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DIGITAL MARKETING CAPABILITY AND PERCEIVED MARKET PERFORMANCE AMONG SMALL BUSINESSES IN HYDERABAD, SINDH

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Abstract

This study examines the relationship between digital marketing capability and perceived market performance among small businesses in Hyderabad, Sindh. It also investigates the mediating role of digital marketing adoption and evaluates how owner market orientation and perceived barriers influence digital marketing adoption and business performance. A quantitative cross-sectional research design was employed. Data were collected from 128 small businesses operating in the retail and service sectors in Hyderabad, Sindh. A structured questionnaire was used to measure digital marketing capability, digital marketing adoption, owner market orientation, perceived barriers, and perceived market performance. The data were analyzed using descriptive statistics, correlation analysis, multiple regression analysis, logistic regression, and mediation analysis. The findings reveal a significant positive relationship between digital marketing capability and perceived market performance. Businesses with stronger digital marketing capabilities reported higher levels of market performance. Digital marketing adoption partially mediated this relationship, indicating that capability enhances performance both directly and indirectly through greater adoption of digital marketing tools. Owner market orientation positively influenced digital marketing adoption, whereas perceived barriers negatively affected both adoption and performance outcomes. Digital marketing capability is a critical determinant of perceived market performance among small businesses. While digital marketing adoption serves as an important mechanism linking capability to performance, the direct effect of capability remains substantial. Small business owners should prioritize the development of strategic digital marketing capabilities alongside technology adoption. Policymakers and SME support organizations should facilitate digital capability-building initiatives to improve competitiveness and long-term business sustainability.

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INTRODUCTION

Micro, small, and medium-sized enterprises (MSMEs) hold a pivotal position in Pakistan's economy by driving job creation, fueling economic expansion, and contributing to international trade. At the same time, MSMEs encounter mounting competitive challenges and technological demands within swiftly transforming digital marketplaces (Shafi et al., 2020). Digital marketing has emerged as a vital strategic instrument for small and medium enterprises aiming to strengthen customer interaction and enhance their market position. According to a meta-analysis of the impact of digital transformation on MSMEs operating in emerging markets, the average operational efficiency of these enterprises improved by 23% after digital adoption, while market access increased by 31%. However, limited empirical evidence exists regarding the relationship between digital marketing capability and perceived market performance among small businesses operating in Hyderabad, Sindh (Malinga, 2020). The COVID-19 pandemic accelerated the adoption of digital marketing tools among small businesses in Hyderabad, making the study of digital capabilities more urgent.

Digital marketing capability denotes an organization's capacity to proficiently harness digital tools, leverage market insights, and streamline internal operations in order to strengthen its competitive edge (Riswanto, 2019). Research conducted in emerging markets indicates that the development and application of digital marketing capabilities will positively impact intermediate and final market results. Earlier research conducted in developing markets has highlighted a positive correlation between digital marketing capability and the overall performance of SMEs.

Problem Statement

Although small businesses in Hyderabad increasingly use digital platforms to remain competitive, limited empirical research examines how digital marketing capability influences perceived market performance. Existing studies mainly focus on larger urban firms and rarely integrate owner orientation, perceived barriers, and digital adoption within one framework.

Research Gap

Previous investigations into digital marketing capability have largely concentrated on export-driven SMEs or those situated in major metropolitan areas, leaving limited empirical evidence from secondary urban centers within Pakistan. Moreover, only a handful of studies have concurrently explored digital adoption, owner market orientation, and perceived barriers under a unified analytical framework.

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Furthermore, limited research has examined these relationships simultaneously within the context of secondary urban centers in Pakistan.

Research Questions

1. What is the association between small businesses' digital marketing capability and their perceived market performance in Hyderabad, Sindh?
2. To what extent does digital marketing adoption mediate the relationship between digital marketing capability and perceived market performance among small businesses?
3. How are business owners' market orientation/marketing knowledge and perceived barriers to digital marketing related to the level of digital marketing adoption?
4. After controlling for basic business characteristics, do owner market orientation/marketing knowledge and perceived barriers independently predict perceived market performance?

Research objectives

1. To determine the association between digital marketing capability and perceived market performance among small businesses in Hyderabad, Sindh.
2. To assess whether, and to what extent, digital marketing adoption mediates the relationship between digital marketing capability and perceived market performance.
3. To examine the relationship between business owners' market orientation/marketing knowledge and the level of digital marketing adoption in their businesses.
4. To determine the association between perceived barriers to digital marketing and the level of digital marketing adoption.

Research Hypotheses

This study hypothesizes that digital marketing capability positively influences perceived market performance among SMEs in Hyderabad. Digital marketing adoption is expected to partially mediate this relationship. Furthermore, owner market orientation is anticipated to positively influence digital marketing adoption, whereas perceived barriers are expected to negatively influence adoption and perceived market performance.

H1: Higher digital marketing capability is positively associated with higher perceived market performance among small businesses in Hyderabad.

H2: Digital marketing adoption partially mediates the relationship between digital marketing capability and perceived market performance.

H3: Higher owner market orientation/marketing knowledge is positively associated with higher levels of digital marketing adoption.

H4: Higher perceived barriers to digital marketing are negatively

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associated with digital marketing adoption.

LITERATURE REVIEW

The relationship between small businesses' (SMEs') digital marketing capabilities and perceived market performance based on empirical evidence gathered from various sources of research on digital marketing capabilities (Al Koliby et al., 2024). Digital marketing adoption among SMEs accelerated substantially during and after the COVID-19 pandemic with the increased utilization of online platforms; thus making the general population more aware of the many benefits associated with having a digital profile.

Digital Marketing Capability

Digital Marketing Capability (DMC) is a concept used to define the ability that organisations possess to implement their digital resources; these can include social media channels, websites, analytical tools, and digital content authorship (Munira, A. R et al., 2024).

DMC is characterized as a new marketing capability developing and evolving from a Resource-Based View and Dynamic Capability perspective developed by an earlier. Recent studies focus on DMC as a multi-dimensional higher order marketing capability with sub-areas including Digital Strategy Creation, e-market sensing, Digital Content Creation, and Leadership Support for Digital Initiatives (Chinakidzwa, M & Phiri, M, 2020).

From a theoretical perspective, the alignment of this body of work with the marketing capabilities framework provides a consistent view on how higher levels of DMC can lead to stronger marketing/competitive performance of small to medium-sized enterprises in many different industries, including Indonesian Batik SMEs, Zimbabwean Agro-processors, and Indonesian Service MSMEs (Al Koliby et al., 2024).

Owners' Market Orientation/ Marketing Knowledge

The concept of market orientation is typically characterized as the culture and behaviour of an organisation with emphasis placed on acquiring, distributing and responding to relevant market data (Muis, 2020). In most cases, when describing market orientation for small and medium-sized enterprises (SMEs), it may be determined based on the owner's or manager's use of market intelligence to develop the company's marketing knowledge. Through empirical study, researchers have concluded that SMEs with higher levels of market orientation also develop better marketing capabilities, adopt e-commerce and/or digital technology more fully, and have greater success in terms of performance and competitiveness than other SMEs (Sriayudha et al., 2020). In particular, the research

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conducted on Indonesian SMEs illustrates the strong impact of market orientation on marketing strategy, marketing capability, and SME performance, some of which are mediated by innovation or marketing capability (Fitriany, F et al., 2020). These findings suggest that owner market orientation may serve as an important driver of digital marketing adoption among SMEs.

Digital Marketing Adoption

The adoption of digital marketing by small and medium-sized enterprises (SMEs) has typically been characterized by the amount, diversity and sophistication of the SME's use of digital channels such as social media, e-commerce platforms and digital advertising as part of its marketing strategy (Purnamasari et al., 2024). Research regarding the technology, organisation and environment (called Technology Acceptance Model or TOE) suggests that the combined effects of technological characteristics (e.g. relative advantage, compatibility, complexity and cost), organisational characteristics (e.g. organisational support from top management, employees' digital skills and firm size) and environmental factors (e.g. competitive pressure, customer expectations and regulations), will either enable or hinder SMEs in adopting digital marketing (Ahmed et al., 2025). Recent research conducted on SMEs in Indonesia and Pakistan has indicated that while higher levels of perceived capabilities and knowledge, stronger organisational support and greater competitive pressures are positive influences on the adoption of social media marketing, uncertainty about the benefits of social media marketing, fear of regulatory penalties and difficulty in measuring the performance of social media marketing are among the primary barriers to SME's adoption of social media marketing (Fu et al., 2024; Nazir et al., 2025). Therefore, digital marketing adoption may act as an important mechanism through which digital marketing capability influences business performance.

Perceived Barriers and Enablers

The evidence from Pakistan indicates that social media and digital marketing adoption by small and medium enterprises (SMEs) will be affected by a wide variety of perceived barriers and enablers. Qualitative research conducted under the TOE framework indicates that SMEs in Pakistan view the following as major blocking factors: (1) inability to prove or demonstrate the benefits; (2) difficulty in measuring results; (3) concern regarding compliance with regulations; (4) lack of support from management; (5) uncertainty about political and tax issues (Ahmed et al., 2025). On the other hand, the pressure from competitors, the expectations of customers, and the

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pressing need to adopt digital channels as a result of COVID-19 have created a considerable enabling force for SMEs. In addition, other research has identified that the level of technological knowledge and infrastructure appropriate to an SME can reduce or eliminate the perception of complexity and cost associated with adopting digital marketing strategies, particularly in start-ups where the owner has a higher level of technological knowledge and experience (Nazir et al., 2025). Consequently, perceived barriers may reduce the likelihood of successful digital marketing adoption and its associated performance benefits.

Perceived Market Performance

Market performance is usually evaluated according to how managers rate their company's success against competitors relative to specific factors such as, but not limited to, sales growth, market share, new customers acquired, consumer awareness, and brand associations. In studying the performance of a DMC and an SME, researchers will often separate the "intermediate" markets that exist before obtaining final market performance indicators like sales growth and market share (what they refer to as 'intermediate markets') from the "final" performance indicators, and find that Digital Capabilities have a greater positive influence on these intermediate performance indicators than on the final performance indicator (Munira, A. R et al., 2024). Research conducted on Zimbabwe's DMC has shown that through developing a digital marketing strategy and e-market sensing capabilities, managers have observed greater progress in customer awareness and brand associations compared to gains achieved solely through improved strategic and operational capabilities, ultimately resulting in higher sales and expanded market share (Chinakidzwa, M & Phiri, M, 2020). Overall, these results suggest that the digital marketing capability and adoption can be a significant factor in the perceived market performance of SMEs.

Previous studies have consistently found positive links between digital marketing capability, digital marketing adoption, owner market orientation, perceived barriers and business performance. But there is not much evidence on how these relationships can work together in small businesses in secondary cities like Hyderabad in Sindh.

Conceptual Framework

The Resource Based View and Dynamic Capabilities Perspective are used as the foundation for this study, which recommends that companies improve their performance by having certain “unique” capabilities. The four dimensions of digital marketing capability (DMC) are strategic use of

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digital tools, e-market sensing, digital content creation, and leadership support. Effective DMC in Hyderabad helps digital adoption, helping small businesses to enhance customer engagement, business visibility and market penetration.

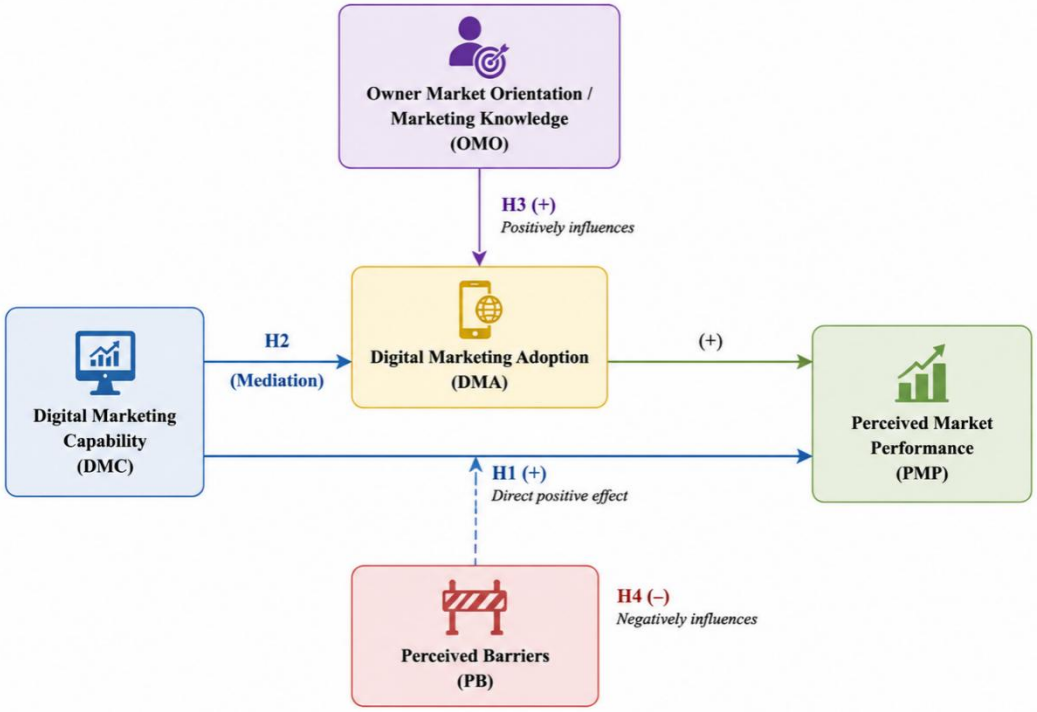

Figure 1. Conceptual Framework of the Study

This study fills the gaps in digital marketing and SME literature by bringing together the factors of digital marketing capability, digital marketing adoption, owner market orientation, and perceived barriers in a single model. The research contrasts with previous studies which mainly involved SMEs in big cities or export-oriented firms in general and empirical evidence from SMEs of a secondary urban center in Pakistan is provided.

METHODOLOGY

Research Design

This cross-sectional analytical study examined the relationships among digital marketing capability, digital marketing adoption, owner characteristics, and perceived market performance among small businesses in Hyderabad, Sindh.

Study Setting

Study sites are located within the urban and peri-urban area of Hyderabad District in Sindh Pakistan. The study sample included small businesses located in commercial buildings; major shopping centers; retail clusters; service corridors, and light industrial areas. Data were collected between January and March 2026 during normal business hours.

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Study Population

The study population includes owners or key decision-makers of small businesses within the Hyderabad District defined as businesses with less than 50 employees and operating for at least 12 months. Excluded from the study were franchises, government and non-profit organizations, and online only businesses.

Sampling Technique

The sampling method used was a non-probability quota sampling method. Consecutive visits to retail and services businesses in major areas of Hyderabad were completed until the sector quotas were met. Although quota sampling enabled the inclusion of businesses from both retail and service sectors, its non-probability nature may limit the generalizability of the findings beyond the study area.

Sample Size

The minimum sample size was determined by using 95% confidence level, 5% margin of error, with an assumed proportion of 50%. The target sample was increased to 128 participants.

Study Instrument

This research adapted pretested structured questionnaire which was used in the previous research on digital marketing capability, digital marketing adoption, and digital marketing performance of small businesses. The questionnaire included sections on business characteristics, digital marketing capability, digital marketing adoption, owner market orientation, perceived barriers, and perceived market performance. All responses to the questionnaire items were measured using a five-point Likert scale and validated through expert review and pilot testing (resulting in acceptable reliability ≥ 0.70).

Data Collection Procedure

Trained data collectors obtained informed consent from participants and administered the structured questionnaires in Urdu, Sindhi, or English. Completed questionnaires were reviewed for missing responses before data entry to ensure data accuracy and consistency.

Statistical Analysis

The data were analyzed by the authors using IBM SPSS Statistics 25 software. Descriptive statistics were used to summarize key demographic variables of the study's population. Correlations, regression, and logistic regression methods were used to examine relationships between the variables. Mediation analysis was performed using bootstrapping with 5,000 resamples and 95% confidence intervals. Statistical significance was determined at the $\alpha < 0.05$ level.

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Ethical Considerations

Ethical approval was obtained in accordance with institutional requirements. Participants provided informed consent prior to participation. Confidentiality and anonymity were maintained throughout the study, and participants were informed of their right to withdraw at any time without consequence.

RESULTS

Respondent Characteristics

A total of 128 small businesses were included in the study, and the majority (57.8%) were retail businesses, while 42.2% were service businesses in Hyderabad in Sindh. All businesses included in the study had fewer than 50 employees, consistent with the study's eligibility criteria. Primary respondents were primarily the owners and senior managers for strategic decision making perspectives.

Descriptive Statistics

The digital marketing capability scores were moderate with means indicating a level of balance in the adoption of digital marketing across the sectors. Market performance scores and demographics data revealed competitive positioning and diversity among owners in terms of age, education and gender. The strong construct reliability was confirmed by the Cronbach alpha values ranging from 0.80 to 0.89.

Digital Tool Adoption

Businesses reported an average of 4.1 tools used (SD 2.2). Facebook (78.9%) and WhatsApp (75%) were the most widely adopted platforms, followed by search engine marketing and online marketplaces. Adoption patterns highlighted reliance on low-cost, accessible tools, reflecting practical strategies in resource-constrained environments.

Correlation Analysis

The results of the correlation showed that there was a positive significant correlation between digital marketing capability, the use of digital marketing tools and the perception of market performance. The owner market orientation also had positive relationship with adoption and perceived barriers had negative relationship with adoption and performance. The results validated the hypothesized relationships between the study constructs.

Regression Analysis

The regression analysis showed that digital marketing capability statistically increased perceived market performance by 2.10 points for every 10-points increase in digital marketing capability ($p < 0.001$). Owner market orientation significantly predicted digital marketing adoption but was not independently associated with perceived market performance. The perceived barriers were a significant

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negative factor, while other factors were also significant.

Mediation Analysis

Mediation testing confirmed that digital adoption accounted for 31% of the effect of capability on performance (95% CI: 18–47%). The remaining 69% reflected direct capability impacts, including strategic sensing and digital strategy creation. This underscores adoption as a partial but meaningful pathway linking capability to performance.

Table.1 Summary of Quantitative Findings and Statistical Measures

Research Component	Result / Metric	Statistical Association / Significance
Total Sample (N)	128 Small Businesses	57.8% Retail; 42.2% Services
Primary Effect (DMC → Performance)	B = 2.10 (95% CI: 1.30 to 2.90)	p < 0.001 (Strong Positive)
Mediation Effect (Adoption)	31% Proportion Mediated	95% Bootstrapped CI: 18% to 47%
Tool Adoption (Average)	4.1 Tools (SD 2.2)	78.9% Facebook; 75% WhatsApp
Capability Predictor (DMC → Adoption)	Adjusted OR = 2.35	p < 0.001 (High Probability)
Owner Knowledge Predictor	Adjusted OR = 1.28	p = 0.041 (Significant)
Perceived Barriers (Negative Influence)	B = -1.10 (95% CI: -1.90 to -0.30)	p = 0.008 (Significant Inverse)
Market Orientation Predictor	B = 0.40	p = 0.120 (Not Significant)
Model Fit (Performance)	Adjusted R-squared = 0.39	F(6, 121) = 14.6; p < 0.001
Construct Reliability	Cronbach's alpha range: 0.80 – 0.89	Meets methodological standards

DISCUSSION

Key Findings

Using a cross-sectional study of 128 small businesses in Hyderabad, Sindh (Table 1), this research has identified a statistically significant and managerially relevant positive correlation between digital marketing capability (DMC) and perceived market performance. Overall, the respondents provided median ratings for both ability and usage metrics (Table 2) with most of them utilising lower cost, easily accessible tools; e.g., Facebook and WhatsApp (Table 3). Bivariate correlation analysis confirmed significant pairing of constructs, i.e.,

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higher ability, increased use of tools, and greater market orientation of owners were positively correlated, while barriers perceived to exist lowered both usage and performance metrics (Table 4). Multi-variable analysis additionally showed that every 10-point increase in DMC was associated with approximately a 2.10-point increase in perceived market competitiveness. The research also demonstrated owner's knowledge of marketing, but showed no effect on final market performance after controlling for other factors. Thus, based on this evidence, the findings generally support the proposed hypotheses and theoretical expectations.

Possible Mechanisms and Interpretation

DMC's performance advantages primarily operate via the resource-based view (RBV) and the dynamic capability (DC) perspectives of firms. DMC allows firms to apply market-sensing techniques electronically; reconfigure strategic assets; and communicate targeted messages effectively. All three attributes lead to increased brand visibility and customer acquisition (Teece et al., 1997). Multivariable linear regression analysis indicated that firms with strategic digital capabilities and the physical presence of tool adoption both affect market performance independently (Table 5). Therefore, firms with a digital literacy foundation will generate a higher return on investment from their platforms (Setiawan et al., 2024). Business owners possessing stronger market orientation and marketing knowledge will have a competitive advantage when attempting to adopt moderate-to-high levels of tool adoption, despite, or perhaps because of, operational barriers (Table 6). The mechanisms through which businesses can achieve success via developing their capabilities was evidenced through mediation testing, which determined that approximately 31% of the effect of capability on performance occurs through expanded breadth in targeted tool adoption (Table 7). Therefore, 69% of the effect on performance is based solely on capabilities developed due to enhanced relationship management practices or improved digital strategy. Consequently, sustaining competitive advantages requires converting digital knowledge into an assortment of structural deployments across a variety of channels (Hayes, A. F, 2013).

Discussion of Objectives Concerning Existing Literature

The study fills many significant gaps in the literature regarding digital transformation in domestically-oriented micro to small enterprises in resource constrained secondary markets. More specifically, the study demonstrates a strong relationship between dynamic marketing

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capabilities and a firm's agility and survival. Recent frameworks for emerging markets support this goal as dynamic marketing capabilities are seen as essential elements of a firm's ability to adjust and adapt in today's marketplace (Malinga, 2020).

In terms of a mediation objective (RO2), the study shows that operational integration is necessary for the optimum realisation of performance benefits from a firm's internal capabilities. In addition, the owner's market orientation positively correlates to digital health, which is consistent with the current entrepreneurial models of managerial mindset being the key driver for adopting technology (Sriayudha et al., 2020).

Finally, in contrast to previous literature that focused only on the adoption of a technology barrier, this research identifies an independent penalty of implementation obstacles to business viability, thus providing a new understanding of the impacts of these obstacles on business continuity and sustainability (Shafi et al., 2020).

From a managerial perspective, the findings suggest that small business owners should focus not only on adopting digital tools but also on developing strategic digital marketing capabilities, including market sensing, digital content creation, and customer engagement. These capabilities appear to generate performance benefits beyond simple technology adoption.

Comparison with Other Studies

The size of the relationships between capabilities and performance that were identified through the PLS-SEM surveys conducted in other locations (such as Indonesia and Zimbabwe) (Chinakidzwa, M & Phiri, M, 2020; Fitriany, F et al., 2020), which have also shown similar capabilities contributing to sustainable small firm growth in those regions, appears to be supported by the results of this study. The differences in results between this study and previous research, including systematic reviews of capabilities and written archival studies, suggest that many previous systematic reviews have had a focus on the mediation of capability-performance relations, meaning that capabilities will produce performance through the use of measured technology (hardware and software) (Hair et al., 2019).

The differences between this study and prior research could be attributed to methodological approach and context. Export-focused analyses are more likely to have been conducted in environments that emphasize large-scale CRM and Big Data. Our peri-urban sample remained firmly rooted in existing entry-level Social Commerce ecosystems, such as Meta platforms. Since entry to a

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technology market is relatively simplistic, our direct effects may reflect unmeasured variances in the qualitative improvements of Content Creation rather than simply referring to the breadth of Technology (Zahoor & Lew, 2023).

Additionally, previous macroeconomic studies have drawn conclusions based on research reflecting on hyper-competitive and technology-rich western markets (Kafetzopoulos, 2022) that results from Social Media do not generate significant performance returns. Conversely, in the less-developed environment of Hyderabad, Digital Sensing gives enterprises large immediate comparative advantages (Ullah et al., 2023).

Limitations

Many limitations affect how this study was set up and analysed. The primary limitation relates to the use of a cross-sectional methodology that restricts the ability to establish a definite time-related cause-and-effect relationship between digital capabilities and market performance due to its use of a correlational survey methodology. To establish a definitive cause and effect relationship between digital capabilities and the market performance by small businesses, longitudinal field experiments must be utilised (Aguinis & Vandenberg, 2014). The second limitation concerns the use of subjective performance measures for a single informant when using small business owners. Using a single informant can result in common method variance, but established procedures and diagnostic standards indicate adequate control of this threat (Hair et al., 2019). The third limitation of the study was that the sampling was conducted using a non-probability quota sampling method and limited to one specific geographical region.

Therefore, the findings may not be generalisable to other major metropolitan cities or other industries with manufacturing capabilities. Furthermore, the analysis did not consider the effects of possible exogenous latent variables such as reliability of local infrastructure, dynamic pricing shocks, or aggressive competition from local businesses, which would have typically been included in the analysis when controlling for multiple variables. However, despite the limitations, the strong multivariate techniques, validity of the scales used (Cronbach's alphas of 0.80 or higher), and systematic identification of mediation through bootstrapping (5,000 iterations) provide a high degree of empirical reliability in a field that is primarily based on anecdotal evidence.

Future research may employ longitudinal designs to examine causal relationships between digital marketing capability and performance over time. Researchers may also compare SMEs across

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multiple cities and sectors to assess whether contextual factors influence the observed relationships.

Conclusions

The present work has demonstrated that an increase in digital marketing capacities, or the ability of small businesses, significantly enhances the perception of market success (performance) of businesses operating in Hyderabad. Digital adoption plays an important role in mediating perceived growth; however, the focus of companies should remain on enhancing their overall strategy and developing internal capabilities needed to achieve superior performance in the marketplace. The results validate the Resource Based View and Dynamic Capabilities perspectives as they show that internal digital marketing capabilities can be converted to better market performance when digital technologies are well used.

Recommendation

Managerial Recommendation

SME owners and managers should focus on developing digital marketing capabilities, including market sensing, digital content creation, customer engagement, and strategic use of digital platforms, rather than concentrating solely on acquiring digital technologies.

Policy Recommendation

Government bodies and chambers of commerce and SME support organizations should create digital capability building programmes, training initiatives and advisory services for small businesses to enhance their digital competitiveness.

Future Research Recommendation

Future studies should examine these relationships across different regions, industries, and business sizes to determine whether the findings can be generalized beyond Hyderabad, Sindh.

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Table.2 Business and owner characteristics (n = 128)

Characteristic	Category	Count (n)	Percentage (%)
Business sector	Retail and trade	74	57.8
	Services (e.g., salons, repair, clinics)	54	42.2
Years in operation	< 3 years	29	22.7
	3–10 years	61	47.7
	> 10 years	38	29.7
Number of full-time employees	1–4	52	40.6
	5–9	48	37.5
	10–49	28	21.9
Monthly turnover (PKR)	< 0.5 million	39	30.5
	0.5–< 1.0 million	47	36.7
	≥ 1.0 million	42	32.8
Owner age, years	Mean ± SD	38.6 ± 9.7*	—
Owner gender	Male	96	75.0
	Female	32	25.0
Owner education	Secondary or less	34	26.6
	Bachelor's degree	61	47.7
	Postgraduate	33	25.8
No formal hypothesis testing performed for baseline characteristics; categories may not sum to 100% due to rounding.			

Table.3 Summary of Key Construct Scores

Construct	Scale (range)	Mean	SD	Cronbach's α
Digital marketing capability score	12–60	38.4	8.1	0.89
Digital marketing adoption index (number of tools)	0–10	4.1	2.2	0.81
Perceived market performance score	7–35	23.9	5.4	0.86
Owner market orientation/ marketing knowledge score	10–50	34.7	7.5	0.88
Perceived barriers index	0–20	9.3	4.1	0.83
Perceived enablers index	0–20	11.8	3.9	0.80
Higher scores indicate greater capability, adoption, orientation, barriers, enablers, or perceived market performance, as appropriate.				

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Table.4 Types of Digital Marketing Tools Adopted (n = 128)

Digital tool currently used	(=n) using tool	% of businesses
Facebook page/profile	101	78.9
WhatsApp Business or broadcast lists	96	75.0
Instagram business account	72	56.3
TikTok or short-video platform	39	30.5
Own website	44	34.4
Online marketplace platform (e.g., Daraz)	28	21.9
Search engine marketing/SEO	31	24.2
Email marketing/newsletters	18	14.1
Paid social media advertising (any platform)	53	41.4
SMS or app-based bulk messaging	47	36.7
Businesses could select multiple tools; percentages do not sum to 100%.		

Table.5 Correlations between key constructs (Pearson r, n = 128)

Variable	1.DMC	2.Adoption	3.Owner MO/MK	4.Barriers	5.Perceived Performance
1. Digital marketing capability (DMC)	1.00	0.51***	0.42***	-0.28**	0.46***
2. Digital marketing adoption index	0.51***	1.00	0.36***	-0.24**	0.39***
3. Owner market orientation/marketing knowledge (MO/MK)	0.42***	0.36***	1.00	-0.19*	0.33***
4. Perceived barriers index	-0.28**	-0.24**	-0.19*	1.00	-0.31***
5. Perceived market performance score	0.46***	0.39***	0.33***	-0.31***	1.00
* p < 0.05; ** p < 0.01; *** p < 0.001 (two-sided).					

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Table.6 Multivariable linear regressions for perceived market performance (n = 128)

Predictor	Specification	B (unstandardized)	95% CI for B	P-value
Digital marketing capability score	Per 10-point increase	2.10	1.30 to 2.90	<0.001
Digital marketing adoption index	Per additional tool	0.60	0.20 to 1.00	0.003
Owner MO/MK score	Per 5-point increase	0.40	-0.10 to 0.90	0.12
Perceived barriers index	Per 5-point increase	-1.10	-1.90 to -0.30	0.008
Business sector	Services vs retail	0.80	-0.50 to 2.10	0.23
Business size	10–49 vs 1–9 employees	1.20	-0.40 to 2.80	0.14
Dependent variable: perceived market performance score (higher = better). Model statistics: R^2 = 0.42, adjusted R^2 = 0.39, F (6,121) = 14.6, p < 0.001. All predictors entered simultaneously; no significant multicollinearity detected (all variance inflation factors < 2). Continuous predictors centred at their means.				

Table.7 Logistic Regressions for predictors of moderate-to-high digital marketing adoption (n = 128)

Predictor	Category/scale	Adjusted OR	95% CI	p-value
Digital marketing capability score	Per 10-point increase	2.35	1.55–3.57	<0.001
Owner MO/MK score	Per 5-point increase	1.28	1.01–1.63	0.041
Perceived barriers index	Per 5-point increase	0.71	0.52–0.98	0.036
Business sector	Services vs retail	1.32	0.72–2.40	0.37
Owner education	Postgraduate vs ≤ Bachelor's	1.85	0.94–3.65	0.074
Monthly turnover	≥ PKR 1.0m vs < 0.5m	1.96	1.01–3.82	0.047
Outcome: moderate-to-high digital marketing adoption (≥ 4 tools vs < 4 tools). Model statistics: Hosmer–Lemeshow p = 0.61; Nagelkerke R^2 = 0.29.				

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Table.8 Mediation of the DMC–performance relationship by digital marketing adoption

Effect	Estimate	95% bootstrapped CI	Interpretation
Total effect of DMC on performance (c)	0.42	0.28 to 0.56	Higher DMC associated with better perceived market performance
Direct effect of DMC on performance (c′)	0.29	0.15 to 0.44	Association attenuated but remains significant after accounting for adoption
Indirect effect via adoption (ab)	0.13	0.06 to 0.23	Significant positive mediation effect through higher adoption
Proportion mediated	31%	18% to 47%	Around one-third of the DMC–performance effect operates via adoption
Outcome: Perceived market performance score; mediator: Digital marketing adoption index; main predictor: Digital marketing capability score. All models controlled for business sector, size and owner education. Estimates based on regression-based mediation with 5,000 bias-corrected bootstrap samples. The DMC and adoption were treated as continuous variables, where higher scores were associated with greater capabilities and adoption.			

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