

Perceived Environmental Uncertainty and Strategic Flexibility among Entrepreneurs in Pakistan

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ABSTRACT: Entrepreneurs across the globe face environmental uncertainty, and successful enterprises adapt to it through strategic flexibility. However, such studies are rare in Pakistan. Therefore, the present study aimed to address this gap by assessing the relationship between perceived environmental uncertainty and strategic flexibility. The study employed a cross-sectional correlational research design and purposive sampling to collect data from entrepreneurs with at least one year of experience in operating and managing a business and a minimum of an intermediate-level qualification. Initially, 300 entrepreneurs from Lahore and Faisalabad were approached, of whom 240 completed the questionnaires and met the inclusion criteria, yielding a response rate of 80%. Standardized questionnaires were used to measure the study variables. Correlational analysis revealed a significant positive relationship between perceived environmental uncertainty and strategic flexibility. Furthermore, regression analysis demonstrated that perceived environmental uncertainty significantly and positively predicted strategic flexibility. The study addressed a gap in the indigenous literature and provided useful implications and recommendations.

KEYWORDS: Perceived Environmental Uncertainty, Strategic Flexibility, Entrepreneurs, Pakistan

Introduction

Entrepreneurs operate within dynamic external environments characterized by changes in customer preferences, competitive conditions, technological innovation, economic circumstances, and government regulation (Cheng et al., 2025; Harinurudin et al., 2025; Petricevic & Teece, 2019). These environmental changes require entrepreneurs to consistently adjust their strategies to stay competitive and maintain their businesses (Dawodu, 2026; Sołoduch-Pelc & Sulich, 2020; Ulrich & Wiersema, 1989).

Perceived environmental uncertainty can be defined as the perception of entrepreneurs that changes in their external environment are hard to predict, control, and even interpret (Afshar Jahanshahi et al., 2018; Li et al., 2025; Peng & Walid, 2022). Environmental uncertainty is essential as unpredictable market conditions can affect planning, decision-making, and allocation of resources (Carayannis et al., 2025; Eferakeya, 2025; Trigeorgis, 1996; York & Venkataraman, 2010). Research demonstrates that uncertainty can affect entrepreneurial decisions by elevating the

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need for information processing as well as adaptive responses (Cao & Duan, 2024; Chirico et al., 2026; Joussem et al., 2025; Kariv et al., 2026).

Strategic flexibility can be defined as the ability of the organization to modify its strategies, resource relocation, and responses efficiently towards the changing environmental conditions. It enables firms to adapt their strategic ways when existing strategies become ineffective (Bouguerra et al., 2024; Jian et al., 2025; Karman, 2020; Shimizu & Hitt, 2004). It is closely associated with organizational adaptability and competitive responsiveness because flexible firms can modify their configuration and strategic actions as per the environmental requirements (Sharma et al., 2010; Yi et al., 2011). For entrepreneurs, this flexibility may comprise changing products, services, entering new markets, reallocating resources, and modifying operations when the conditions in the environment shift (Giunipero et al., 2005; Neupane et al., 2025; Shahzad & Jasińska, 2024). Therefore, strategic flexibility may represent an important capability for sustaining business performance under unpredictable conditions.

The relationship between perceived environmental uncertainty and strategic flexibility can be explained via Dynamic Capabilities Theory (Teece, 2018; Teece, 2025). The theory points out that organizations achieve adaptability by sensing environmental changes, seizing opportunities, and reconfiguring resources and capabilities. When entrepreneurs view higher uncertainty, they may be more likely to develop flexible strategic responses to handle uncertain changes. Previous research demonstrates that environmental unpredictability can encourage organizations to develop flexible capabilities (Rehman et al., 2022; Dong, 2024). Therefore, perceived environmental uncertainty may motivate entrepreneurs to develop flexible strategies and adaptive practices to respond effectively to changing environmental conditions.

Prior literature has primarily focused on environmental uncertainty as a contextual hurdle, while less attention is provided to strategic flexibility as a potential adaptive response. Assessing this relationship is essential to understand how Pakistani entrepreneurs respond strategically to uncertain business environments. The present study aims to examine the relationship between perceived environmental uncertainty and strategic flexibility among entrepreneurs in Pakistan to fill the gap in the indigenous literature.

Hypotheses

H1: There is a significant positive relationship between perceived environmental uncertainty and strategic flexibility among entrepreneurs in Pakistan.

H2: Perceived environmental uncertainty significantly and positively predicts strategic flexibility among entrepreneurs in Pakistan.

Methodology

The study adopted a cross-sectional correlational study design to measure the relationship between perceived environmental uncertainty and strategic flexibility. The reason for choosing this research design is due to its time efficiency in assessing variables at a single point in time, which is exactly the requirement of the study. Moreover, the study utilized a purposive sampling technique to collect data from entrepreneurs in Pakistan who were at least 19 years old, had at least one year of experience managing and operating businesses, and had at least an intermediate qualification. Initially, 300 entrepreneurs were approached, out of which 240 completed the questionnaire and adhered to the inclusion criteria; the study yielded a response rate of 80%.

Participants

The study included 240 entrepreneurs with a mean age of 35.03 years ($SD = 12.08$). Most participants were men (155, 64.6%), while women comprised 85 (35.4%) of the sample. Regarding education, the majority held a bachelor's degree (142, 59.2%), followed by intermediate education (52, 21.7%), a master's degree (38, 15.8%), and

a PhD (8, 3.3%). In terms of residence, 162 (67.5%) participants were from Lahore and 78 (32.5%) were from Faisalabad. Regarding business experience, 102 (42.5%) participants had 1–3 years of experience, 44 (18.3%) had 4–6 years, 46 (19.2%) had 7–9 years, and 48 (20.0%) had 9 or more years of experience. In terms of business type, the largest proportion operated e-commerce businesses (32, 13.3%), followed by construction (27, 11.3%), services (26, 10.8%), wholesale and hospitality (17, 7.1% each), retail, food, and healthcare (16, 6.7% each), manufacturing (15, 6.3%), agriculture (14, 5.8%), transportation (12, 5.0%), real estate and education (11, 4.6% each), and information technology (10, 4.2%).

Questionnaires/Instruments

Perceived Environmental Uncertainty

Perceived environmental uncertainty was measured using a 28-item scale with its Likert items rated on a 7-point Likert scale ranging from 1 = Predictable to 7 = Unpredictable. The overall scale demonstrated good internal consistency, $\alpha = .87$ (Buchko, 1994; Miles & Snow, 1978). The Cronbach's alpha obtained in the present study was $\alpha = .90$, indicating excellent internal consistency of the scale.

Strategic flexibility was measured using a 6-item scale with items rated on a 5-point Likert scale ranging from 1 = "very low" to 5 = "very high" (Zahra et al., 2008). The overall scale demonstrated good internal consistency, $\alpha = .84$ (Zahra et al., 2008). The Cronbach's alpha obtained in the present study was $\alpha = .88$, indicating good internal consistency of the scale.

Ethical Considerations

The study adhered to the APA 7th edition throughout its procedure. First of all, the instruments' authors were asked for permission to administer their instruments in the study. Afterwards, the participants were approached with the consent form, demographic and study questionnaires. Upon the written signature on the consent form, which clearly mentioned voluntary participation, withdrawal at any moment was allowed without facing any negative consequences, confidentiality of the participants, and the brief purpose of the study, the demographic and study questionnaires were provided. The data, once collected, were entered into SPSS version 29 for analysis purposes.

Results

Table 1

Correlational Analysis (N = 240)

Variables	1	2
1. Perceived Environmental Uncertainty		.79***
2. Strategic Flexibility		

Note: *** $p < .001$

Table 1 shows a significant positive correlation between Perceived Environmental Uncertainty and Strategic Flexibility ($r = .79, p < .001$), indicating that higher perceived environmental uncertainty was associated with greater strategic flexibility among entrepreneurs.

Table 2

Predicting Strategic Flexibility from Perceived Environmental Uncertainty (N = 240)

Variable	B	SE	B	t	P	LLCI	ULCI
Constant	-2.08	1.06		-1.95	.052	-4.19	.01
PEU	.22	.01	.79	20.43	<.001	.20	.25

Note: *** $p < .001$, $R^2 = .63$, $F = 417.74$, PEU = Perceived Environmental Uncertainty

Table 2 indicates that Perceived Environmental Uncertainty significantly and positively predicted Strategic Flexibility ($\beta = .79$, $B = .22$, $SE = .01$, $t = 20.43$, $p < .001$, 95% CI [.20, .25]). The regression model explained 63% of the variance in strategic flexibility ($R^2 = .63$, $F = 417.74$, $p < .001$), indicating that higher levels of perceived environmental uncertainty were associated with greater strategic flexibility among entrepreneurs.

Discussion

The present study aimed to examine the relationship between perceived environmental uncertainty and strategic flexibility among entrepreneurs in Pakistan to fill the gap in the indigenous literature and provide useful implications for the business community.

The correlational analysis of the study supported the first hypothesis of the study, as perceived environmental uncertainty was significantly and positively associated with strategic flexibility ($r = .79$, $p < .001$). This finding demonstrates that entrepreneurs who perceive greater uncertainty are more likely to adjust or change strategies and respond to the changing conditions of business. Recent literature highlights that flexibility enables organizations to stay responsive when business environments are uncertain (Jian et al., 2025; Shahzad & Jasińska, 2024). Likewise, strategic flexibility is also identified as an essential capability for entrepreneurial firms engaging in resource-constrained and modifying environments (Neupane et al., 2025). This finding is also aligned with recent and broader Pakistani organizational study contexts, which examined organizational processes and employee engagement within the country's corporate sector (Shahid et al., 2025). In the cultural context of Pakistan, this association may be meaningful as entrepreneurs are frequently involved in networks and adaptive decision-making patterns. Such cultural features may motivate entrepreneurs to respond together when market conditions are uncertain. Therefore, the present study is aligned with the support of Dynamic Capabilities Theory, demonstrating that perceived uncertainty can encourage entrepreneurs to sense environmental changes and make their decisions accordingly.

The second hypothesis was also supported, as the regression analysis reported that perceived environmental uncertainty significantly and positively predicted strategic flexibility ($\beta = .79$, $B = .22$, $SE = .01$, $t = 20.43$, $p < .001$, 95% CI [.20, .25]). The analysis reported 63% of the variance in strategic flexibility, demonstrating that entrepreneurs who perceive higher uncertainty are more able to adopt flexible strategic decision-making. This finding is supported by recent evidence demonstrating that environmental uncertainty can stimulate firms to develop dynamic capabilities and change their strategies to meet the uncertainties (Mawardi et al., 2025). Likewise, environmental turbulence is also correlated with the development of strategic agility, specifically through intense strategic sensitivity and resource allocation (de Diego Ruiz et al., 2024). The importance of adaptive capabilities within Pakistani organizations is also demonstrated in a previous study assessing project managers' capabilities and team performance in the Pakistani context (Shahid et al., 2025). In the cultural context of Pakistan, where entrepreneurs operate in a resource-limited and institutionally vulnerable environment, the ability to sense changes and adapt business strategies may be specifically essential. Similarly, empirical evidence regarding workplace mechanisms among Pakistani employees demonstrates the vitality of organizational environment and adaptive organizational responses (Shahid et al., 2026). A recent study conducted on Pakistani SMEs aligns the relevance of dynamic capabilities for meeting environmental pressures and promoting organizational adaptation (Niamat & Qureshi, 2025).

Conclusion

The present quantitative cross-sectional study examined the relationship between perceived environmental uncertainty and strategic flexibility among entrepreneurs in Pakistan to address the gap in the indigenous literature.

The results reported a significant and positive relationship between perceived environmental uncertainty and strategic flexibility. Furthermore, perceived environmental uncertainty positively and significantly predicted strategic flexibility. The findings underscore the importance of strategic flexibility for entrepreneurs operating in dynamic environments, as the capacity to adapt strategies and reconfigure resources may support business continuity under changing conditions.

Suggestions for Future Studies

It is suggested to adopt a stratified sampling technique and longitudinal study design, as the data collected through the stratified sampling technique give a better representation of the target population, and the longitudinal study design measures the variables among participants for a longer period of time, which may give a better picture of changes in variables with respect to the passage of time. Future studies are recommended to use the Urdu version of the questionnaire since not every intermediate-qualified individual is equipped adequately to fill out the English questionnaire with adequate understanding.

Implications

The results demonstrated that entrepreneurs need to develop strategic flexibility to effectively counter uncertain business environments. Entrepreneurs need to benefit from regularly monitoring the market, technological innovation, economic changes, as well as competitive changes to identify new threats and opportunities.

Business training programs must be arranged to focus on flexible decision-making, resource reallocation, as well as adaptive strategic planning. Entrepreneurial support organizations and policymakers can provide the proper training and resources to foster entrepreneurs' capacity to deal with environmental uncertainty.

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