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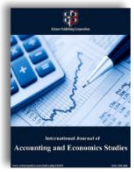

Uncertainty as A Moderator: An Empirical Framework Linking Marketing Strategies to SME Performance

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Abstract

This empirical study examines the direct and moderated relationships among marketing strategy and firm performance of Indian small and medium enterprises (SMEs) during periods of uncertainty. Precisely, this study examines how the price, product, place, and promotion strategy as components of marketing strategy influence SME's performance and also checks the uncertainty's role as a moderator. The data from 435 registered SMEs were collected from different sectors, and hierarchical regression analysis was performed to test the proposed hypotheses. The study's findings reflect the significant effect of price, place, and promotion strategies on SMEs' performance, while no direct effect is seen in the case of product strategy. Uncertainty also significantly impacts SMEs' performance and has a moderating role among marketing strategies and firm performance, except for place strategy. The findings highlight that SME's need to change their marketing strategies during uncertainty to sustain their performance. The study also contributes empirical evidence to the marketing strategy and SMEs performance literature and provides practical guidance for SME's marketing managers and owners on how to cope with uncertainty effectively.

Keywords: *Firm Performance; Hierarchical Regression Analysis; Marketing Strategy; Moderation; SMEs; Uncertainty.*

1. Introduction

SMEs act as a crucial contributor to the economic growth worldwide (Vasani & Abdulkareem, 2024; Nadaf & Kadakol, 2017). The SMEs play a particularly significant role in developing countries (Rosyidiana & Narsa, 2024; Vasani & Abdulkareem, 2024). Globally, SMEs are major sources of employment and economic development, accounting for approximately 90% of global businesses and over half of worldwide job opportunities (World Bank, 2024; Knight, 2000). Similarly, IIFL Finance (2024) emphasized that the Indian SME sector is also drawing a share of more 30% in the Indian gross domestic product (GDP). Given the significant role of SMEs in India's economic growth, their effective performance is crucial for the country's development. However, these firms often face significant challenges, particularly in periods of uncertainty, which can impact SME performance and their long-term sustainability (Yahaya & Nadarajah, 2023; Alberti et al., 2018).

This underscores the importance of studying marketing strategies (MS) and SMEs firm performance, especially during uncertain times. The relationship between MS and SMEs has been a subject of considerable scholarly attention (Ikudaisi et al., 2024; Barney, 1991; Porter, 1985). Prior studies have generally recognized that effective marketing strategies and firm outcomes are positively correlated (Coviello & Sinkovics, 2003; Ikudaisi et al., 2024). Though the impact of uncertainty on this relationship remains a relatively understudied area (Hill & Jones, 2016), specially in developing economies.

To fulfill this gap, the present study examines the marketing strategies on Indian SME firm performance, along with the moderating role of uncertainty. Through examining these factors, the study aims to provide useful insights for SMEs looking for navigation from challenging market conditions and improve their overall performance. These insights can help the marketing manager or owner of SMEs to align the firm's marketing strategies as a response to uncertainty. This study uses hierarchical regression techniques with three blocks, and the data were collected from 435 Indian SMEs on their strategic responses in stable and uncertain periods. This study also progresses the present literature through empirical results beyond the conceptual models in the marketing strategy, performance, and uncertain context. Thus, the study significantly contributes to theory and practice, both

The present research paper continues with a comprehensive literature review covering the marketing strategy, uncertainty, SME performance, and their interlinking. This is followed by setting up of research objective with hypotheses formulation, research methodology, data analysis, findings and discussion, and concluding remarks with implications.

2. Literature review

The section reviews the previous related literature and is organized in a manner like, first, the literature on marketing strategies is reviewed, exploring key components and their impact on firm outcomes. Secondly, the concept of uncertainty and its various dimensions are discussed. Thirdly, the literature on SME firm performance is examined, considering relevant performance indicators. Finally, the review synthesizes existing research on the interconnection between these three factors with a focus on uncertainty as a moderating variable in the marketing strategy and SME performance link.

2.1. Marketing strategy

The present literature shows the importance of SMEs' marketing strategies towards their enhanced firm performance. A significant number of researchers have studied the different factors that constitute marketing strategies.

Cooper (1984) studied the relationship between new product strategies and performance. The researcher identified four key components of new product strategy: product type, target market, technology, and process orientation. Performance was assessed based on sales, profit, and success rates. The study concludes that new product strategy and performance are closely linked, and firms from various industries adopt different strategies.

Greenley (1989) conducted a study to explore the marketing strategy concept and its underlying components. Through literature review, the researcher identified two levels of marketing strategy: long-range marketing planning (tactical planning) within operational planning, and corporate strategy. To gain a deeper understanding of marketing strategy, Greenley proposed a third level consisting of five components as 'market positioning, product positioning, marketing mix, market entry, and timing'. The author cautioned that focusing on these components within the marketing context could potentially lead to confusion with existing knowledge about marketing strategy.

Doole et al. (2006) conducted a study by using the tool of semi-structured interviews on 250 SMEs situated in the UK's Yorkshire and Humber region, and found that marketing strategies related to product, price, place, and promotion are among 17 identified main practices, and processes linked with the SMEs' export performance. Researchers primarily related success to export marketing strategy, which consists of generation, management, and dissemination of knowledge, External relationships and networks, product strategy, and pricing strategy.

O'Dwyer et al. (2009) identified that the innovative MS acts as a strong tool to navigate the changing conditions of the market for SMEs. The research also suggested that SMEs use several marketing strategies, including cost leadership, differentiation, and niche strategies for better firm performance. The result leads to effective targeting and reaching target customers, developing unique value propositions, and being able to react in changing market conditions.

Yan and Chew (2011), in their research paper titled "An investigation of marketing strategy, business environment and performance of construction SMEs in China," illustrated the marketing strategies in two categories as relationship and competitive marketing strategies. Relationship marketing strategy deals with resources related to networking and alliances, while the competitive MS deals with capabilities and resources deployment to be competitive. Both kinds of MS lead to SME firm performance

Trivedi (2013) studied SMEs' marketing strategies and identified that SMEs are now using innovative MS to increase their performance. Various innovative marketing strategies used by SMEs included the use of digital modes for advertisement, including the World Wide Web, using mobile applications as a service tool for their customers, and customer relationship management, improved customer feedback, including digital channels as per resource availability and individual proficiencies.

Idris and Momani (2013) empirically investigated environmental dynamism on MS comprehensiveness and organizational performance. The comprehensive marketing strategy was studied with 5 items and showed that the marketing strategy's comprehensiveness affected the performance of the organization significantly.

Ranjan (2023) extended the traditional marketing strategies towards digital transformation. Researcher established that the business performance can be improved if Information Technology resources are aligned with digital marketing strategies. Similarly, Ravindran et al. (2023) highlighted that the use of digital marketing strategies, more specifically social media, has a positive impact on the firm's viability and sales.

An empirical study on SME carried out by Amin et al. (2025) in Pakistan reflected the increase in SME marketing performance due to the adoption of digital transformation. The technology adoption model was used to demonstrate the positive effect of digital transformation on firm-specific marketing capabilities to navigate rapidly evolving technological landscapes.

Therefore, marketing strategy is defined as a plan of a firm to reach its target audience to accomplish a sustainable competitive advantage through effective positioning and offering of its products, pricing, distribution, and communication strategies (Kotler & Keller, 2016). This study focuses on the traditional marketing mix elements, often referred to as '4Ps'with modern adoption:

Price: Price represents the monetary value exchanged for the product or service. Pricing strategies involve setting prices that are competitive yet profitable, considering factors such as cost, demand, and competitor pricing (Doole et al., 2006).

Product: This represents goods and/or services offered by the SME, including features, quality, branding, and packaging. Effective product strategies involve developing offerings that meet customer needs and differentiate the SME from competitors (Cooper, 1984).

Place (Distribution): This refers to the channels through which the product or service is made available to customers. Place strategies involve decisions about distribution channels, logistics, and retail presence (Doole et al., 2006).

Promotion: It consists of all communication activities used to notify, convince, and remind customers about the SME's offerings. Promotion includes advertisement, public relations, digital marketing, and sales promotions (Trivedi, 2013). Rosario and Dias (2023) emphasized the emerging role of social media strategy (a part of marketing strategy) as a key tool for promotional activities, especially during crises or uncertain times. This social media platform communication helps organizations to tackle the fear experienced by consumers.

2.2. Uncertainty

Jauch and Kraft (1986) acknowledged that March and Simon (1958) were among the first to recognize the significance of uncertainty within organizations. By comparing selected analysts' perspectives on environmental uncertainty, they highlight the classical view, which attributed uncertainty primarily to external factors (March & Simon, 1958; Chandler, 1962; Cyert & March, 1963; Emery & Trist, 1965). These analysts suggested the influences of the external environment on a firm's decisions, structure, and performance.

Milliken (1987) emphasized the importance of clear definitions and measurements for environmental uncertainty to avoid confusion among organizational administrators. The three distinct types of perceived environmental uncertainty were identified as "state uncertainty, effect

uncertainty, and response uncertainty". These types differ based on the information lacking in the administrator's perception. State uncertainty referred to a lack of understanding about the nature of environmental conditions. Effect uncertainty arises when administrators are unsure of the potential impact of environmental changes on the organization. The response uncertainty occurs when administrators are unclear about available response options or the potential outcomes of their choices.

Miller (1992) classified the uncertainties faced by globally operating firms into three main categories: general environmental, industry, and firm-specific. Political factors, government policies, macroeconomic factors, social factors, and natural factors were included for uncertainties in the general environment. The industry uncertainty encompassed market input, product market, and competitive factors. Firm-specific uncertainty included factors like operating, liability, research and development, credit, and behavioral factors.

Courtney et al. (1997) proposed the framework with 4 uncertainty levels as "clear enough future," "alternate futures," "range of futures," and "true ambiguity." They also outlined three strategic postures (shaping, adapting, reserving the right to play) and three strategic moves (big bets, options and hedges, no regret moves) as a comprehensive approach to managing uncertainty. This provides a valuable tool for making strategic decisions at different levels of uncertainty.

Simangunsong et al. (2012) investigated the different uncertainty sources that impacted the Indonesian SMEs' performance in Yogyakarta. The theoretical framework categorized uncertainty into three levels: internal organizational, supply chain, and external. Internal organizational uncertainties included product characteristics, manufacturing processes, control and response challenges, decision complexity, organizational structure, human behavior, and IT complexity. Supply chain uncertainties encompass end-customer demand, demand amplification, supplier factors, parallel integration, lead time gaps, and chain configuration. External uncertainties consist of environmental factors (political, government policy, macroeconomic) and disruptions (man-made or natural disasters).

Sniazhko (2019) conducted an international business literature review to explore the concept of uncertainty. The author developed a framework with 13 dimensions of uncertainty, categorized into environmental, industry, and firm uncertainty. Environmental uncertainty included economic, political, governmental, cultural, and discontinuous factors. The factors related to input, competition, demand, and technology were discussed under industry uncertainty. Firm uncertainty covered factors related to behavioral, R&D, operating, and previous experience.

Cascaldi et al. (2023) explored a comprehensive overview of existing measures of uncertainty, risk, and volatility, clarifying their conceptual differences. They summarized the construction of these measures, their relative advantages, and their impact on financial markets and economic outcomes. While increased uncertainty is often linked to negative real and financial results, the extent of these effects and the interpretation of transmission channels are significantly influenced by identification factors.

This study considers different dimensions of uncertainty as:

Firm-specific/internal related: operating uncertainty, R&D uncertainty, credit uncertainty, manufacturing uncertainty - machine breakdown, labor problem (Sniazhko, 2019).

Market-related: Unpredictability in customer demand, competitor actions, and market trends (Simangunsong et al., 2012).

Supply chain related: Supplier uncertainty - suppliers related issues like problems with quality, availability of supply/suppliers (Simangunsong et al., 2012).

Technology-related: Rapid changes in technology that can impact the SME's products, processes, or competitive landscape (Simangunsong et al., 2012).

Competition-related: Unpredictability in the actions of competitors (Miller, 1992).

Environment-related: Unpredictability arising from broader economic, political, social, or regulatory factors (Miller, 1992).

2.3. SME firm performance

Richard et al. (2009) explored the firm performance in to three different measures on the basis of financial, product market, and shareholder return performance. Financial performance consisted of 'profits, return on investment (ROI), and return on assets (ROA)'. Performance on product market measures consisted of sales, market share, etc., while the return on shareholders was calculated on its total return and addition in economic value.

Adewale et al. (2013) investigated the MS impact on firm performance from selected Nigerian SMEs. The finding reflected that MS components, i.e., 'product, promotion, place, price, packaging, and after-sales service' were significantly predicting firm performance in terms of 'profitability, market share, ROI, and expansion'.

Dzisi and Ofosu (2014) investigated the relationship between MS and Ghanaian SMEs' performance, focusing on 'profitability, brand awareness, and market share'. The study reflected a positive correlation between MS and firm performance. By examining traditional and non-traditional marketing practices, the authors suggest a stronger association between SME firm performance and traditional marketing strategies compared to non-traditional ones in Ghana.

Sopha et al. (2020) in their study took sales returns, profitability, and growth in sales as the indicators of SME firm performance. This was adopted from Merschmann and Thonemann (2011). The study also explored the uncertainty indicators as internal organizational uncertainty, internal supply chain uncertainty, and external uncertainty.

Sharfaei et al. (2023) explored that to achieve a performance goal, the SME must navigate through market uncertainty. The study provided valuable insights for international SMEs operating in developing markets. By leveraging comprehensive knowledge of market uncertainty, these SMEs can enhance their performance. The empirical findings supported the idea that understanding the effects of uncertainty is crucial for achieving high performance, particularly in developing markets, which are often marked by ambiguity.

Wu et al. (2024) conducted a study on Taiwan's SME and found that the digital marketing strategy, comprised of innovativeness, proactiveness, and firms' agility with managerial capabilities, positively affected firm performance.

Thus, the firm's performance reflects the overall success of the SME in achieving organisational objectives. This study considers several key performance indicators related to:

Sales: The total revenue generated from sales of goods and/or services.

Market Share: Percentage of the total market controlled by the SME.

Return on Advertising Spend (ROAS): A measure of the effectiveness of advertising campaigns.

Profitability (ROA, ROI): Measures of the SME's profitability and return on investment.

2.4. Marketing strategy, firm performance, and uncertainty

Hanna et al. (1975) proposed that firms should adapt their marketing strategies in response to the evolving American business environment, characterized by resource scarcity. They highlighted key changes in the legal, political, consumer, and competitive landscapes and suggested short-term strategies such as adjusting product mix, pricing, promotion, and distribution channels.
Shama (1978) presented a conceptual framework examining the interconnectedness of economic changes, firm marketing strategies, and consumer behaviour. The author defined economic change as stagflation, a combination of shortages, inflation, and recession. Through two complementary surveys, the study investigated the impact of stagflation on both firm marketing activities and consumer responses. The findings revealed that consumer reactions to marketing strategies differed significantly between stagflation and pre-stagflation periods. To effectively manage marketing during stagflation, organizations should consider adjusting product offerings, pricing, distribution channels, and promotional activities, with a particular focus on pricing strategies.
Kotha and Nair (1995) investigated strategy and environment on the performance of a firm. The study revealed that both strategy and environmental factors significantly impact profitability, while environmental variables also influence firm growth.
Cass and Julian (2003) investigated environmental factors and export marketing mix strategies on Australian export firms' performance. The study found that characteristics of the environment, i.e., competition intensity, political and legal factors, customer exposure, and channel accessibility, significantly influence both export marketing mix strategies and managerial environmental scanning. While environmental scanning led to better export marketing performance, adapting marketing mix strategies was not directly associated with improved export performance. Similarly, marketing strategies, especially the 4Ps, acted as a strong driver for competitiveness (Adewale et al., 2013) and performance of SMEs (Morgan et al., 2009).
Koksal and Ozgul (2007) examined the impact of MS on firm performance during the 2000-2001 economic crisis on Turkish companies. Firm performance is measured by sales volume, market share, and profitability. The study reflected that relying solely on price changes to increase sales volume and profit is not effective. However, strategies such as training sales staff, investing in research and development, entering foreign markets long-term, and engaging in customer communication through promotion positively influence firm performance. Reducing prices and quality, on the other hand, can negatively impact performance. Similarly, Freel (2005) pointed out the change in the impact of marketing strategies during uncertainty. The environmental turbulence adversely impacted SMEs' profit and growth (Bamiatzi & Kirchmaier, 2014).
Idris and Momani (2013) empirically investigated the impact of environmental dynamism on MS comprehensiveness and organizational performance. This study showed that two items, 'intensity and frequency of change,' constitute environmental dynamism and significantly affect SME performance. Additionally, MS implementation was directly affected by environmental dynamism. Donaldson (2001) pointed out that firm performance also depends upon the strategic fit with external environment conditions in his book on contingency theory.
Based on a literature review, Chin et al. (2014) developed a conceptual model examining the environmental uncertainty moderating role on the external integration and firm performance relationship in Malaysian manufacturing SMEs. Environmental uncertainty was categorized into 'demand uncertainty, technological uncertainty, and company threats.' The external integration encompassed relationships with suppliers and customers. A study found that external integration can mitigate the negative effects of environmental uncertainty on firm performance.
Hadi and Supardi (2020) conducted a study on SMEs in the developing tourism center of Yogyakarta, Indonesia, to investigate revitalization strategies post-COVID-19. Using the business model canvas, the study identified eight key strategies as 'value proposition, key activities, customer relationships, customer segments, key partners, channels, cost structure, and revenue streams.' By prioritizing specific areas and products, the study aimed to develop effective revitalization strategies for SMEs in the region.
Effective marketing strategies are generally expected to positively influence SME firm performance and show a direct effect. For example, developing innovative products, setting competitive prices, ensuring product availability, and implementing effective promotion campaigns can all contribute to increased sales, market share, and profitability (Adewale et al., 2013; Dzisi and Ofosu, 2014).
Uncertainty is hypothesized as a moderator for the relationship between MS and SME firm performance (Jaworski & Kohli, 1993). The framework suggests that the effectiveness of different MS may vary depending on the uncertainty level. For example, in highly uncertain environments, agile and adaptable promotion strategies may be particularly important, while long-term product development plans may be less effective (Hanna et al., 1975; Shama, 1978).
Thematic analysis from a bibliometric study conducted by Laila et al. (2024) reflected the interconnection between digital marketing strategies, SME performance, and environmental uncertainty due to changes in technology and the global crisis.

3. Objective and hypotheses

Based on the literature review, the objective of this empirical study is to test the MS roles towards enhancing SME firm performance and to study how uncertainty moderates this relationship in the Indian context. The study proposed a conceptual model as shown in Figure 1 and empirically tests to explain how uncertainty moderates the relationship between MS and SME firm performance, which indicates three constructs. First, the marketing strategies which consists of four individual MS as price, product, place, and promotion and are taken as independent variables on the left, second, the SME firm performance which is taken as dependent variable and encompasses sales, market share, profitability and return on investment etc. on right and the third, uncertainty which moderates the relationship between marketing strategies and SME firm performance. This moderating effect is visually represented by dashed lines that interact with the direct paths from each marketing strategy to SME performance. The constructs and pathways provide a visual summary of both the direct and moderating relationships proposed. The framework postulates that the effectiveness of different MS is dependent upon the level of uncertainty faced by SMEs.

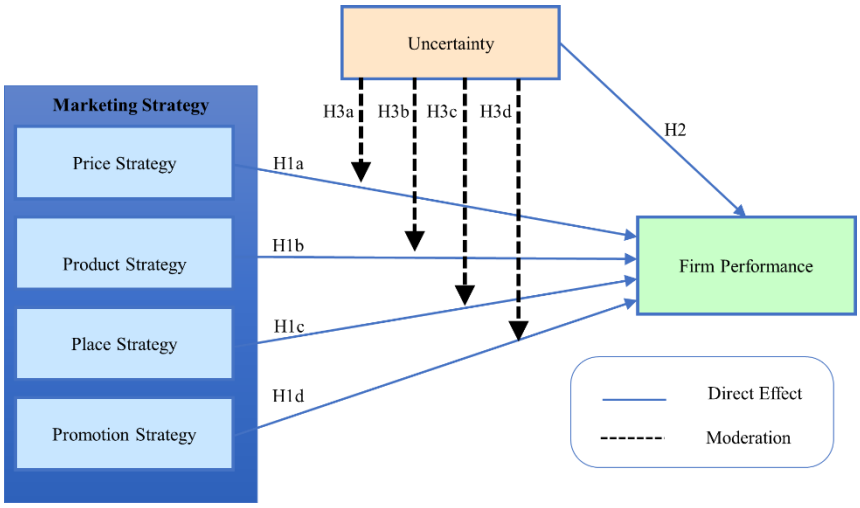

Fig. 1: Proposed Model.

Source: Author's own, based on literature review

3.1. Research objectives

1) To study the direct effect of individual marketing strategies on SME performance in India.
2) To assess the uncertainty effect on SME performance in India.
3) To analyse the uncertainty effect as a moderating variable on the individual marketing strategy and SME performance relationship.

3.2. Hypotheses

H1: MS has a positive effect on SME performance.
H1a: Price strategy (PC) positively affects firm performance.
H1b: Product strategy (PD) positively affects firm performance.
H1c: Place strategy (PL) positively affects firm performance.
H1d: Promotion strategy (PR) positively affects firm performance.
H2: Uncertainty (UN) has a significant effect on SME performance.
H3: Uncertainty moderates the MS and SME performance relationship.
H3a: Uncertainty significantly moderates the relationship between price strategy and SME performance.
H3b: Uncertainty significantly moderates the relationship between product strategy and SME performance.
H3c: Uncertainty significantly moderates the relationship between place strategy and SME performance.
H3d: Uncertainty significantly moderates the relationship between promotion strategy and SME performance.

4. Research methodology

4.1. Research design and sample

The present study uses a quantitative, cross-sectional design. The primary data was gathered with the help of a structured questionnaire. The sampling frame includes SMEs registered with the government of India and operating in the capital region of India. After the first stage of SME stratification based on geographic area, the marketing managers or owners from the selected SMEs were chosen through random sampling. Final responses were collected from 435 SMEs.

4.2. Variables and measurement

All items related to various marketing strategy components, SME performance, and uncertainty are adapted from previously validated studies like Koksal & Ozgul (2007), Apaydin (2011), Simangunsong et al. (2012), Odunlami (2013), Chari et al. (2014), Sniazhko (2019), and Sopha et al. (2020). Every item was scored on a 5-point Likert scale, where 1 showed strongly disagree and 5 as strongly agree. Various items of final constructs after exploratory factor analysis are shown in Table 1.

Table 1: Construct Items

Items	Component
Competitive pricing	
Penetration pricing	
Premium pricing	
Price negotiation	Price Strategy (PC)
Discounting /Coupons/Schemes	
Payment methods flexibility	
Credit terms flexibility	
New products	
Diversified products	
Focus on the main product	Product Strategy (PD)
Product packaging	
Research and Development budgets	
Product quality	

Firm location	
Proper distribution channel	
Direct sales channel	Place Strategy (PL)
Trained sales force	
Cost-effective distribution channel	
Promotion and advertising budgets	
Special offers	
Samples	Promotion Strategy (PR)
Product branding	
Traditional marketing	
Digital & Social media marketing	
Sales volume	
Market share	
Net profits/financial performance	
Customer satisfaction & loyalty	SME performance (PF)
ROA	
ROI	
ROAS	
Brand equity, visibility, & Brand Image	
R&D uncertainty	
Credit availability uncertainty	
Process/Manufacturing	
Demand change	
Suppliers' uncertainty	Uncertainty (UN)
Product innovations	
New entrant	
Government policy & political uncertainty	
Natural calamity	

Source: Literature review.

4.3. Data validity and reliability

Reliability and validity of the model were tested first. Reliability was confirmed with Cronbach's Alpha value for each construct and found to exceed the recommended threshold of 0.70 (George & Mallery, 2003). The adequacy of sampling was verified with the help of the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity (Tabachnick & Fidell, 2021), whose favourable result paved the way for factor analysis. In the next step, principal component analysis (PCA) was carried out to validate factor structure and to reduce dimensionality.

4.4. Tools and analysis techniques

The formulated hypotheses were tested by employing hierarchical multiple regression analysis in SPSS. The analysis was conducted in three blocks. The first block used regression to analyse the effect of four MS factors on SME performance, in the second block, regression was run including the uncertainty variable, and the last block investigated the moderation effect of uncertainty by introducing the interaction of uncertainty with marketing strategy variables.

5. Data analysis

5.1. Descriptive statistics

The study sample consisted of 435 SMEs from manufacturing (78%) and services (22%). Most firms (77%) were operational for more than 5 years, and most were small enterprises under the revised MSME classification based on turnover and investment.

5.2. Reliability

The value of Cronbach's Alpha for all constructs ranged from 0.727 to 0.898. Thus, as these values were above .7, indicating good internal consistency, and shown in Table 2.

Table 2: Reliability Statistics of MS, UN, and PF

Construct	Cronbach's Alpha	No. of Items
Price Strategy (PC)	0.744	7
Product Strategy (PD)	0.739	6
Place Strategy (PL)	0.758	5
Promotion Strategy (PR)	0.769	6
Overall Marketing Strategy (MS)	0.727	24
Uncertainty (UN)	0.744	9
SME Performance (PF)	0.898	8

Source: Author's data analysis.

5.3. Sampling adequacy & PCA

KMO values were above .6 and Bartlett's Test of Sphericity was significant ($p < 0.001$), thus confirming the suitability of the dataset for factor analysis as shown in Table 3.

Table 3: KMO and Bartlett's Test for MS, UN, and PF Items

Construct		MS	UN	PF
KMO Measure		.713	.618	.645
Bartlett's Test of Sphericity	Approx. Chi-Square	2884.562	3557.281	3557.281
	Df	325	28	28
	Sig.	.000	.000	.000

Source: Author's data analysis.

PCA revealed distinct factor loadings for each strategy, supporting construct validity, and are shown in Tables 4 and 5.

Table 4: Total Variance Explained for PC, PD, PL, PR, UN, PF

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	Variance %	Cumulative percent	Total	Variance %	Cumulative percent
PC	9.427	39.281	39.281	9.427	39.281	39.281
PD	6.254	26.060	54.118	6.254	26.060	54.118
PL	2.879	11.994	66.112	2.879	11.994	66.112
PR	1.791	7.461	73.573	1.791	7.461	73.573
UN	5.531	72.564	72.564	5.531	72.564	72.564
PF	4.918	61.477	61.477	4.918	61.477	61.477

Source: Author's data analysis.

Table 5: Rotated Component Matrix[a] for MS, PF, UN

	Components					
Items code	PC	PD	PL	PR	PF	UN
PC1	-.871					
PC2	-.848					
PC3	.827					
PC4	.750					
PC5	.795					
PC6	.782					
PC7	.666					
PD1		.821				
PD2		.812				
PD3		.659				
PD4		.565				
PD5		.533				
PD6		.506				
PL1			.907			
PL2			.891			
PL3			.863			
PL4			.819			
PL5			.729			
PR1				.942		
PR2				.921		
PR3				.907		
PR4				.800		
PR5				.757		
PR6				.580		
PF7					.840	
PF2					.835	
PF3					.828	
PF5					.794	
PF1					.787	
PF6					.767	
PF4					.747	
PF8					.659	
UN4						.897
UN3						.831
UN9						.804
UN5						.815
UN7						.776
UN1						.750
UN2						.748
UN6						.722
UN8						.666

PCA extraction with varimax rotation and Kaiser normalization.
a. 5 iterations were used to converge the rotation.
Source: Author's data analysis.

5.4. Correlation matrix

Pearson correlation coefficients reflected significant positive associations among PC, PD, PL, PR, and SME performance. Whereas the uncertainty indicated a mixed relationship, negatively associated with PF but positively associated with various marketing strategies, as shown in Table 6.

Table 6: Correlation Among MS Components, PF, And UN

	PF	PC	PD	PL	PR	UN
PF	1	.521**	.096*	.308**	.655**	-.120*
PC		1	.251**	.549**	.431**	.140**
PD			1	.296**	.269*	.248*
PL				1	.580**	.254**
PR					1	.308**
UN						1

** $p < 0.01$ and * $p < 0.05$
Source: Author's data analysis.

5.5. Hierarchical regression analysis

Hierarchical multiple regression analysis was carried out after meeting all its assumptions to test the hypotheses and examined the effect of MS on the PF in block 1, the effect of MS on the PF under uncertainty in block 2, and the effect of marketing strategy on SME performance with the moderating effect of uncertainty in block 3. The following blocks/ models were constructed to assess the direct and moderating effects of MS, UN, and PF.
Model 1 general equation showing direct effects of marketing strategies (H1a-H1d):

$$PF = \alpha + \beta1*PC + \beta2*PD + \beta3*PL + \beta4*PR + \varepsilon$$

Model 2 general equation after adding the effect of uncertainty (H2):

$$PF = \alpha + \beta1*PC + \beta2*PD + \beta3*PL + \beta4*PR + \beta5*UN + \varepsilon$$

Model 3 general equation showing the moderation effect of uncertainty (H3a-H3d):

$$PF = \alpha + \beta1*PC + \beta2*PD + \beta3*PL + \beta4*PR + \beta5*UN + \beta6*CPCxCUN + \beta7*CPDxCUN + \beta8*CPLxCUN + \beta9*CPRxCUN + \varepsilon$$

In the above equations, PF is SME performance, alpha (α) is the intercept (the baseline performance when all marketing strategies are at zero), PC, PD, PL, PR are pricing, product, place and promotion strategies, UN is uncertainty, CPCxCUN, CPDxCUN, CPLxCUN, CPRxCUN are the interaction terms, Betas (β1 to β9) are the coefficients, epsilon (ε) stands for error term capturing the factors which are not explicitly included in the model, and * represents multiply.
The goodness of fit of all three models is displayed in Table 7 as a model's summary

Table 7: Model Summary

Models	R	R^2	Adjusted R^2	Std. Error of the Estimate	Durbin-Watson
1	.705[a]	.497	.491	.396	1.945
2	.770[b]	.593	.587	.356	1.921
3	.803[c]	.645	.638	.322	1.928

a) Predictors: (Constant), PC, PD, PL, PR
b) Predictors: (Constant), PC, PD, PL, PR, UN
c) Predictors: (Constant), PC, PD, PL, PR, UN, IN_CPC_CUN, IN_CPD_CUN, IN_CPL_CUN, IN_CPR_CUN
Source: Author's data analysis

Overall, the Model 1 indicated a 0.705 degree of association between PF and MS. This showed a strong positive association, further indicating that firm performance was significantly impacted by the marketing strategies. Also, R-squared had a good value of .497, indicating that 49.7% of the variation in firm performance could be explained by MS. Model 2 indicated a 0.770 degree of association between PF and MS during UN. This showed a strong positive association, further indicating that firm performance was significantly impacted by the marketing strategies during uncertainty. Also, R-squared had a good value of .593, indicating that 59.3% of the variation in firm performance could be explained by MS during uncertainty. Model 3 indicated a .803 degree of association between PF, MS, UN, and their interactions. Also, R-squared had a good value of .645, indicating that 64.5% of the variation in firm performance could be explained by MS during uncertainty and its moderation effects.
The ability of the model to describe the MS and UN was evaluated using an ANOVA table 8.

Table 8: ANOVA[a] PF

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	68.069	4	17.017	129.640	.000[b]
	Residual	56.445	430	.131		
	Total	124.514	434			
2	Regression	68.624	5	13.725	105.348	.000[c]
	Residual	55.890	429	.130		
	Total	124.514	434			
3	Regression	80.346	9	8.927	85.901	.000[d]
	Residual	44.168	425	.104		
	Total	124.514	434			

Dependent Variable: PF
Predictors: (Constant), PC, PD, PL, PR
Predictors: (Constant), PC, PD, PL, PR, UN
Predictors: (Constant), PC, PD, PL, PR, UN, IN_CPC_CUN, IN_CPD_CUN, IN_CPL_CUN, IN_CPR_UN
Source: Author's data analysis

The models ' p-value of 0.000 was highly significant for all three models at 5% level of significance. Model 1 included all four components of MS and gave 129.640 (F Value) with a regression sum of squares (SS) of 68.069 and a residual mean square value of 0.131. The model

2 included the uncertainty, resulting in a marginal increase in explained variance (regression SS as 68.624); however, the F- F-value decreased comparatively (105.348) due to an increase in degree of freedom from 4 to 5. The model 3 consisted of interaction terms to test the moderation effect of uncertainty and showed improved model fit with a regression SS of 80.346 and a reduced value of residual mean square of 0.104. Although the F value of 85.901 was less than compared of other models, but still showed the overall model as significant. Thus, the SME performance was significantly predicted by all three regression models. Other necessary model-building information among PF, MS, and UN components was explained by the regression analysis coefficient table 9.

Table 9: Regression Analysis - Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.805	.204		8.826	.000
	PC	.478	.048	.393	9.872	.000
	PD	.055	.046	.042	1.200	.231
	PL	-.320	.048	-.302	-6.707	.000
	PR	.525	.033	.658	16.088	.000
2	(Constant)	1.925	.212		9.086	.000
	PC	.475	.048	.390	9.832	.000
	PPD	.055	.045	.042	1.208	.228
	PL	-.310	.048	-.292	-6.495	.000
	PR	.539	.033	.676	16.229	.000
	UN	-.065	.031	-.071	-2.063	.040
3	(Constant)	5.863	.433		13.544	.000
	PC	.065	.066	.053	.990	.000
	PD	-.559	.083	-.425	-6.705	.003
	PL	-.362	.049	-.342	-7.451	.000
	PR	.739	.036	.925	20.338	.000
	UN	-.261	.035	-.284	-7.486	.000
	IN_CPC_CUN	-.662	.163	-.306	-4.056	.000
	IN_CPD_CUN	-.408	.097	-.216	-4.206	.000
	IN_CPL_CUN	.071	.087	.047	.816	.415
	IN_CPR_CUN	.362	.072	.278	5.028	.000

a) Dependent Variable: PF.
Source: Author's data analysis.

The model 1, which examined the effect of MS on SME performance, explained a solid model fit. PR was the strongest positive predictor, significantly influencing SME performance ($\beta = 0.658$, $p < .001$). PC also showed a moderate positive effect ($\beta = 0.393$, $p < .001$). PL had a significant negative effect ($\beta = -0.302$, $p < .001$). PD does not directly impact firm performance in a standalone model and is found statistically insignificant ($p = .231$).

The model 2 examined the effect of MS on SME performance under uncertainty. PR remained the strongest predictor for firm performance ($\beta = 0.676$, $p < .001$) along with a modest effect of PC ($\beta = 0.390$, $p < .001$). PL showed a negative but significant effect ($\beta = -0.292$, $p < .001$). PD was insignificant ($p = .228$) and consistent with previous model 1. UN had a negative significant effect on firm performance ($\beta = -0.071$, $p < .05$), indicating that firms effectively navigating uncertainty perform better.

Model 3, which examined the effect of MS on SME performance under uncertainty with the role of uncertainty as moderator, showed a strong model fit. Promotion strategy remained the strongest direct driver of firm performance ($\beta = 0.925$, $p < .001$). Uncertainty showed a significant negative effect ($\beta = -0.284$, $p < .001$), resulting in an adverse effect of uncertainty on SMEs' performance. Interaction term (CPR×CUN) was positive and significant ($\beta = 0.278$, $p < .001$), confirming moderation effect of uncertainty on the promotion–performance link. Product and Price strategies had negative interaction effects with uncertainty (CPD×CUN: $\beta = -0.216$, CPC×CUN: $\beta = -0.306$), reflecting that uncertainty weakened their influence on performance. Place strategy's interaction term was insignificant ($p = .415$), suggesting no meaningful moderation effect. It reflects that even the place strategy didn't do much good during uncertain times. For example, during the COVID-19 lockdown, many SMEs faced huge problems getting their supplies. This meant they couldn't get enough products, the quality might have slipped, and deliveries were delayed, all of which ultimately affected their business performance negatively (Canwat, 2024). SMEs failed to quickly adapt their place strategies, such as diversifying distribution channels or leveraging digital platforms.

The hierarchical multiple regression analysis revealed several significant insights into the relationship between MS, SME performance, and uncertainty in Indian SMEs. Hypothesis results are summarised in Table 10.

Table 10: Hypotheses Summary

Hypothesis	Statement	Result
H1a	Price strategy positively affects firm performance.	Supported
H1b	Product strategy positively affects firm performance.	Not supported
H1c	Place strategy positively affects firm performance.	Not Supported (negative effect)
H1d	Promotion strategy positively affects firm performance.	Supported
H2	Uncertainty has a significant effect on SME performance.	Supported
H3a	Uncertainty significantly moderates the relationship between price strategy and SME performance.	Supported
H3b	Uncertainty significantly moderates the relationship between product strategy and SME performance.	Supported
H3c	Uncertainty significantly moderates the relationship between place strategy and SME performance.	Not supported
H3d	Uncertainty significantly moderates the relationship between promotion strategy and SME performance.	Supported

Source: Author's analysis.

Among the individual components of MS, the price and promotion strategies had a significant positive effect on firm performance, whereas the place strategy had a significant negative effect, and the product strategy was statistically insignificant. This indicated that all the components of marketing strategies had different effects on the success of SME.

Uncertainty emerged as a strong predictor of firm performance across models, highlighting its direct and complex role in shaping business outcomes, and aligned with previous studies that highlighted the challenges faced by SMEs due to uncertainty. The uncertainty role as a moderator was significant. It significantly moderated the relationships of price, product, and promotion strategies with firm performance, confirming that the effects of these strategies depend on the uncertainty level faced by SMEs. However, the moderating role of UN in the place strategy and firm performance relation was not statistically supported.

6. Conclusion and implications

The present study empirically investigated the direct as well as the moderating effects of marketing strategies and environmental uncertainty on the Indian SMEs. The findings of the study discovered that among the four marketing mix components of marketing strategy, the promotion and price strategies employ a consistently positive and significant influence on firm performance (Morgan et al., 2009), while the product strategy showed no significant direct effect. Place strategy demonstrates a negative association, possibly due to challenges faced in distribution or inefficient channel strategies during uncertain periods.

Uncertainty had a significant and negative effect on firm performance (Miller & Friesen, 1983). Uncertainty is found to be a significant moderator in the relationships between MS and firm performance. The interaction terms for price, product, and promotion strategies with uncertainty were statistically significant, suggesting that SMEs' adaptation to their strategies during uncertainty can moderate adverse impacts and sustain SMEs' performance. Whereas, the interaction between place strategy and uncertainty was insignificant, leading to a retreat of the distribution strategies in uncertainty. This aligns with previous studies, such as Dangisso (2019), which identified a dearth of suitable selling places and persistent distribution channel problems as marketing challenges limiting sales and market reach, thereby restraining overall SME performance and intensifying during uncertainty. Similarly, a study conducted in Kogi State, Nigeria, by Yalo et al. (2019) found that distribution strategy has a significant impact on the performance of SMEs in Kogi State. During uncertainty, ineffective management of distribution or over-dependence on traditional channels can lead to negative growth.

The results confirmed that uncertainty negatively affects SME performance (H2), but the perfectly aligned marketing strategies can shield this impact (H3a, H3b, H3d supported). These outcomes aligned with a previous study suggesting that dynamic marketing capabilities can help SMEs to withstand turbulent environmental conditions (Morgan et al., 2009).

The present study also provided a contribution to the marketing strategies and SME performance literature through research conducted in Kogi State, Nigeria, by Yalo et al. (2019), found that the distribution strategy has a significant impact onirically testing the moderating role of uncertainty, which is less explored in emerging economies like India. It spreads prior frameworks (Olson et al., 2005; Slater et al., 2006) by empirically testing how uncertainty impacts individual marketing strategy components' effect on SME performance. Also, this study supports the contingency theory approach (Donaldson, 2001), which favours that to have better performance, a firm should align its strategies with environmental factors.

From a theoretical perspective, this study contributes to the literature on marketing strategies and SME performance by empirically testing the moderating role of uncertainty. The study uses hierarchical regression and interaction terms to bridge the gap and reflects that different components of marketing strategies are affected differently during uncertainty.

The findings suggested to SME owners and marketing managers that they should prioritize promotion, product, and pricing strategies for enhancing performance, during uncertain periods, and insignificant moderation effects of place strategies acted less beneficial during uncertainty.

However, the study also has some limitations, like its cross-sectional nature. Future research can use longitudinal studies to see the changes in strategy adaptation over time. Even though this study focuses on Indian SMEs, the findings can apply to a lot of other developing countries that look similar in how they're structured and how they operate. The SMEs in places like Indonesia, Nigeria, and Pakistan face many of the same issues, like struggling to get funding, inadequate digital infrastructure, unpredictable markets, and vulnerable supply chains. Because these contexts are so similar, the results found between marketing strategies, uncertainty, and firm performance are relevant far beyond India's borders. And it's not just developing economies. While the mature markets may be different in terms of how developed they are or their tech readiness, our main idea, especially how uncertainty plays a moderating role, still holds up. SMEs in these developed markets might face different kinds of uncertainty, like new tech disrupting things or fierce global competition, but they still need to be flexible with their marketing and make sure it aligns with their overall strategy.

So, the findings of this study can really help us understand more broadly how SMEs can get through unpredictable times by making smart marketing strategy choices. Future research could even compare different countries to see if this model holds elsewhere to generalize the findings.

To increase competitiveness and resilience for SMEs in uncertain environments, some policies are also suggested, like the government providing financial incentives in the form of subsidies, tax breaks, or low-interest loans to support the adoption of e-commerce and digital marketing strategies, along with training programs. In addition, policies should be there to facilitate access to collaborative logistics platforms and promote supply chain diversification. Regulatory compliance should be simplified and digital. Collectively, these measures will better enable SMEs to adapt marketing strategies, build operational agility, and sustain performance during uncertain times.

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