relevance of dynamic capabilities in moderating the relationship between chaotic environments and organisational agility.

Overall, the study confirms that environmental turbulence increases the need for SMEs to implement flexible strategies, such as maintaining operational agility and developing contingency strategic options. These findings are consistent with the Dynamic Capabilities Theory (Teece, Pisano, & Shuen, 1997), which states that firms must constantly adapt their capabilities to survive and thrive in rapidly changing environments. The strong statistical relationships found in this study highlight the strategic importance for SMEs in Rivers State to proactively monitor environmental changes and develop mechanisms to improve their strategic flexibility.

CONCLUSION

The study investigates the relationship between environmental turbulence, particularly market and technology turbulence, and strategic flexibility among SMEs in Rivers State as indicated by strategic agility and Strategic options. The empirical results show a strong and favourable correlation between the elements of strategic flexibility and both aspects of environmental turbulence. These

findings support the need for SMEs to create and maintain adaptable strategy solutions in order to be competitive in dynamic and uncertain contexts.

According to the findings, market turbulence accounts for a significant amount of the variation in both Strategic options and strategic agility, indicating that quick and flexible decision-making is necessary due to erratic changes in consumer preferences, market demand, and competitiveness. Similarly, SMEs' strategic stance is greatly impacted by technological turbulence, necessitating investments in capabilities that enable quick strategy and resource allocation reconfiguration in reaction to technological disruptions. These results emphasise how crucial it is for Rivers State's SME managers to create proactive sensing systems, keep a variety of strategic options, and cultivate an innovative and agile organisational culture. Businesses may protect themselves from outside shocks and take advantage of new opportunities by bolstering these internal capabilities.

The study adds to the expanding corpus of research by showing that strategic flexibility is an essential, proactive tactic for SMEs in unstable situations rather than just a reactive quality. Therefore, in order to improve SMEs' adaptive capacity and long-term resilience in the face of continuous environmental turbulence, policy makers, business support organisations, and SME owners should give priority to training, technology support, and market information.

RECOMMENDATIONS

- i. SME owners should invest in market intelligence tools to better monitor and respond to shifts in client preferences, competition activity, and industry trends. They should also develop flexible decision-making processes that allow for quick responses to market realities, such as delegation of authority and scenario planning. Regular training in market trend research and customer relationship management might help to increase agility.
- ii. SMEs are encouraged to diversify their strategic options instead of relying on a single company strategy. This could involve developing backup sources, expanding product lines, entering specialised markets, or forming alliances. Strategic planning sessions should include the development of contingency plans to prepare for various market situations, lowering the risks associated with volatile market conditions.
- iii. Small and medium-sized enterprises prioritise technological agility by investing in current digital tools and platforms relevant to their business. Furthermore, SMEs should promote a culture of continuous learning by encouraging employees to keep up with technology advances through workshops, online certifications, and collaborations with tech hubs or academic institutions.
- iv. SMEs should conduct regular technology audits to examine their current digital capabilities and uncover upcoming technologies that may generate new opportunities. Firms should also consider cooperating with innovation centres, tech startups, or universities to co-develop or gain access to technology-driven strategic choices such as automation, e-commerce, or digital marketing.

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