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Designing an Online Marketing Model for International Maritime Logistics Services with a Focus on the B2B (Business-to-Business) Approach: Identifying Barriers to Digital Adoption and Developing Strategies to Overcome Challenges in the Maritime Transport Industry

Kamran Hosseinzadeh Bakhtouri[1], Mehdi Bagheri [2]*, Soheila Jokar[3]

1. Ph.D. student in Business Management-Marketing Management, Qe.C., Islamic Azad University, Qeshm, Iran
2. Department of Educational Governance and Human Resources, BA.C., Islamic Azad University, Bandar Abbas, Iran
3. Deputy Director of Education and Skills, Qe.C., Islamic Azad University, Qeshm, Iran

*Correspondence: e-mail: M.bagheri@iau.ac.ir

Abstract

This study aims to design an online marketing model for international maritime logistics services based on a business-to-business (B2B) approach, focusing on identifying digital adoption barriers and proposing strategic solutions to enhance marketing performance. The study employed a descriptive–analytical mixed-method design integrating both quantitative and qualitative approaches. The research population included marketing managers, digital transformation specialists, and B2B clients from international maritime logistics companies. Data collection was carried out using standardized questionnaires and semi-structured interviews. The quantitative data were analyzed through SPSS using descriptive statistics, correlation tests, and multiple regression analysis to determine the predictive relationships between digital readiness, organizational capability, technological barriers, management commitment, and online marketing performance. The qualitative data, collected through interviews with industry experts, were analyzed using NVivo software and thematic coding to identify key patterns and themes related to digital transformation, organizational behavior, and strategic innovation within maritime marketing contexts. The regression results revealed that digital readiness ($\beta = 0.364$, $p < 0.001$), organizational capability ($\beta = 0.286$, $p < 0.01$), customer trust ($\beta = 0.195$, $p < 0.01$), and management commitment ($\beta = 0.244$, $p < 0.01$) significantly and positively predicted online marketing performance, while technological barriers had a negative effect ($\beta = -0.221$, $p < 0.01$). The overall model explained 50.8% of the variance in marketing performance ($R^2 = 0.508$). Qualitative results identified six central themes: technological barriers, organizational barriers, customer challenges, economic and regulatory constraints, strategic enablers, and innovation opportunities. Effective online marketing in maritime logistics depends on strengthening digital readiness, organizational capability, leadership commitment, and customer trust while mitigating technological and structural barriers. The proposed model offers a strategic framework for achieving digital transformation and sustainable competitiveness in B2B maritime marketing.

Keywords: B2B marketing; digital adoption; maritime logistics; online marketing model; artificial intelligence; organizational capability; digital transformation.

1. Introduction

In the era of digital transformation, the global logistics and maritime transport industries have witnessed profound structural and strategic changes in the way business-to-business (B2B) relationships are established, managed, and optimized. The rapid proliferation of digital technologies, artificial intelligence (AI), and big data analytics has enabled companies to shift from traditional marketing models toward data-driven and customer-centric strategies. This paradigm shift has not only altered how services are promoted and delivered but has also redefined value creation across B2B ecosystems (Dao et al., 2025; Rodriguez & Peterson, 2024). Within the maritime logistics sector, online marketing is emerging as a critical mechanism for improving operational efficiency, fostering customer engagement, and ensuring competitiveness in an increasingly digitalized global economy. However, despite its potential, the adoption of digital marketing strategies in this industry remains hindered by technological, organizational, and cultural barriers that demand systematic investigation and strategic intervention (Andersson et al., 2024; Salonen et al., 2024).

Digitalization in the B2B context is far more complex than in business-to-consumer (B2C) settings because it involves intricate decision-making processes, long-term contractual relationships, and high-value service transactions (Andersson et al., 2024). In maritime logistics, these complexities are amplified by the global scale of operations, regulatory constraints, and dependence on legacy systems. Researchers have highlighted that B2B marketing in service-oriented industries increasingly depends on digital channels such as social media, AI-based platforms, and online content management systems that shape customer experiences throughout their purchasing journeys (Salonen et al., 2024; Wu et al., 2024). The integration of these technologies enhances visibility, facilitates personalized communication, and strengthens relationship management—core dimensions of successful online marketing models. Nonetheless, firms within the maritime sector often lag behind due to fragmented digital infrastructures and limited digital competencies among marketing professionals (Fereira et al., 2024; Rodriguez & Peterson, 2024).

The literature emphasizes the growing importance of online B2B marketing as a vehicle for value co-creation and strategic differentiation (Anton, 2024; Rendy et al., 2023). The service-dominant logic (SDL) perspective underscores that marketing is not merely a transactional process but an ongoing collaborative effort between firms and their clients to co-create value through interactive digital platforms. In maritime logistics, this translates into stronger partnerships, more transparent communication, and enhanced service innovation. Scholars have demonstrated that digital marketing capabilities can strengthen relationship marketing by integrating customer insights, predictive analytics, and automation tools to foster long-term loyalty and trust (Dao et al., 2025; Karami Pour, 2023). Such technological integration is particularly significant in a sector where reliability, transparency, and timeliness are paramount for customer retention.

Artificial intelligence is transforming how B2B marketers understand customer behavior and predict demand. The use of AI-driven systems in customer relationship management (CRM) and marketing analytics allows firms to identify patterns, forecast client needs, and deliver customized digital experiences (Chatterjee et al., 2023; Mikalef et al., 2023). This capacity is particularly critical for maritime logistics companies managing vast datasets on shipping routes, cargo movements, and client portfolios. AI tools, when embedded within digital marketing ecosystems, facilitate operational optimization and more targeted promotional campaigns (Cheragh Sahr et al., 2024; Muhammad Sabbir et al., 2023). Studies also demonstrate that integrating AI into B2B marketing enhances not only operational performance but also the strategic alignment of marketing activities with business goals, leading to improved customer loyalty and sustainable competitive advantage (Rahman et al., 2023; Rodriguez & Peterson, 2024).

However, technological adoption in B2B industries—especially those with legacy infrastructures like maritime logistics—encounters considerable barriers. Challenges include high implementation costs, data privacy concerns, cybersecurity risks, and limited interconnectivity among global shipping systems (Fereira et al., 2024; Hadid et al., 2024). Organizational culture also plays a crucial role in determining the success of digital transitions. Resistance to change, insufficient digital literacy, and lack of leadership commitment frequently obstruct the integration of new technologies (Andersson et al., 2024; Brown et al., 2024). In addition, differences in digital maturity across firms lead to disparities in online marketing performance and

customer engagement effectiveness (Amawate, 2024; Ameen et al., 2024). Therefore, understanding the interplay between digital readiness, organizational capability, and marketing outcomes is essential to designing practical models for online marketing in maritime logistics.

Recent research underscores that human–machine collaboration will be a decisive factor in the next generation of B2B marketing (Ameen et al., 2024). AI technologies can augment managerial decision-making, optimize resource allocation, and improve service recovery processes. Yet, achieving this synergy requires firms to rethink their marketing structures, upskill employees, and redesign workflows to accommodate human–AI collaboration. This transformation represents not merely a technological evolution but a strategic and cultural one. In maritime services, such collaboration can enhance digital engagement with B2B clients, streamline logistics communication, and facilitate real-time problem-solving (Bashkouh Ajirloo & Mohammadkhani, 2023; Mikalef et al., 2023). Nevertheless, this progress demands organizational alignment between marketing, IT, and operations—a challenge that many firms in the shipping industry continue to face.

The role of digital content marketing has also gained prominence in influencing customer engagement throughout the B2B journey (Salonen et al., 2024). Timely and relevant content distributed via social media channels can significantly affect customers' perceptions, trust, and purchasing intentions. In the context of maritime logistics, effective content strategies can communicate reliability, showcase service innovations, and reinforce brand credibility. Moreover, the emergence of online B2B communities and digital platforms fosters trust-based interactions and collective learning among firms (Sethi et al., 2024). Community trust has been identified as a key antecedent of brand loyalty and repeat collaboration in B2B environments, where long-term relationships are vital for sustaining business continuity.

At the same time, researchers have observed that digitalization introduces ethical and sustainability concerns that must be integrated into modern B2B marketing models. The internal marketing perspective suggests that sustainable digital transformation begins within organizations through employee empowerment, transparent communication, and responsible data use (Brown et al., 2024; Sönnichsen, 2023). Sustainability-oriented internal marketing practices can help align digital marketing strategies with broader corporate social responsibility (CSR) goals. For maritime companies operating across international borders, this alignment ensures not only compliance with environmental standards but also the strengthening of stakeholder trust in digital environments.

Strategic orientation and growth-focused mindsets are equally essential for B2B firms operating in competitive markets. Firms that adopt proactive digital strategies, invest in AI-driven analytics, and embrace agile decision-making frameworks outperform those relying solely on traditional marketing models (Fereira et al., 2024). These organizations view digital transformation not as an operational necessity but as a source of innovation and long-term growth. However, in the maritime logistics sector, many firms remain reactive rather than proactive in digital adoption, focusing primarily on maintaining existing systems rather than exploring new business models (Amawate, 2024; Andersson et al., 2024). This gap emphasizes the need for an integrated online marketing framework that combines technological readiness, organizational learning, and relationship-driven strategies to achieve sustained performance improvements.

Another dimension highlighted in recent B2B research is the integration of social media into relationship marketing frameworks. Social platforms enable maritime logistics firms to interact directly with B2B clients, share real-time updates, and build relational capital through transparent communication (Dao et al., 2025; Kikumori & Ishii, 2023). Social media marketing facilitates both information exchange and emotional engagement, which are essential for building loyalty in complex service networks. When combined with AI-powered analytics, these platforms can help identify client preferences, predict churn, and enhance word-of-mouth (WOM) effects across digital ecosystems (Kikumori & Ishii, 2023; Rendy et al., 2023). Thus, social media serves not only as a communication tool but also as a strategic enabler of customer relationship management (CRM) effectiveness and business growth.

Nevertheless, the literature also identifies significant variations in digital adoption rates across industries and geographic regions. While developed markets tend to integrate AI and automation at a faster pace, emerging economies often face structural limitations, such as inadequate infrastructure, regulatory uncertainty, and resource constraints (Fereira et al., 2024; Karami Pour, 2023). Maritime logistics, being a global yet infrastructure-dependent industry, reflects these disparities vividly. Companies in emerging regions may struggle with inconsistent digital standards, cybersecurity vulnerabilities, and insufficient

interoperability between port systems and online marketing platforms (Hadid et al., 2024). Addressing these discrepancies requires localized strategies that blend global technological innovations with regional adaptation and policy support.

Furthermore, the service-dominant logic reinforces the need for customer co-creation as a foundation for digital B2B marketing (Anton, 2024; Rendy et al., 2023). Maritime logistics firms must recognize customers not as passive recipients of services but as active participants in value generation. Digital platforms can facilitate such collaboration through integrated dashboards, tracking systems, and communication interfaces that allow clients to customize services, monitor shipments, and provide real-time feedback. This mutual interaction enhances trust and contributes to long-term partnership sustainability (Rahman et al., 2023; Sethi et al., 2024). Moreover, AI-powered data analytics and customer segmentation models, such as those using RFM and graph-based techniques, can refine targeting strategies and personalize service offerings (Hadid et al., 2024). The fusion of data science and relationship marketing thereby opens new frontiers for competitive differentiation in maritime B2B marketing.

The cumulative evidence from these studies underscores that the digitalization of B2B marketing is not a uniform or linear process but an adaptive journey shaped by multiple contextual factors—technological infrastructure, organizational culture, leadership vision, and customer engagement. Scholars agree that successful digital transformation requires the integration of marketing, technological, and strategic orientations into a cohesive organizational framework (Andersson et al., 2024; Mikalef et al., 2023). For maritime logistics firms, this integration must be strategically aligned with the sector's operational realities and global market pressures. The convergence of AI capabilities, human expertise, and sustainable digital practices forms the cornerstone of a resilient online marketing ecosystem (Ameen et al., 2024; Brown et al., 2024; Sönnichsen, 2023).

Therefore, the aim of this study is to design an online marketing model for international maritime logistics services within a B2B framework, focusing on identifying barriers to digital adoption and developing strategic approaches to overcome these challenges.

2. Methods and Materials

This study adopts a descriptive–analytical design aimed at exploring the current state of online marketing in international maritime logistics services and developing a conceptual model to enhance strategic approaches in this domain. The research integrates both quantitative and qualitative methodologies in a mixed-method framework, enabling a comprehensive analysis of the phenomenon. The quantitative phase focuses on measuring key variables related to online marketing performance, digital adoption, and perceived challenges, while the qualitative phase seeks to capture in-depth insights from industry professionals regarding barriers and strategic opportunities for digital transformation in maritime marketing.

The target population of the study comprises international maritime logistics companies that provide their services through digital or online platforms. These include large-scale shipping corporations, third-party logistics providers (3PLs), and companies that support port operations and maritime process management. Two main participant groups are considered: first, marketing managers and specialists working in maritime shipping companies who possess direct experience with online marketing practices; and second, B2B clients who utilize online maritime transport services for import, export, or global logistics operations.

Sampling follows a purposive, non-probability approach, ensuring the inclusion of participants with deep technical knowledge and relevant professional experience in digital maritime marketing. This method allows the researcher to select information-rich cases that provide detailed insights into the research problem. Senior managers, marketing directors, and IT experts are specifically targeted, as their perspectives are essential for understanding both strategic and technological challenges in digital adoption. Sampling continues until data saturation is achieved—that is, until no new or relevant information emerges from interviews or questionnaires, indicating that the collected data are sufficiently comprehensive to address the research objectives.

The study employs two primary instruments for data collection: standardized questionnaires and semi-structured interviews. The questionnaire is designed to gather quantitative data from marketing managers, experts, and B2B clients, providing a structured overview of how online marketing tools and digital technologies are currently implemented within the maritime logistics sector. It consists of multiple-choice and Likert-scale items that measure dimensions such as the effectiveness of

digital marketing strategies, perceived barriers to digital adoption, organizational readiness for technological change, and overall satisfaction with online marketing performance. The questions are developed based on a review of existing literature on digital marketing, technology acceptance models, and innovation diffusion theories, ensuring both content validity and relevance to the maritime context.

To complement the quantitative findings, semi-structured interviews are conducted with senior executives and key stakeholders from leading maritime logistics companies. These interviews are designed to elicit qualitative insights and to explore complex issues that cannot be fully captured through questionnaires alone. The interviews focus on topics such as the organizational culture surrounding digital transformation, managerial attitudes toward online marketing investments, perceived customer expectations in B2B contexts, and strategic responses to emerging technological challenges. Each interview follows a flexible guide, allowing respondents to elaborate on their experiences and opinions freely. Interviews are conducted face-to-face or virtually, recorded with consent, and later transcribed for detailed thematic analysis.

All data collection procedures adhere to ethical standards, including voluntary participation, informed consent, and confidentiality of responses. Participants are informed about the purpose of the study, the approximate duration of their participation, and their right to withdraw at any stage without consequence. Prior to full-scale data collection, the questionnaire and interview guide are pilot-tested with a small group of experts to assess clarity, relevance, and reliability, after which necessary revisions are made.

The analysis process is conducted in two complementary phases corresponding to the mixed-method design. In the quantitative phase, data obtained from the questionnaires are entered and analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics such as means, standard deviations, and frequency distributions are used to summarize the demographic and organizational characteristics of participants, as well as their responses regarding the state of online marketing in maritime logistics. Inferential statistical analyses, including correlation tests and multiple regression modeling, are then applied to examine the relationships between key variables—such as the use of digital technologies, perceived organizational readiness, digital marketing performance, and success in B2B engagement. These analyses allow for the identification of significant predictors and the quantification of their effects, supporting the empirical development of the proposed model.

In the qualitative phase, data derived from semi-structured interviews are processed and analyzed using NVivo software. Thematic analysis is conducted through an iterative process of coding, categorization, and theme extraction. Initially, open coding is used to identify meaningful units of text, followed by axial coding to establish connections between categories such as digital barriers, enablers of online marketing success, and strategic adaptation mechanisms. Finally, selective coding is used to integrate these themes into a cohesive conceptual framework. The combination of deductive and inductive reasoning ensures that both existing theoretical constructs and emergent insights are adequately reflected in the analysis.

Triangulation is employed to enhance the validity and reliability of the findings by cross-verifying data obtained from the quantitative and qualitative phases. The integration of both datasets allows for a deeper understanding of how digital adoption barriers and strategic drivers interact within the maritime marketing ecosystem. The final step involves synthesizing the results to construct a conceptual model that illustrates the pathways through which digital transformation can strengthen online marketing capabilities and competitiveness in the international maritime logistics industry.

3. Findings and Results

The purpose of this study was to design an online marketing model for international maritime logistics services within a B2B framework by identifying the main barriers to digital adoption and developing strategies to overcome these challenges. Data were collected from marketing managers, senior executives, IT specialists, and B2B clients of leading international shipping and logistics companies. The analysis included both quantitative and qualitative phases. Quantitative results focused on relationships between digital readiness, marketing performance, and perceived organizational capability, while qualitative findings provided in-depth insights into underlying barriers, opportunities, and strategic recommendations for implementing effective digital marketing practices in the maritime sector.

The qualitative phase, conducted through semi-structured interviews with 20 experts and managers from international maritime logistics companies, yielded rich insights into the challenges and opportunities of digital transformation in maritime

marketing. Thematic analysis through NVivo identified several key categories and subthemes that explain the current dynamics of digital adoption and online marketing practices in the industry.

Table 1. Qualitative Findings

Main Category	Subthemes Identified	Description and Illustrative Insights
Technological Barriers	Legacy IT infrastructure; cybersecurity risks; system incompatibility	Outdated systems and fragmented digital platforms hinder smooth online marketing integration. Many companies expressed concern about data security and lack of system interoperability between global shipping partners.
Organizational Barriers	Resistance to change; lack of digital literacy; low strategic alignment	Managers highlighted that traditional hierarchical structures and limited training in digital tools reduce organizational readiness for marketing digitalization.
Customer-Related Challenges	Low awareness of digital platforms; preference for conventional contracts; trust issues	Many B2B clients still prefer face-to-face negotiations and paper-based transactions due to perceived risks and uncertainty in online maritime transactions.
Economic and Regulatory Constraints	High implementation costs; lack of policy incentives; unclear digital standards	Participants noted that the absence of uniform regulations and the high cost of digital transition discourage companies from fully embracing online marketing systems.
Strategic Enablers	Management commitment; partnerships with digital firms; customer education	Successful cases revealed that leadership engagement, collaboration with IT providers, and digital skill-building programs among clients significantly enhance digital adoption.
Innovation Opportunities	AI-driven customer analytics; blockchain transparency; online reputation management	Participants emphasized emerging opportunities in artificial intelligence and blockchain technologies to improve data tracking, customer personalization, and trust in online maritime services.

The qualitative findings indicate that the maritime logistics industry faces a dual challenge: structural barriers rooted in traditional business models and growing external pressures to digitize in response to global competition. Most participants acknowledged that while digitalization offers clear efficiency and market visibility benefits, its adoption requires overcoming deeply embedded cultural and technical resistance. Thematic analysis revealed that leadership vision, cross-sector collaboration, and customer digital education are the most influential factors for achieving successful transformation. In particular, firms that integrated digital analytics and customer management platforms reported improved B2B communication, higher engagement, and measurable increases in operational agility.

The quantitative phase of the study was conducted using standardized questionnaires distributed among 180 respondents, including marketing managers, digital transformation specialists, and B2B clients from international maritime logistics companies. The purpose of this phase was to assess the relationships between digital readiness, online marketing performance, organizational capability, and perceived barriers to digital adoption. The data were analyzed using SPSS through descriptive statistics, correlation tests, and multiple regression modeling. The findings provide empirical support for the qualitative insights and form the quantitative foundation for the proposed online marketing model.

Table 2. Descriptive Statistics of Main Variables (N = 180)

Variable	Mean (M)	Standard Deviation (SD)	Minimum	Maximum
Digital Readiness	3.87	0.64	2.10	4.95
Organizational Capability	3.74	0.71	1.98	4.82
Technological Barriers	2.62	0.83	1.30	4.40
Marketing Performance	3.91	0.59	2.45	4.98
Perceived Digital Adoption	3.65	0.68	1.89	4.89
Customer Trust Level	3.58	0.73	1.74	4.96
Management Commitment	4.02	0.61	2.81	5.00

The descriptive statistics show that respondents generally perceive their organizations as moderately ready for digital transformation, with relatively high mean scores for digital readiness (M = 3.87) and management commitment (M = 4.02). However, technological barriers remain a significant challenge, as indicated by the lower mean score (M = 2.62). The relatively high scores for marketing performance (M = 3.91) and perceived digital adoption (M = 3.65) suggest that many maritime logistics companies have initiated digital strategies but still face limitations in achieving full-scale implementation. These results highlight a positive organizational attitude toward online marketing transformation, albeit constrained by infrastructural and technical shortcomings.

Table 3. Multiple Regression Analysis: Predictors of Online Marketing Performance

Predictor Variable	Unstandardized Coefficient (B)	Standard Error (SE)	Standardized Beta (β)	t-value	Sig. (p)
Constant	0.984	0.212	—	4.64	0.000
Digital Readiness	0.318	0.073	0.364	4.36	0.000
Organizational Capability	0.241	0.069	0.286	3.50	0.001
Technological Barriers	-0.192	0.061	-0.221	-3.15	0.002
Customer Trust Level	0.158	0.058	0.195	2.72	0.007
Management Commitment	0.207	0.067	0.244	3.09	0.002
R	—	—	0.713	—	—
R^2	—	—	0.508	—	—
Adjusted R^2	—	—	0.494	—	—
F (5,174)	—	—	36.71	—	0.000

The regression results indicate that digital readiness, organizational capability, customer trust, and management commitment significantly and positively predict online marketing performance, whereas technological barriers exert a significant negative influence. The overall model explains approximately 50.8% of the variance in online marketing performance ($R^2 = 0.508$), confirming its strong explanatory power. Among the predictors, digital readiness ($\beta = 0.364$, $p < 0.001$) and management commitment ($\beta = 0.244$, $p < 0.01$) are the most influential variables, suggesting that organizations that invest in digital preparedness and have committed leadership achieve superior marketing outcomes. Conversely, technological barriers ($\beta = -0.221$, $p < 0.01$) significantly hinder progress toward effective online marketing. These findings underscore the importance of organizational capability and managerial engagement in driving digital adoption success within the maritime logistics industry.

4. Discussion and Conclusion

The present study aimed to design an online marketing model for international maritime logistics services based on a B2B (business-to-business) approach, focusing on the identification of barriers to digital adoption and the development of strategic solutions for overcoming these challenges. The findings revealed that digital readiness, organizational capability, management commitment, and customer trust significantly and positively influenced online marketing performance, whereas technological barriers negatively affected digital success in the maritime logistics sector. These results provide an integrated view of how digital transformation processes in B2B environments—particularly in maritime services—are shaped by the interplay between technological infrastructure, managerial vision, and relationship-oriented strategies.

The results from the quantitative phase indicated that higher levels of digital readiness corresponded to stronger online marketing performance. This relationship confirms that preparedness in digital tools, technological systems, and employee competencies is a central determinant of marketing efficiency in B2B contexts (Mikalef et al., 2023; Rahman et al., 2023). Maritime logistics companies that invest in developing their digital infrastructure and analytics capabilities experience enhanced customer engagement and operational transparency, leading to superior marketing outcomes. This finding aligns with prior evidence suggesting that digital maturity enables B2B organizations to improve both internal coordination and external communication through more personalized, data-driven approaches (Ameen et al., 2024; Karami Pour, 2023). Moreover, digital readiness was found to be closely tied to the ability of firms to integrate AI-based systems into marketing decision-making processes, thereby strengthening their capacity to predict market demands and optimize resource allocation (Chatterjee et al., 2023; Rodriguez & Peterson, 2024).

Another major finding was the significant role of organizational capability in enhancing online marketing effectiveness. This capability encompasses the human, structural, and technological resources that allow companies to adapt to digital environments. The result resonates with prior studies showing that a strong organizational base fosters innovation and facilitates technology-driven marketing transitions (Andersson et al., 2024; Fereira et al., 2024). In the maritime logistics sector, where service complexity and regulatory restrictions often hinder rapid transformation, organizational flexibility and interdepartmental collaboration become essential. Companies with well-developed digital leadership structures and data-driven cultures are more likely to overcome inertia and align marketing objectives with technological advancements (Amawate,

2024; Brown et al., 2024). The alignment between digital marketing initiatives and overall business strategies creates synergy that amplifies marketing performance and supports long-term customer satisfaction (Anton, 2024).

Technological barriers, however, emerged as a significant negative predictor of marketing success. These barriers include outdated IT infrastructure, system incompatibility, cybersecurity risks, and limited integration between maritime platforms and digital marketing systems. Similar obstacles have been highlighted in previous research on B2B marketing in traditional industries, where resistance to digitalization stems from both technological and cultural constraints (Andersson et al., 2024; Hadid et al., 2024). In maritime logistics, the reliance on legacy systems and the absence of unified digital standards across international shipping networks exacerbate the problem. The current findings confirm that without interoperable systems and secure data environments, digital marketing remains fragmented and inefficient. The study by (Sönnichsen, 2023) further supports this notion, emphasizing that digital integration requires both ethical governance and technological modernization to ensure transparency and accountability.

Management commitment also demonstrated a strong positive influence on online marketing outcomes. The involvement of senior executives and their support for digital initiatives were found to drive the adoption of new marketing technologies and foster a culture of innovation. This result aligns with (Brown et al., 2024), who highlighted that internal marketing and leadership engagement are vital for cultivating a sustainable and digitally capable organizational environment. When top management prioritizes digital transformation, it provides legitimacy and motivation for employees to adopt new tools and processes. Furthermore, committed leadership helps secure the financial and human resources necessary for technology implementation, thereby reducing organizational resistance to change (Amawate, 2024; Ameen et al., 2024). The maritime logistics industry, often characterized by traditional operational models, benefits substantially from visionary leadership that bridges the gap between conventional practices and digital innovation.

Customer trust was another key determinant of successful online marketing performance in this study. Trust remains a fundamental driver of B2B relationships, especially in high-stakes service industries like maritime logistics, where clients depend on reliability, data security, and operational transparency. The findings are consistent with the work of (Sethi et al., 2024), which demonstrated that community trust and transparent interactions are essential for fostering brand loyalty in online B2B environments. Similarly, (Dao et al., 2025) found that trust-based relationship marketing through social media and CRM systems enhances word-of-mouth (WOM) and customer loyalty, thereby improving long-term partnership stability. In maritime logistics, digital trust is particularly crucial, as transactions often involve large-scale financial commitments and international coordination. The findings of this study reinforce that digital communication platforms, when backed by reliable data management and responsive service, can significantly enhance customer confidence in online interactions (Kikumori & Ishii, 2023; Rendy et al., 2023).

From the qualitative findings, several themes emerged that help contextualize the quantitative results. One dominant theme was the persistence of organizational and technological barriers that limit digital transformation. Participants highlighted issues such as fragmented IT systems, lack of digital skills, and insufficient strategic integration between marketing and operations. These barriers mirror the challenges reported by (Hadid et al., 2024) and (Andersson et al., 2024), who argued that digital marketing adoption in B2B industries often falters due to poor alignment between IT capabilities and business goals. Moreover, respondents emphasized that digital transformation cannot succeed without holistic change management practices that address human factors such as resistance to innovation and lack of confidence in digital tools. The findings by (Brown et al., 2024) support this perspective, showing that internal engagement and staff empowerment are prerequisites for sustainable digital adoption.

Another key theme related to the importance of human–machine collaboration in driving online marketing performance. Interviewees reported that the integration of AI technologies not only improved operational efficiency but also enhanced decision-making accuracy and customer personalization. This aligns with (Ameen et al., 2024) and (Mikalef et al., 2023), who concluded that combining human judgment with AI analytics fosters a more adaptive and data-driven marketing ecosystem. In the maritime logistics context, AI tools facilitate real-time tracking, predictive demand analysis, and automated customer communication, thereby increasing service responsiveness and reducing transaction time. These results highlight that

digital transformation is not solely a technological endeavor but a socio-technical evolution requiring close interaction between human expertise and intelligent systems (Chatterjee et al., 2023; Cheragh Sahr et al., 2024).

Furthermore, the qualitative results underscored the need for strategic partnerships and customer education to accelerate digital adoption. Several participants suggested that collaborations with digital solution providers, as well as targeted training for clients, could enhance the perceived value of online platforms. This recommendation corresponds with findings from (Amawate, 2024), who emphasized the significance of cross-sectoral partnerships in sustaining cause-related B2B marketing programs. Similarly, (Rendy et al., 2023) demonstrated that value co-creation through collaborative digital ecosystems leads to stronger partner loyalty and improved business resilience. For maritime logistics firms, developing such networks can reduce digital resistance and facilitate shared innovation across supply chains.

Additionally, the results suggest that customer engagement through digital content plays a pivotal role in the success of online marketing. Participants agreed that consistent, high-quality, and informative digital content helps maintain visibility and trust throughout the B2B customer journey. This finding resonates with (Salonen et al., 2024), who confirmed that timely and relevant content delivery on social media platforms enhances customer engagement and brand credibility. Given the complex nature of maritime transactions, where decision-making involves multiple stakeholders, digital content marketing enables firms to communicate technical information and service updates more effectively. Moreover, the integration of data analytics into content delivery allows for better targeting and customer retention, as highlighted by (Wu et al., 2024) and (Dao et al., 2025).

The combination of quantitative and qualitative findings offers a comprehensive understanding of the dynamics shaping digital marketing in the maritime logistics industry. Together, they reveal that successful online marketing depends on synergizing digital readiness, leadership commitment, and customer trust, while simultaneously mitigating technological and organizational barriers. These findings support the argument that B2B marketing models must evolve beyond transactional efficiency to encompass relationship-building, innovation, and adaptability (Andersson et al., 2024; Anton, 2024). The study further contributes to the literature by illustrating that digital marketing in the maritime sector operates at the intersection of technology adoption and human collaboration, where cultural change is as critical as technological investment (Brown et al., 2024; Mikalef et al., 2023).

Ultimately, the proposed model emphasizes that enhancing online marketing performance in maritime logistics requires a holistic strategy that integrates digital infrastructure, employee competency, customer partnership, and leadership vision. It also demonstrates that fostering trust, innovation, and collaboration are indispensable for navigating the complexities of digital transformation in global B2B environments. By addressing these dimensions collectively, maritime firms can not only improve marketing effectiveness but also build a sustainable competitive advantage in the digital era.

Although the findings of this study provide valuable insights into online marketing in international maritime logistics, several limitations should be acknowledged. First, the study relied on a purposive sampling method, which, while suitable for targeting knowledgeable participants, limits the generalizability of results across all maritime logistics firms globally. Second, the cross-sectional design captures perceptions and relationships at a single point in time, without accounting for potential longitudinal changes as digital maturity evolves. Third, while the combination of quantitative and qualitative data enhances validity, the reliance on self-reported measures may introduce bias related to social desirability or overestimation of digital readiness. Finally, external factors such as international regulations, geopolitical instability, or economic fluctuations were not explicitly modeled, although they may significantly influence digital transformation in maritime marketing.

Future research should consider longitudinal studies to track changes in digital adoption and marketing performance over time, particularly as technologies such as AI, blockchain, and big data analytics continue to evolve. Expanding the sample to include firms across different regions and sizes would also enhance generalizability and allow for cross-country comparisons of digital maturity. Further, mixed-methods designs incorporating experimental or simulation-based analyses could help isolate causal relationships between technological interventions and marketing outcomes. Additionally, exploring the role of sustainability and ethical considerations in maritime digital marketing may provide insights into how environmental and social goals align with digital innovation in B2B contexts.

Maritime logistics companies should prioritize comprehensive digital transformation strategies that encompass both technological investment and cultural adaptation. Management teams must foster internal training and continuous learning programs to improve digital literacy among employees. Collaboration with technology providers and industry partners can

accelerate the adoption of AI-driven marketing systems and strengthen integration across global logistics networks. Companies should also implement transparent data governance frameworks to build and maintain customer trust, while tailoring digital content to the specific needs of B2B clients. Ultimately, achieving excellence in online marketing requires aligning digital readiness, leadership commitment, and customer engagement under a unified strategic vision that supports innovation and sustainable growth.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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