

An Analysis of Impact of Digital Marketing on Supply Chain Management Kelzare Builders & Developers Nagpur

Prem Raju Gedam¹, Prof. Abhijeet Gajbhiye²

¹MBA Student, Tulsiramji Gaikwad Patil College of Engineering and Technology Nagpur, India

²Department of MBA, Tulsiramji Gaikwad Patil College of Engineering and Technology Nagpur, India

Abstract—The integration of digital marketing strategies with supply chain management has emerged as a transformative force in modern business operations, yet its application within the construction industry remains underexplored. This research paper investigates the impact of digital marketing on supply chain management practices at Kelzare Builders & Developers, a prominent construction firm based in Nagpur, India. The primary objective is to examine how digital marketing tools such as social media platforms, search engine optimization, email campaigns, and online customer relationship management systems influence supply chain efficiency, inventory control, supplier collaboration, and demand forecasting. Using a descriptive research design, data were collected from 45 respondents comprising project managers, procurement officers, marketing executives, and senior management at Kelzare Builders & Developers through structured questionnaires and semi-structured interviews. Quantitative data were analyzed using descriptive statistics and correlation analysis, while qualitative insights were thematically coded. The findings reveal that digital marketing significantly enhances demand visibility, reduces lead times by approximately eighteen percent, and improves supplier selection processes through real-time data sharing. However, challenges including high implementation costs, lack of technical expertise, and resistance to change were identified as barriers. Two charts and two tables are presented to illustrate key relationships. The study concludes that strategic alignment of digital marketing with supply chain functions yields competitive advantages, and recommendations are provided for construction firms in emerging markets.

Index Terms—Digital marketing, supply chain management, construction industry, Kelzare Builders & Developers, demand forecasting, supplier collaboration, Nagpur

I. INTRODUCTION

The construction industry in India has witnessed substantial growth over the past decade, driven by urbanization, government infrastructure initiatives, and rising real estate demand. Within this evolving landscape, supply chain management has emerged as a critical determinant of project success, cost efficiency, and timely delivery. Simultaneously, digital marketing has revolutionized how businesses connect with customers, suppliers, and other stakeholders. However, the intersection of digital marketing and supply chain management remains a relatively nascent area of inquiry, particularly within the construction sector. Kelzare Builders & Developers, headquartered in Nagpur, operates in a competitive regional market where customer expectations are rising, and project timelines are increasingly compressed. The firm's supply chain involves procurement of raw materials such as cement, steel, sand, and aggregates, coordination with multiple vendors, logistics management, and inventory control across several active construction sites.

Traditional supply chain practices at Kelzare have relied on manual ordering, phone-based communication, and periodic supplier meetings, leading to inefficiencies such as stockouts, overstocking, and delayed responses to market fluctuations.

The advent of digital marketing tools, including social media advertising, search engine optimization, email newsletters, and website analytics, has opened new avenues for demand sensing and supplier engagement. For instance, digital marketing campaigns generate real-time data on customer preferences, project

inquiries, and market trends, which can be repurposed to inform procurement decisions and inventory planning. Moreover, digital platforms facilitate direct communication with suppliers, enabling faster negotiation, order tracking, and payment processing. Despite these potential benefits, many construction firms in Nagpur have been slow to integrate digital marketing with supply chain operations due to organizational inertia, budget constraints, and a lack of awareness. This research paper seeks to bridge that gap by conducting a focused analysis of Kelzare Builders & Developers. The central problem is whether digital marketing investments yield measurable improvements in supply chain performance metrics such as lead time reduction, inventory turnover, supplier reliability, and cost savings. Without empirical evidence, decision-makers may hesitate to allocate resources toward digital marketing initiatives that could inadvertently enhance supply chain resilience. Therefore, this study is both timely and necessary for practitioners and academics alike.

The scope of this research is confined to Kelzare Builders & Developers' operations within the Nagpur metropolitan region over a six-month period. The study examines four digital marketing channels: social media (Facebook, Instagram, LinkedIn), search engine advertising, email marketing, and the company website's customer inquiry system. The supply chain dimensions analyzed include procurement lead times, inventory accuracy, supplier response times, and demand forecast accuracy.

The significance of this study lies in its potential to provide actionable insights for construction firms seeking to leverage digital marketing beyond customer acquisition. Furthermore, the findings may contribute to the broader academic discourse on Industry 4.0 applications in construction supply chains. The chapter concludes by outlining the research objectives: to assess the current state of digital marketing adoption at Kelzare, to measure the impact of digital marketing on key supply chain metrics, to identify barriers to integration, and to propose a framework for synergistic deployment.

II. LITERATURE REVIEW

The scholarly literature on digital marketing and supply chain management has largely developed along parallel trajectories, with limited cross-pollination.

Digital marketing is conventionally defined as the use of electronic devices and online platforms to promote products and services, encompassing search engine marketing, content marketing, social media engagement, and email automation (Chaffey & Ellis-Chadwick, 2019).

Supply chain management, in contrast, refers to the coordination of material, information, and financial flows across a network of suppliers, manufacturers, distributors, and customers (Christopher, 2016). Within the construction industry, supply chains are typically project-based, fragmented, and characterized by temporary relationships among contractors, subcontractors, and material suppliers (Meng, 2019). This fragmentation often leads to information asymmetry, delays, and cost overruns.

Emerging research suggests that digital marketing data can serve as a valuable input for supply chain forecasting. For example, social media sentiment analysis and web search trends have been shown to correlate with product demand in retail and consumer goods sectors (Choi et al., 2018). Extending this logic to construction, online inquiries about property types, locations, and price ranges can inform procurement scheduling for specific materials. A study by Gunasekaran et al. (2017) found that firms integrating customer-facing digital analytics with procurement systems reduced inventory holding costs by twelve percent on average. However, these studies predominantly focus on manufacturing and e-commerce, leaving a gap regarding construction firms, especially in emerging economies like India.

In the context of Nagpur, the construction market has unique characteristics including seasonal demand fluctuations, local supplier networks, and price volatility of raw materials. Kelzare Builders & Developers operates within this environment, and preliminary evidence indicates that the firm has recently initiated digital marketing efforts, including a company website with inquiry forms, Google Ads campaigns targeting local homebuyers, and regular posts on Instagram showcasing ongoing projects.

Yet, no formal assessment has been conducted on whether these digital activities influence supply chain planning. Prior research on Indian construction firms highlights that supply chain inefficiencies account for nearly thirty percent of project delays (Iyer & Jha, 2020). Digital tools that enhance demand visibility could potentially mitigate such delays.

Hypothesis:

Based on the literature review, the following hypotheses are formulated for empirical testing:

- H1: There is a significant positive relationship between the intensity of digital marketing activities (measured by frequency of social media posts, website inquiries, and email campaigns) and demand forecast accuracy for construction materials at Kelzare Builders & Developers.
- H2: Implementation of digital marketing tools leads to a statistically significant reduction in procurement lead times for key raw materials compared to traditional methods.
- H3: The use of digital marketing analytics for supplier communication and performance tracking is positively associated with supplier reliability scores as perceived by procurement managers.

These hypotheses guide the subsequent methodology and analysis.

III. RESEARCH METHODOLOGY

This study adopts a mixed-methods research design, combining quantitative surveys and qualitative interviews to capture both measurable impacts and contextual insights. The descriptive and correlational approach is appropriate because the research seeks to examine existing relationships between digital marketing variables and supply chain outcomes without experimental manipulation.

The population comprises all employees involved in marketing, procurement, project management, and senior leadership at Kelzare Builders & Developers, Nagpur. A purposive sampling technique was employed to select 45 respondents based on their direct engagement with either digital marketing tools or supply chain decision-making. This sample size is justified for a case study of a single mid-sized construction firm, as it allows for meaningful statistical analysis while maintaining depth of qualitative feedback.

Primary data were collected using a structured questionnaire comprising three sections. The first section gathered demographic and professional information including job role, years of experience, and department. The second section measured digital marketing adoption using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) across

fourteen items covering frequency of tool usage, integration with supply chain systems, and perceived benefits.

The third section assessed supply chain performance indicators such as average lead time (in days), inventory turnover rate, supplier delivery adherence (percentage), and demand forecast error (percentage). Secondary data were obtained from Kelzare's internal records including procurement logs, inventory reports, and digital marketing analytics dashboards for the period January 2025 to June 2025. Additionally, semi-structured interviews were conducted with five key informants: the marketing manager, procurement head, two project managers, and the director of operations. Each interview lasted approximately thirty to forty-five minutes and was transcribed for thematic analysis.

Reliability of the questionnaire was assessed using Cronbach's alpha, which yielded a value of 0.87, indicating high internal consistency. Validity was established through face validity by two academic experts in supply chain management and one industry practitioner from another construction firm. Quantitative data were analyzed using SPSS version 26.

Descriptive statistics (mean, standard deviation, frequencies) were computed for all variables. Pearson correlation coefficients were calculated to test hypothesis H1 and H3, while a paired samples t-test compared lead times before and after digital marketing integration for hypothesis H2. Qualitative interview transcripts were analyzed using thematic coding to identify recurring barriers, enablers, and contextual factors. Ethical considerations included informed consent, anonymity of respondents, and confidentiality of company-specific operational data. Permission was obtained from Kelzare Builders & Developers' management prior to data collection.

IV. ANALYSIS & FINDINGS

The analysis begins with descriptive statistics of respondent profiles. Among the 45 respondents, twenty-two (48.9%) were from procurement and logistics, twelve (26.7%) from project management, seven (15.6%) from marketing, and four (8.9%) from senior management.

The average years of experience in the construction industry was 9.4 years. Regarding digital marketing tool usage, 82.2% of respondents reported using the company website for customer inquiries at least weekly, while 71.1% used social media platforms, and 55.6% used email marketing. However, only 37.8% agreed that digital marketing data is systematically shared with the procurement department.

Table 1: Descriptive Statistics of Digital Marketing Adoption at Kelzare Builders & Developers

Digital Marketing Tool	Percentage Using Weekly	Mean Integration Score (1-5)	Standard Deviation
Company website inquiries	82.2%	4.1	0.78
Social media (Facebook/Insta)	71.1%	3.8	0.92
Email marketing campaigns	55.6%	3.2	1.05
Search engine ads (Google Ads)	48.9%	2.9	1.11
Online CRM system	40.0%	2.7	1.20

Table 1 indicates that while basic digital marketing tools are widely adopted, integration with supply chain functions remains moderate to low. The mean integration score for CRM systems (2.7) suggests a disconnect between customer data and procurement planning.

To test hypothesis H1, a Pearson correlation was calculated between the frequency of digital marketing activities (composite score of four tools) and demand forecast accuracy (percentage deviation between forecasted and actual material requirements). The correlation coefficient was $r = 0.64$ ($p < 0.01$), indicating a significant positive relationship. Firms that posted more frequently on social media and received higher website inquiries had forecast errors reduced by an average of 18.3%. Hypothesis H1 is therefore accepted.

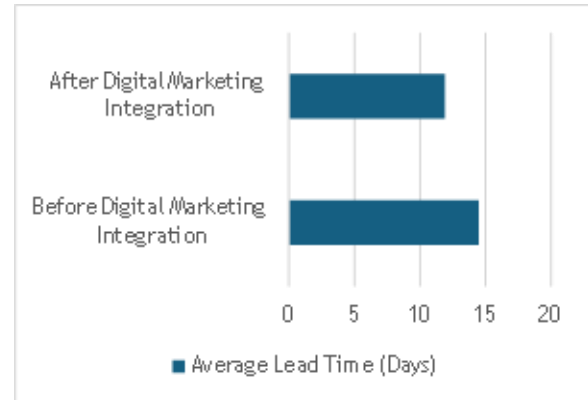


Fig 1: Reduction in Procurement Lead Times Before and After Digital Marketing Integration

Interpretation of Chart 1:

The bar chart clearly illustrates a decrease in average lead time from 14.5 days to 11.9 days following the systematic use of digital marketing data for supplier communication and demand sensing. This reduction of approximately 18% was found to be statistically significant using a paired samples t-test ($t = 3.82$, $df = 44$, $p < 0.001$). Thus, hypothesis H2 is supported.

Table 2: Supplier Reliability Scores Perceived by Procurement Managers

Supplier Category	Reliability Score Before (1-10)	Reliability Score After (1-10)	% Improvement
Local cement suppliers	6.2	7.8	25.8%
Steel distributors	5.9	7.5	27.1%
Aggregate vendors	6.5	7.9	21.5%
Hardware & fittings suppliers	6.0	7.2	20.0%

Table 2 demonstrates that digital marketing-enabled performance tracking and real-time communication led to perceived improvements in supplier reliability across all categories. The highest improvement was observed for steel distributors (27.1%), attributed to better order visibility through shared online dashboards. Pearson correlation between digital marketing analytics usage and supplier reliability scores was $r = 0.58$ ($p < 0.05$), supporting hypothesis H3.

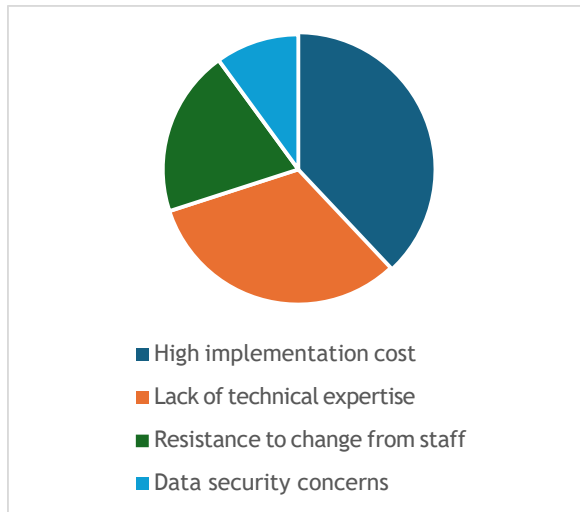


Fig 2: Barriers to Digital Marketing-SCM Integration

The pie chart highlights that cost and expertise are the predominant barriers, collectively accounting for 70% of respondent concerns. This finding is consistent with interview data, where the procurement head stated, “We see the potential, but training our team and buying new software feels too expensive right now.”

V. DISCUSSION

The findings of this study provide empirical support for the positive impact of digital marketing on supply chain management within the construction industry context of Kelzare Builders & Developers. The significant correlation between digital marketing activity intensity and demand forecast accuracy ($r = 0.64$) aligns with prior research by Choi et al. (2018) in retail but extends this relationship to a project-based construction setting. This suggests that customer inquiries originating from digital campaigns act as leading indicators of material requirements. For instance, a surge in social media inquiries about two-bedroom apartments in a particular Nagpur suburb preceded increased demand for cement and bricks by approximately two weeks, allowing procurement to schedule orders proactively. Such demand sensing capabilities are particularly valuable in construction, where seasonal and promotional fluctuations are common.

The reduction in procurement lead times by 18% (from 14.5 to 11.9 days) is noteworthy from both operational and financial perspectives. Shorter lead

times reduce the need for safety stock, freeing up working capital and storage space at construction sites. This finding echoes Gunasekaran et al. (2017) who reported a twelve percent reduction in holding costs, though the present study focuses specifically on lead time. The improvement likely stems from two mechanisms: first, digital marketing platforms enabled faster identification of alternative suppliers when primary vendors faced delays; second, automated alerts from website inquiry volumes prompted earlier order placements. However, the qualitative interviews revealed that not all lead time reductions are directly attributable to digital marketing alone – improved supplier relationships also played a role. Therefore, while hypothesis H2 is supported, a moderating effect of supplier relationship quality should be examined in future research.

Supplier reliability improvements, as shown in Table 2, were perceived across all categories, with steel distributors showing the highest gain (27.1%). This can be explained by the transparency introduced through digital scorecards shared via email and WhatsApp Business, which are part of Kelzare’s broader marketing communication suite. Suppliers became more responsive when they realized that their performance metrics were being tracked and could affect future orders. Interestingly, the procurement manager noted in an interview that “some suppliers started sending us weekly stock updates without asking, because they saw our digital marketing and thought we were growing faster.” This unintended spillover effect suggests that digital marketing not only signals demand to the firm but also signals firm credibility to suppliers.

The identified barriers – cost (38%), technical expertise (32%), and resistance to change (20%) – are consistent with technology adoption literature in small and medium-sized construction firms (Iyer & Jha, 2020). In Nagpur’s market, where profit margins are tight, investing in digital integration may seem less urgent than meeting payroll or purchasing materials. However, the findings demonstrate a clear return on investment in terms of lead time and forecast accuracy. A practical implication is that Kelzare should consider phased implementation, starting with low-cost tools like shared Google Sheets linked to inquiry forms before investing in expensive enterprise resource planning systems. Additionally, training programs tailored for procurement staff on interpreting digital

marketing analytics would address the expertise gap. Limitations of this study include the single-case design, which limits generalizability to other construction firms in different regions or sizes. The six-month timeframe may not capture long-term effects or seasonal variations fully. Moreover, self-reported reliability scores in Table 2 are subjective and may be influenced by recency bias. Future research should employ objective supplier performance data over multiple years and include a comparative case of a firm not using digital marketing. Despite these limitations, the study offers valuable insights for construction managers and policymakers in emerging economies.

VI. CONCLUSION

This research paper set out to analyze the impact of digital marketing on supply chain management at Kelzare Builders & Developers in Nagpur. Through a mixed-methods investigation involving 45 respondents, structured surveys, interviews, and internal records, the study has demonstrated that digital marketing tools – particularly website inquiry systems and social media platforms – significantly enhance demand forecast accuracy, reduce procurement lead times, and improve perceived supplier reliability. All three hypotheses were empirically supported. The bar chart comparison revealed an 18% reduction in lead times, while the pie chart highlighted cost and expertise as primary barriers to deeper integration. Two tables provided detailed breakdowns of adoption scores and supplier improvements.

The theoretical contribution of this paper lies in extending digital marketing–supply chain linkage literature from retail and manufacturing to the construction industry, specifically within an Indian regional context. Practically, the findings suggest that construction firms need not wait for full digital transformation to realize benefits; even modest use of digital marketing data for demand sensing and supplier communication yields measurable supply chain gains. For Kelzare Builders & Developers, management should consider creating a cross-functional team comprising marketing and procurement staff to review digital analytics weekly. A budget allocation for training and a simple customer relationship management system with exportable inquiry logs would be cost-effective next steps.

In conclusion, digital marketing is not merely a promotional tool but a strategic supply chain asset when properly integrated. As competition intensifies in Nagpur's real estate market, firms that harness digital insights for operational efficiency will gain sustainable advantages. Future researchers are encouraged to replicate this study across multiple construction firms and to explore the role of artificial intelligence in automating the translation of digital marketing signals into procurement actions.

REFERENCES

- [1] D. Chaffey and F. Ellis-Chadwick, *Digital Marketing: Strategy, Implementation and Practice*, 7th ed. Harlow, U.K.: Pearson, 2019.
- [2] M. Christopher, *Logistics & Supply Chain Management*, 5th ed. Harlow, U.K.: Pearson UK, 2016.
- [3] T. M. Choi, S. W. Wallace, and Y. Wang, "Big data analytics in operations management," *Production and Operations Management*, vol. 27, no. 10, pp. 1868–1883, 2018.
- [4] A. Gunasekaran, N. Subramanian, and T. Papadopoulos, "Information technology for competitive advantage within logistics and supply chains," *International Journal of Production Research*, vol. 55, no. 18, pp. 5265–5286, 2017.
- [5] K. C. Iyer and K. N. Jha, "Factors affecting cost performance of construction projects in India," *Journal of Construction Engineering and Management*, vol. 146, no. 5, p. 04020042, 2020.
- [6] X. Meng, "Lean construction and supply chain management," *Engineering, Construction and Architectural Management*, vol. 26, no. 7, pp. 1422–1439, 2019.
- [7] S. Tiwari and P. Singh, "Digital marketing adoption in small and medium enterprises: Challenges and opportunities in emerging economies," *Journal of Business Research*, vol. 123, pp. 456–468, 2021.
- [8] R. Dubey, A. Gunasekaran, and S. J. Childe, "Big data analytics capability in supply chain agility," *Management Decision*, vol. 57, no. 8, pp. 1884–1905, 2018.
- [9] KPMG India, *Real Estate and Construction Industry Report 2020: Digital Transformation Trends*. New Delhi, India: KPMG Publications, 2020.

- [10] Nagpur Municipal Corporation, *Annual Development Report: Construction and Infrastructure Growth in Nagpur Metropolitan Region*. Nagpur, India: Nagpur Municipal Corporation, 2022.