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Impact of Digital Platforms on Innovation in Small and Medium-Sized Enterprises (SMES)

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ABSTRACT

This study examines the impact of digital platforms on innovation in small and medium-sized enterprises (SMEs) across various industries in Gujarat. A descriptive and causal research design was adopted, and primary data were collected from 390 respondents using a structured questionnaire and stratified random sampling. Structural Equation Modelling (SEM) was employed to examine the relationship between digital platforms and SME innovation. The results indicate a statistically significant model, with a chi-square value of 31.448, 9 degrees of freedom, and a p-value below 0.05. The findings highlight the importance of digital platforms in promoting innovation among SMEs.

Keywords: Digital Platforms, SMEs, Innovation, Structural Equation Modelling

Introduction

The adoption of AI and customised marketing approaches has improved the online shopping experience by strengthening customer interaction and encouraging brand loyalty. Furthermore, social media platforms have played a significant role in this transformation by enabling businesses to promote their products and conduct direct sales. Despite offering considerable growth opportunities, e-commerce faces several challenges, such as cybersecurity threats, logistical complexities, and disparities in digital infrastructure, particularly in less-developed areas. Its influence also extends to international trade, supply chain operations, and employment patterns. Consequently, changing consumer expectations have encouraged traditional retailers to adopt multichannel business strategies that integrate physical stores with digital shopping platforms. Ghazawneh and Henfridsson (2015) conceptualise a digital application marketplace as a platform component that provides a venue for exchanging applications between developers and end users within one or more digital ecosystems.

The growth of e-commerce has been largely facilitated by advancements in digital payment technologies, logistics systems, and data analytics. Unlike conventional retail channels, online marketplaces bring multiple buyers and sellers together on a common digital platform, simplifying product discovery and commercial transactions. Tripathi (2023) highlights that these marketplaces provide economies of scale, a wider selection of products, and greater price competitiveness, encouraging consumers to increasingly prefer online shopping over traditional retail outlets.

Digital marketplaces have evolved considerably since their emergence in the mid-1990s. Initially developed to facilitate online commercial transactions, they have gradually transformed into comprehensive digital ecosystems that accommodate diverse business activities, address changing customer requirements, and encourage collaboration among business partners. This transformation demonstrates not only continuous technological progress but also the growing importance of understanding consumer expectations and adapting to changing market conditions.

The expansion of digital marketplaces has been driven by the increasing use of smartphones, enhanced internet access, digital payment facilities, data analytics, and advanced logistics services. These technological developments have enabled small and medium enterprises (SMEs) to enter online markets more easily by utilising existing platforms rather than investing heavily in their own digital infrastructure. Moreover, the COVID-19 pandemic intensified the shift towards digital business operations, prompting enterprises to depend increasingly on online marketplaces to sustain their activities, connect with customers, and diversify their sales channels.

The continuing development of digital marketplaces represents both an opportunity for SMEs to strengthen their competitiveness and innovation and a challenge requiring appropriate digital skills, strategic planning, and effective management of online business activities.

Review of Literature

Bouwman et al. (2019) investigated whether SMEs undergoing digital transformation achieve better outcomes by investing greater resources in business model experimentation and strategic discussions. Their study contributed to the theoretical understanding of business model innovation within the digital

transformation context. The findings indicated that technology-driven dynamic capabilities, combined with organisational agility, can significantly enhance a firm's competitive performance. The study emphasised importance of policies that encourage SMEs to adopt digital technologies to experiment with innovative business models and implement new strategies. This perspective is particularly relevant as emerging technologies, including the IoT, AI and ML increasingly require SMEs to reconsider and adapt their existing business models to remain competitive.

Fan & Li (2019) argued that enhancing enterprise innovation requires access to substantial innovation-related resources. These resources can be acquired through two primary channels: developing and utilising the organization's internal resource base or accessing external resources from other regions through spillover effects. Both approaches can strengthen enterprises' innovation capabilities and support the development of new products, processes and technologies.

Wang et al. (2021) examined how digitalisation initiatives, when combined with strategic management actions, can contribute to the successful recovery of organisations experiencing decline. Using data from Chinese companies covering the period from 2012 to 2019, the study found that asset retrenchment, cost reduction and new product development significantly influenced turnaround success. The researchers further identified internal and external digitalisation as activities with moderately positive effects on organisational recovery. In particular, external digitalisation strengthened the positive relationship between new product introduction and the likelihood of achieving a successful turnaround.

Lagna & Ravishankar (2022) examined the influence of DPs on entrepreneurs' learning behaviours. Their findings indicated that DP provide entrepreneurs with extensive online educational resources and flexible learning opportunities, enabling them to acquire new knowledge and update their skills irrespective of time and location. Furthermore, interactive learning methods and case-based analyses offered through these platforms enhance the learning process, strengthen practical understanding and improve learning outcomes among entrepreneurs.

Duralia (2024) examined influence of digital communication tools on consumer purchasing behaviour while acknowledging the ongoing significance of traditional marketing approaches. It highlighted that incorporating mobile technologies and digital marketing strategies into organisational plans enables consumers to compare products, evaluate their features, and make informed purchasing decisions more efficiently. The study also emphasized that digital marketing encourages direct communication and community building between consumers and brands, thereby strengthening trust and customer engagement.

Salim & Issa (2024) examined impact of digital marketing channels, including social media, search engines, and email, on consumer purchasing decisions. The findings indicated that digital marketing significantly influences consumer behaviour, particularly among younger and more highly educated individuals in Soran. The study identified educational attainment, income, and social media engagement as important factors shaping purchasing patterns. It further highlighted that digital marketing provides businesses with cost-effective opportunities to connect with customers.

Hazzam (2026) found that digital marketing capabilities positively contribute to performance of SMEs, extending beyond the effects of CRM capabilities. The study further demonstrated that market orientation plays role in developing these capabilities. Additionally, the findings identified three distinct configurations involving market orientation, digital marketing capabilities and CRM capabilities that are sufficient to achieve higher levels of SME performance. These results highlight the importance of integrating market-oriented strategies with digital marketing and CRM capabilities to enhance SME performance.

Objective of the Study

- To evaluate the impact of digital platforms on SMEs innovation.

Research Design

The present study adopted a descriptive and causal research design to analyze the impact of digital platforms on SMEs innovation.

Sample Design & Sample Size

The study adopts stratified random sampling to select respondents that meet the specific criteria of the research. The sample included in present study representing SMEs across various industries in Gujarat. Respondents included owners, promoters, senior managers and personnel involved in marketing, sales, and operations. A total sample of 390 employees was selected for the present study. The sample size was considered adequate for examining the relationships among the study constructs through SEM. It provides sufficient observations for estimating the measurement and structural models and assessing the relationships between variables.

Primary Data

Primary data were collected from 390 respondents through a structured questionnaire designed to examine the influence of digital marketplaces on SME competitiveness and innovation. The questionnaire included demographic information and questions based on objectives of the study.

Analysis Related to Impact of Digital Platform on SMEs Innovation

Table 1: Table showing the response related to impact of digital platform on SMEs innovation

S. No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Digital marketplaces encourage our SME to introduce new products or services.	97 (24.87%)	156 (40%)	47 (12.05%)	39 (10%)	51 (13.08%)
2	Customer and market information available through digital marketplaces helps our SME identify new business ideas.	70 (17.95%)	172 (44.10%)	66 (16.92%)	43 (11.03%)	39 (10%)
3	Digital marketplaces encourage our SME to improve existing products or services.	74 (18.97%)	164 (42.05%)	51 (13.08%)	58 (14.87%)	43 (11.03%)
4	Digital marketplace interactions help our SME identify changing customer needs.	59 (15.13%)	172 (44.10%)	43 (11.03%)	58 (14.87%)	58 (14.87%)
5	Using digital marketplaces encourages our SME to adopt new digital tools or technologies.	66 (16.92%)	191 (48.98%)	39 (10%)	39 (10%)	55 (14.10%)
6	Digital marketplaces support our SME in experimenting with new ways of reaching and serving customers.	78 (20%)	168 (43.07%)	54 (13.85%)	51 (13.08%)	39 (10%)

Hypothesis Testing

H_O: There is no impact of digital platform on SMEs innovation.

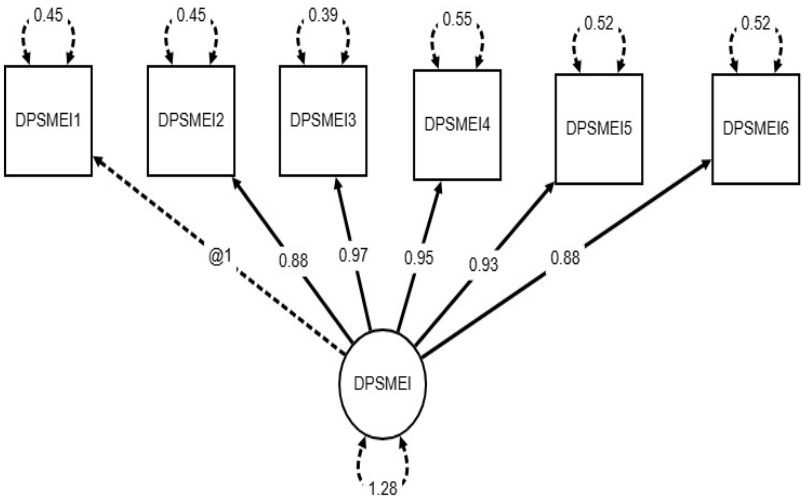


Figure 1: SEM measurement model showing factor loadings and residual variances regarding impact of digital platform on SMEs innovation

Analysis: Analysis: The factor loading values in the measurement model indicate the relationship between the observed indicators and the latent construct, Digital Platform Influence on SME Innovation (DPSMEI). The factor loadings for DPSMEI2 (Innovative Business Ideas), DPSMEI3 (Existing Product Improvement), DPSMEI4 (Changing Customer Needs), DPSMEI5 (Digital Technology Adoption), and DPSMEI6 (Innovative Customer Engagement)

are 0.88, 0.97, 0.95, 0.93, and 0.88, respectively. DPSMEI1 (New Product Introduction) has a fixed loading of 1.00, serving as the reference indicator for model identification. These values indicate positive relationships between the indicators and the latent construct, with Existing Product Improvement showing the highest estimated loading among the freely estimated indicators.

The residual values for DPSMEI1 to DPSMEI6 are 0.45, 0.45, 0.39, 0.55, 0.52, and 0.52, respectively. These values represent the variance in observed indicators. DPSMEI3 (Existing Product Improvement) has the lowest residual value (0.39), suggesting comparatively less unexplained variance, while DPSMEI4 (Changing Customer Needs) has the highest residual value (0.55). The latent construct variance is reported as 1.28. So, with this analysis it has been observed that there is significant impact of digital platform on SMEs innovation.

Table 2: Table showing test statistics value and p-value for testing hypothesis 2

Model Test User Model

Test Statistic	31.448
Degree of Freedom	9
P- Value	0.000

Result:

The SEM results indicate that the proposed measurement model is statistically significant, with a Chi-square (χ^2) test statistic of 31.448, 9 degrees of freedom, and a p-value of 0.000. Since the obtained p-value is less than the significance level of 0.05, H_0 is rejected and result confirms that there is a significant impact of digital platform on SMEs innovation.

Conclusion

The study concludes that digital platforms significantly influence innovation in small and medium-sized enterprises. These platforms facilitate access to digital technologies, market information, customer feedback, and collaborative opportunities, enabling SMEs to improve their products, services, and business processes. Digital platforms also help enterprises respond to changing customer preferences and emerging market trends. To maximise these benefits, SMEs should invest in digital skills, adopt innovative technologies, and develop effective digital strategies. The strategic utilisation of digital platforms can strengthen innovation capabilities and support the long-term growth and sustainability of SMEs.

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