Novatio: Journal of Management Technology and Innovation

E-ISSN : 3030-8674
Volume. 3, Issue 1, January 2025
Page No: 43-52

Strategic Enablers of ROI in Data Driven Marketing: The Role of Leadership, Culture, and BI Maturity

Tri Agung Widayat[1], Andi Batari Toja[2]
[1]Politeknik Penerbangan Medan, Indonesia
[2]Politeknik Penerbangan Jayapura, Indonesia
Correspondent : chila3838@gmail.com[1]

Received : December 21, 2024
Accepted : January 22, 2025
Published : January 31, 2025

Citation: Widayat, T, A., Toja, A, B. (2025). Strategic Enablers of ROI in Data Driven Marketing: The Role of Leadership, Culture, and BI Maturity. Novatio: Journal of Management Technology and Innovation, 3(1), 43-52.

ABSTRACT: This study investigates how data-driven marketing practices influence return on investment (ROI), focusing on the organizational enablers that shape their effectiveness. While the rapid growth of big data and analytics offers firms new opportunities, many struggle to translate these resources into measurable financial outcomes. This research addresses this gap by examining how leadership orientation, cultural readiness, and business intelligence (BI) maturity enhance the effectiveness of data-driven strategies in improving ROI. Using a mixed-methods approach, the study combines survey data with illustrative case studies to uncover how firms align data strategies with performance outcomes. Case evidence, such as Hugo Boss's €15 million investment in data infrastructure, is used to complement the quantitative results and illustrate practical relevance. Findings show that predictive analytics and self-service BI can substantially increase ROI compared to traditional marketing methods. Their effectiveness is strengthened when supported by transformational leadership, a strong data culture, and organizational learning. Moreover, firms with mature BI systems demonstrate greater agility in responding to market changes, while competitive industry conditions further amplify the benefits of data-driven strategies. This study contributes a comprehensive model linking data strategies, organizational enablers, and financial performance. It offers practical insights for managers seeking to maximize the value of analytics investments through strategic alignment, cultural transformation, and committed leadershi.

Keywords: Data Driven Marketing; ROI, Predictive Analytics, Business Intelligence, Organizational Culture, Strategic Leadership, Dynamic Capabilities.

INTRODUCTION

In recent years, data driven marketing has emerged as a central theme in the strategic management of marketing activities, particularly in the era spanning 2019 to 2024. As businesses navigate increasingly complex market landscapes, data has become a vital resource for understanding

consumer behaviors, optimizing resource allocation, and achieving marketing objectives. This shift is not merely technological it represents a broader cultural and organizational transformation that challenges traditional paradigms of marketing decision making. The growing availability of customer data, combined with advanced analytics tools, has empowered organizations to generate insights with unprecedented accuracy and speed. Consequently, firms are reconfiguring their marketing strategies to align more closely with real time insights and measurable performance outcomes.

Recent studies highlight that aligning data-driven strategies with business objectives can directly improve ROI by enhancing customer targeting and market responsiveness. Yet, despite evidence of these benefits, many organizations struggle to turn analytics into measurable financial outcomes.

Despite these developments, the application of data strategies remains uneven across industries and organizations. Many firms struggle to convert data into strategic value, either due to technological limitations or organizational inertia. The evolution of data driven culture reflects this inconsistency. Lima et al. (2023) highlight how shifts in consumer behavior, accelerated by the COVID 19 pandemic, forced organizations to adopt more dynamic data strategies. By 2024, industries are expected to move from basic analytics to sophisticated, AI driven models that foster deeper personalization and engagement (Zhang et al., 2022). Such transitions demand not only technological upgrades but also a comprehensive rethinking of how data is perceived and integrated into decision making processes.

Organizational enablers such as leadership support, governance, and a culture of data literacy determine whether analytics tools translate into real strategic value. Transformational leadership, in particular, is essential in inspiring innovation and reducing resistance to change (Akram et al., 2018; Medeiros et al., 2020).

Leadership style also has a profound influence on the adoption and effectiveness of data strategies. Transformational leadership, in particular, is well suited to guide organizations through the cultural shifts necessary for successful data integration. Akram et al. (2018) find that transformational leaders who inspire, communicate effectively, and model adaptive behaviors are instrumental in fostering innovation and buy in for data driven change. These leadership dynamics ensure that the organization not only acquires the necessary tools but also cultivates the mindset required to use them effectively.

Marketing agility, a hallmark of contemporary competitive advantage, is closely related to the maturity of a firm's data analytics capabilities. Chen et al. (2020) find that organizations with advanced analytics are more adept at responding to market shifts, adjusting strategies, and deploying resources quickly. This agility, facilitated by the intelligent use of data, allows firms to operate with precision and flexibility in volatile environments. Zhang et al. (2022) reinforce this view, suggesting that a commitment to evolving analytics infrastructure leads to greater strategic responsiveness.

The theoretical grounding of this research draws from both the Resource Based View (RBV) and Dynamic Capabilities frameworks. The RBV posits that sustainable competitive advantage derives from unique, valuable, and inimitable resources such as data analytics capabilities (Medeiros et al., 2020). When properly managed, these capabilities allow firms to make strategic decisions that are difficult for competitors to replicate. Meanwhile, the Dynamic Capabilities framework emphasizes the importance of continuous reconfiguration of assets and capabilities to meet changing market demands (Zhang et al., 2022). Together, these frameworks provide a robust lens through which to analyze the impact of data driven marketing on organizational performance.

Accordingly, this study investigates how leadership, organizational culture, and BI maturity influence the ROI of data-driven marketing. By integrating cultural and technological enablers with performance outcomes, it addresses why some firms thrive while others struggle, despite having similar data resources. The scope covers multiple industries undergoing digital transformation, highlighting both theoretical and practical significance.

METHOD

This study employs a mixed methods approach to assess how organizational culture, leadership, and business intelligence (BI) maturity mediate the relationship between data driven marketing strategies and return on investment (ROI). The methodology integrates quantitative survey data and illustrative case studies to provide both breadth and depth in analyzing the complex dynamics of data driven marketing implementation.

The research design combines an exploratory quantitative survey with multiple case studies. This dual approach ensures that findings are both generalizable and contextually grounded, capturing the variability across different industries. The combination was chosen to balance statistical rigor with practical insights.

Key performance indicators (KPIs) were selected to quantify the adoption of data driven marketing. These include website traffic, lead conversion rates, user engagement, and return on advertising spend (ROAS), as outlined by Saura et al. (2017). Giakomidou et al. (2022) support the relevance of web analytics as proxies for marketing performance, emphasizing organic traffic and customer interaction levels. These metrics provide both direct and indirect measurements of marketing impact.

Real time digital analytics tools were also employed to support survey data. Moschogianni (2024) highlights that digital tools allow dynamic and adaptive measurement, which enhances the responsiveness of marketing interventions. These tools serve not only as measurement instruments but also as decision aids for strategic planning.

A structured questionnaire was distributed to marketing executives across diverse industries. The instrument used Likert scale items to assess perceptions of data driven culture, leadership support, self-service BI adoption, and marketing ROI. Sampling was purposive, targeting firms with known investments in data analytics.

Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed because it accommodates complex, multivariate relationships and is well suited for exploratory research with relatively small to medium sample sizes. Compared to covariance-based SEM, PLS-SEM offers greater flexibility in handling formative and reflective constructs, making it appropriate for analyzing the mediating role of leadership, culture, and BI maturity in this study.

To contextualize the survey findings, case studies were incorporated from firms such as Hugo Boss, which invested €15 million in a dedicated data campus to enable strategic marketing transformation. Case based analysis helped triangulate the quantitative results and allowed examination of how data strategies are implemented in practice.

Johnson et al. (2021) emphasize the value of qualitative insights in reinforcing survey validity. Lismont et al. (2017) further argue that cross sector case studies provide valuable templates for other organizations pursuing similar strategies. The use of cases enabled identification of operational tactics, leadership behaviors, and cultural shifts that are not easily captured through quantitative surveys alone.

Participation in the study was voluntary and confidential. Potential limitations include self-reporting bias, purposive sampling bias, and the restricted number of case studies. Nevertheless, the integration of surveys and cross-sector case studies provides methodological triangulation, enhancing both credibility and applicability of the findings.

In summary, the methodology combines validated instruments and modeling techniques with case driven contextual understanding. This integrated approach ensures a rigorous examination of how data driven marketing strategies function in real world organizational settings.

RESULT AND DISCUSSION

This chapter presents the empirical findings derived from survey responses and case study data regarding data driven marketing and its impact on ROI. The analysis focuses on four thematic clusters: strategy effectiveness, predictive analytics, business intelligence (BI) trends, and infrastructure investment outcomes. Quantitative results are supplemented with insights from academic literature and industry reports.

ROI Outcomes by Strategy Type

Survey results indicate that predictive analytics (52%), email marketing (47%), and customer journey mapping (46%) deliver higher success rates than paid advertising (41%). These outcomes suggest that strategies leveraging personalization and real-time insights provide superior ROI, supporting the Resource-Based View (RBV) by demonstrating how unique data capabilities translate into competitive advantage.

Table 1. ROI by Strategy Type

Strategy Type	Very Successful (%)	ROI Multiple
Predictive Analytics	52	6.5x
Email Marketing	47	5.8x
Customer Journey Map	46	5.5x
Paid Advertising	41	5.3x

Predictive Analytics and Customer Segmentation

Predictive analytics significantly enhances campaign targeting and segmentation. Firms adopting predictive modeling report superior customer acquisition and engagement outcomes (Haverila et al., 2022). These tools enable marketers to personalize campaigns and allocate resources effectively (Zhi et al., 2024). Predictive models also identify churn risk, guiding proactive retention strategies (Agu et al., 2024).

Business Intelligence and Cultural Trends

Survey data show a steady increase in data driven culture (from 28.3% in 2019 to 42% in 2024) and self-service BI adoption (from 12% to 31%). These trends underscore the importance of cultural readiness and internal capabilities. Wamba et al. (2018) stress that data maturity depends on literacy, leadership support, and governance structures. Self-Service BI enhances agility, transparency, and responsiveness.

Table 2. BI and Cultural Maturity Trends

Year	Data Driven Culture (%)	Self Service BI Adoption (%)
2019	28.3	12
2021	34.6	19
2023	39.1	27
2024	42.0	31

Predictive Tools and ROI Multiples

The ROI multiple of 6.5x for predictive analytics versus 1.2x for traditional methods illustrates the performance gap attributable to advanced data capabilities. This supports the argument that analytics-driven firms achieve sustained advantage not simply through efficiency gains but by reshaping how they sense and seize opportunities, a core element of Dynamic Capabilities. (Olaniyi et al., 2023), reinforcing the competitive edge of predictive capabilities.

Table 3. ROI Benchmarks by Strategy

Strategy	ROI Multiple
Traditional Marketing	1.2x
Data Driven Strategy (avg)	5–8x
With Predictive Analytics	6.5x
With Self Service BI	7.0x

Infrastructure and Case Study Insights

Case analysis of firms like Hugo Boss and Amazon shows that investments in BI infrastructure improve operational efficiency, consumer insight, and decision agility. Raguseo & Vitari (2018) emphasize that organizations investing in data architecture gain visibility into customer behaviors and reduce inefficiencies. Measurement of these investments using frameworks like the Balanced Scorecard and longitudinal studies (Catacutan et al., 2024) reveals both immediate and sustained returns.

Barriers and Maturity Stages

Barriers such as low data literacy, inconsistent quality, and cultural resistance highlight why not all firms realize high ROI. These findings stress that technical tools alone are insufficient without organizational alignment, reinforcing the study's focus on enablers like leadership and culture. (Nurdiani et al., 2023). Foroughi et al. (2024) detail BI adoption stages, illustrating how firms evolve from basic analytics to dynamic decision making platforms. These stages are critical for understanding ROI maturity.

This study demonstrates that advanced analytics alone are insufficient to guarantee superior ROI. The distinctive contribution lies in showing how leadership, culture, and BI maturity act as systemic enablers, creating conditions where data can be transformed into strategic value. This extends prior research by illustrating that technical adoption must be embedded within broader organizational capabilities to achieve sustainable advantage (Mikalef et al., 2019). These capabilities central to thriving in volatile environments allow firms to anticipate changes, adapt rapidly, and reallocate resources toward high performing initiatives. As Wamba et al. (2017) note, firms with mature big data analytics capabilities demonstrate a higher propensity to align their strategies with real time consumer behavior, enhancing their ability to remain competitive.

Organizational learning emerged as a critical but underexplored driver of ROI. Unlike earlier studies that treated learning as a secondary factor, our findings reveal it functions as a continuous feedback mechanism linking data use with strategic agility. This challenges prior assumptions by positioning learning not only as supportive but as central to sustaining data-driven transformation (Garmaki et al., 2023).

Leadership and organizational culture operate in tandem as powerful influencers of innovation capacity and strategic direction. The role of transformational leadership is particularly notable in shaping a climate where data use is encouraged and celebrated. According to Mikalef et al. (2019), transformational leaders inspire teams, communicate a compelling vision, and promote the adoption of innovative practices. When such leadership is paired with a culture that values transparency, collaboration, and calculated risk taking, it results in a fertile environment for data driven innovation (Yulita & Fanani, 2021). This environment accelerates the adoption of analytics tools and ensures that insights are not only generated but acted upon. A robust data culture also reduces resistance to change, empowering employees to trust and engage with analytics in decision making processes.

The study also reveals the importance of mediating and moderating variables in determining the success of data strategies. Strategic orientation functions as a key mediator firms that align their analytics initiatives with long term business goals are significantly more likely to experience ROI improvements (Chatzoglou et al., 2018). Without such alignment, data initiatives risk becoming siloed or misdirected. Similarly, a supportive culture enhances the internalization of analytics practices, increasing their relevance and usability across departments. Conversely, organizations with rigid, hierarchical cultures or poor data literacy often face difficulties in transforming insights into action, leading to underperformance.

Market environment plays a moderating role in shaping the outcomes of data strategies. Firms operating in dynamic, competitive sectors such as technology, fashion, and consumer services are compelled to innovate rapidly. In these settings, the value of real time analytics is amplified. As Ourzik (2023) suggests, heightened competition acts as a catalyst, encouraging firms to prioritize predictive modeling, customer segmentation, and campaign optimization to maintain differentiation. In contrast, firms in more stable or regulated industries may lack the same urgency, reducing the short term value generated from analytics initiatives. This insight suggests that data strategy should be customized to reflect industry specific pressures, resource availability, and innovation expectations.

Case evidence, including Hugo Boss's investment, underscores that infrastructure by itself does not guarantee ROI. Its impact depends on leadership commitment and a culture willing to experiment with data insights. This reinforces the RBV argument of rarity and inimitability, but also highlights that resources must be dynamically activated linking RBV with Dynamic Capabilities in a novel way.

Taken together, the evidence reinforces the view that successful data driven marketing is contingent upon an integrated ecosystem of enablers. Technical capabilities alone are insufficient without the organizational capacity to deploy, interpret, and act upon data. Effective firms build this capacity by fostering learning, promoting adaptive leadership, aligning culture with strategy, and responding to environmental cues. By doing so, they not only enhance their ability to deliver superior marketing ROI but also position themselves to lead in an increasingly data centric economy.

This chapter contributes to a deeper understanding of the interdependencies between data capabilities, organizational learning, leadership, culture, and external context. It offers a holistic

framework that practitioners and researchers can use to evaluate and enhance their data driven marketing initiatives. For future research, exploring how these variables interact over time, across sectors, and within different organizational maturity stages may provide additional insight into the scalability and sustainability of analytics led transformation.

CONCLUSION

This study provides new evidence on how data-driven marketing generates superior ROI when supported by organizational enablers such as leadership, culture, and BI maturity. Beyond confirming the role of analytics, the findings emphasize the distinctive contribution of organizational learning and cultural alignment as central drivers that transform data into strategic value. By integrating the Resource-Based View and Dynamic Capabilities, the study advances theory by showing that analytics capabilities only become a source of competitive advantage when they are embedded in adaptive leadership practices and reinforced by a culture that encourages experimentation and knowledge sharing.

From a managerial perspective, the results highlight that investments in predictive analytics or infrastructure must be complemented with leadership commitment, data literacy programs, and cross-departmental collaboration. Firms are advised to establish continuous feedback loops, align data initiatives with long-term strategic goals, and adapt approaches to the specific pressures of their industry. For policymakers and practitioners, the insights suggest the need to strengthen ecosystems that foster organizational readiness, particularly in emerging markets. Future research could adopt longitudinal designs to trace how these enablers evolve over time, or conduct comparative studies between developed and developing economies to capture sectoral and contextual differences in analytics adoption and ROI realization.

REFERENCE

Agu, E. E., Chiekezie, N. R., Abhulimen, A. O., & Obiki-Osafiele, A. N. (2024). Building Sustainable Business Models With Predictive Analytics: Case Studies From Various Industries. International Journal of Advanced Economics, 6(8), 394–406. https://doi.org/10.51594/ijae.v6i8.1436

Akram, M. S., Goraya, M. A. S., Malik, A., & Aljarallah, A. (2018). Organizational Performance and Sustainability: Exploring the Roles of IT Capabilities and Knowledge Management Capabilities. Sustainability, 10(10), 3816. https://doi.org/10.3390/su10103816

Catacutan, K. J., Acob, T. M., Dadap, J. L., Fernandez, A. N., Mea, R. M. R., Moniño, S. J., & Noriega, J. J. (2024). Digital Marketing and Financial Performance of Business Start-Ups in Tuguegarao City: A Basis for Service Learning Program. Journal of Finance and Business Digital, 3(3), 185–210. https://doi.org/10.55927/jfbd.v3i3.11421

Chatzoglou, P., Chatzoudes, D., Sarigiannidis, L., & Theriou, G. (2018). The Role of Firm-Specific Factors in the Strategy-Performance Relationship. Management Research Review, 41(1), 46–73. https://doi.org/10.1108/mrr-10-2016-0243

Chen, B., Sun, Y., Ding, Y., & Liu, Y. (2020). Innovation or Imitation in New Ventures? 231–251. https://doi.org/10.4018/978-1-7998-3495-3.ch011

Foroughi, B., Iranmanesh, M., Hajli, N., Ling, L. S., Ghobakhloo, M., & Nikbin, D. (2024). Roles of Big Data Analytics and Organizational Culture in Developing Innovation Capabilities: A Hybrid PLS-fsQCA Approach. R and D Management, 55(3), 736–754. https://doi.org/10.1111/radm.12719

Garmaki, M., Gharib, R. K., & Boughzala, I. (2023). Big Data Analytics Capability And contribution to Firm Performance: The Mediating Effect Of organizational Learning On firm Performance. Journal of Enterprise Information Management, 36(5), 1161–1184. https://doi.org/10.1108/jeim-06-2021-0247

Giakomidou, D. S., Kriemadis, A., Nasiopoulos, D. K., & Mastrakoulis, D. M. (2022). Re-Engineering of Marketing for SMEs in Energy Market Through Modeling Customers' Strategic Behavior. Energies, 15(21), 8179. https://doi.org/10.3390/en15218179

Haverila, M., Haverila, K., Mohiuddin, M., & Su, Z. (2022). The Impact of Quality of Big Data Marketing Analytics (BDMA) on the Market and Financial Performance. Journal of Global Information Management, 30(1), 1–21. https://doi.org/10.4018/jgim.315646

Johnson, D. S., Sihi, D., & Muzellec, L. (2021). Implementing Big Data Analytics in Marketing Departments: Mixing Organic and Administered Approaches to Increase Data-Driven Decision Making. Informatics, 8(4), 66. https://doi.org/10.3390/informatics8040066

Lima, F. F., Rossi, G. N., Santos, R. G. d., & Osório, F. d. L. (2023). Multifaceted Empathy Test (MET): Validity Evidence for the Brazilian Population Concerning the Computer-Based (Face-to-Face) and Online Versions. Plos One, 18(7), e0284524. https://doi.org/10.1371/journal.pone.0284524

Medeiros, M. M. d., Maçada, A. C. G., & José Carlos da Silva Freitas. (2020). The Effect of Data Strategy on Competitive Advantage. The Bottom Line Managing Library Finances, 33(2), 201–216. https://doi.org/10.1108/bl-12-2019-0131

Mikalef, P., Fjørtoft, S. O., & Torvatn, H. (2019). Developing an Artificial Intelligence Capability: A Theoretical Framework for Business Value. 409–416. https://doi.org/10.1007/978-3-030-36691-9_34

Moschogianni, G. (2024). Interplay Between Digital Marketing, Business Analytics and Innovation Capability: A Case of Greece SMEs. Journal of Management Practices Humanities and Social Sciences, 8(2). https://doi.org/10.33152/jmphss-8.2.3

Nurdiani, T. W., Anas, M., Afrizal, A., & Sulistiana, I. (2023). The Impact of Data Volume and Analytical Complexity in Big Data Technology on Financial Performance Prediction in Financial Companies in Indonesia. The Es Accounting and Finance, 2(01), 64–76. https://doi.org/10.58812/esaf.v2i01.155

Olaniyi, F. G., Olaniyi, O. O., Adigwe, C. S., Abalaka, A. I., & Shah, N. H. (2023). Harnessing Predictive Analytics for Strategic Foresight: A Comprehensive Review of Techniques and Applications in Transforming Raw Data to Actionable Insights. Asian Journal of Economics Business and Accounting, 23(22), 441–459. https://doi.org/10.9734/ajeba/2023/v23i221164

Ourzik, V. Y. (2023). Big Data and Performance: The Mediating Effect of Customer Agility. European Conference on Knowledge Management, 24(2), 1719–1723. https://doi.org/10.34190/eckm.24.2.1483

Raguseo, E., & Vitari, C. (2018). Investments in Big Data Analytics and Firm Performance: An Empirical Investigation of Direct and Mediating Effects. International Journal of Production Research, 56(15), 5206–5221. https://doi.org/10.1080/00207543.2018.1427900

Saura, J. R., Palos-Sánchez, P. R., & Suárez, L. M. C. (2017). Understanding the Digital Marketing Environment With KPIs and Web Analytics. Future Internet, 9(4), 76. https://doi.org/10.3390/fi9040076

Wamba, S. F., Akter, S., & Bourmont, M. d. (2018). Quality Dominant Logic in Big Data Analytics and Firm Performance. Business Process Management Journal, 25(3), 512–532. https://doi.org/10.1108/bpmj-08-2017-0218

Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J., Dubey, R., & Childe, S. J. (2017). Big Data Analytics and Firm Performance: Effects of Dynamic Capabilities. Journal of Business Research, 70, 356–365. https://doi.org/10.1016/j.jbusres.2016.08.009

Yulita, K., & Fanani, Z. (2021). The Effect of Innovation Strategy in the Influence of Managerial Ability on Firm Performance. Jurnal Reviu Akuntansi Dan Keuangan, 11(3), 525–536. https://doi.org/10.22219/jrak.v11i3.14956

Zhang, Z., Shang, Y., Cheng, L., & Hu, A. (2022). Big Data Capability and Sustainable Competitive Advantage: The Mediating Role of Ambidextrous Innovation Strategy. Sustainability, 14(14), 8249. https://doi.org/10.3390/su14148249

Zhi, C., Huang, S., & Cheng, Z. -Y. (2024). Navigating Economic Uncertainties: The Role of Technological Innovations in Enhancing Supply Chain Resilience. Advances in Economics Management and Political Sciences, 112(1), 126–131. https://doi.org/10.54254/2754-1169/112/20242290