INKUBIS: Jurnal Ekonomi dan Bisnis
Volume 8, Issue 2, 1347-1356
e_ISSN: 2775-3913
https://inkubis.polteksci.ac.id/index.php/ink/index
DOI: doi.org/10.59261/inkubis.v8i2.325

Digital Marketing Risk Assessment Based on ISO 31000: Empirical Evidence from the Indonesian OTA Sector

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Article Info:

***Article history*:**
Received: June 26, 2026
Revised: July 02, 2026
Accepted: July 07, 2026

***Keywords*:**
Online Marketing; Risk Management; Strategy

Abstract

Background: Online marketing campaigns are marketing strategies that utilize digital technology to promote products or services through the internet.
Objective: The goal of these campaigns is to increase brand awareness, engagement, and sales in a more effective and efficient manner.
Methods: Online marketing campaigns involve various methods, including search engine advertising, social media marketing, email marketing, and content marketing.
Results: In Indonesia, the widespread adoption of internet technology and the rapid development of digital platforms provide significant opportunities for companies to reach broader and more diverse markets. Online marketing campaigns enable companies to gain deeper insights into target markets, measure return on investment (ROI) more accurately, and strengthen their competitive advantage in an increasingly competitive environment. A structured approach and appropriate strategies in online marketing campaigns assist companies in optimizing the utilization of digital technologies to achieve their marketing objectives.
Conclusions: Thus, online marketing campaigns have become essential tools for companies in responding to technological advancements and continuously evolving consumer needs.

To cite this article: Gunawan, I., Sinaga, R. S., & Harrison, A. (2026). Digital marketing risk assessment based on ISO 31000: Empirical evidence from the Indonesian OTA sector. *INKUBIS: Jurnal Ekonomi dan Bisnis*, 8(2), xx–xx. https://doi.org/10.59261/inkubis.v8i2.325

INTRODUCTION

The rapid expansion of digital technology and internet penetration has transformed the business landscape in Indonesia, forcing a paradigm shift from traditional marketing to digital marketing campaigns (Dewi & Lusikooy, 2023; Jannah et al., 2025). Companies leverage online platforms, search engine optimization (SEO), social media, and email marketing to enhance brand awareness, consumer engagement, and sales efficiency (Celestin et al., 2024). This digital transformation enables marketers to collect precise market data, gain deeper insights into consumer demographics, and establish responsive relationships with target audiences (Adeniran et al., 2024; Nwabekee et al., 2024). In highly competitive markets, the execution of well-structured digital campaigns directly determines an organization's competitive advantage and return on investment (ROI) (Islam & Afroz, 2025). Consequently, reliance on digital infrastructure has made online marketing an indispensable strategic tool for modern corporate sustainability and competitiveness (Hokmabadi et al., 2024; Karpii & Mykhailyk, 2025).

However, this intensive reliance on digital networks introduces substantial uncertainties that threaten organizational objectives. According to the ISO 31000 framework, risk is defined as the effect of uncertainty on objectives. In this study, the ISO 31000 framework is operationalized through a sequential five-phase analytical procedure: (1) context establishment—mapping the external technological environment, consumer behavioral shifts, and regulatory landscape; (2)

risk identification—extracting and classifying four operational threat categories from verified empirical data; (3) risk analysis—measuring each risk using a standardized 5 × 5 probability-impact matrix; (4) risk evaluation—comparing risk scores against corporate risk appetite thresholds; and (5) risk treatment—formulating concrete mitigation protocols for each identified risk. In the context of digital marketing, these uncertainties manifest as operational, technological, cybersecurity, and reputational risks (Bucovetchi & Vevera, 2024).

Empirical evidence reveals that organizations frequently encounter critical vulnerabilities, including erroneous content uploads, severe cybersecurity breaches, external misuse of corporate identities, and inaccurate audience targeting (Liu & Babar, 2026). The immediate impacts of these unmanaged risks can be severe, ranging from localized consumer protests and data privacy lawsuits to significant declines in sales performance and systemic erosion of brand reputation. Therefore, evaluating risk mitigation strategies within digital campaigns is not merely an operational necessity but also a critical requirement for institutional resilience (Bucovetchi & Vevera, 2024).

The urgency of this issue is illustrated by the operational challenges faced by Traveloka, a leading Online Travel Agency (OTA) in Indonesia. As an established e-commerce unicorn, Traveloka expanded its digital marketing ecosystem by integrating flight reservations, hotel bookings, and lifestyle services into a single mobile application. While this extensive platform diversification maximized market reach, it simultaneously increased the company's risk exposure. Insufficient risk management within its digital ecosystem contributed to operational failures, including unilateral ticket cancellations caused by system errors and vulnerabilities involving consumer data protection. These failures triggered public backlash, regulatory scrutiny related to data protection compliance, and contractual disputes. The Traveloka phenomenon serves as an important empirical reminder that aggressive digital marketing campaigns without robust risk governance mechanisms may compromise long-term corporate sustainability (Akude et al., 2026).

Despite the clear financial and reputational threats associated with digital campaigns, a significant research gap remains in contemporary academic literature. Existing marketing studies predominantly focus on optimizing consumer reach, conversion rates, algorithm-driven engagement, and the adoption of advanced marketing technologies (Mangalasserri et al., 2025). Conversely, established risk management literature frequently examines corporate governance, financial risk mitigation, and supply chain disruptions using standardized frameworks such as ISO 31000 or COSO. A noticeable disconnect exists because risk assessment frameworks are rarely integrated directly into the evaluation of digital marketing operations (Ahmad Al Serhan & Zhang, 2025).

Specifically, Mangalasserri (2025) examined advanced consumer engagement strategies without addressing operational risk governance; Bucovetchi (2024) discussed organizational resilience in digital marketing but did not operationalize ISO 31000 for campaign-level risk assessment; Liu (2026) systematically reviewed corporate cybersecurity risks without linking their findings to digital marketing operational risk matrices. This three-dimensional literature disconnect (between marketing optimization, risk management frameworks, and digital campaign operations) represents the central research gap addressed by this study through a structured, non-bibliometric risk assessment model. Many digital marketing analyses treat operational failures as isolated technical issues rather than systemic risks requiring structured corporate mitigation policies. This study addresses this gap by integrating enterprise risk management principles with digital marketing execution within the Indonesian e-commerce sector.

This study aims to evaluate digital marketing risk mitigation strategies by mapping operational vulnerabilities through a structured probability and impact matrix based on SNI ISO 31000. This research provides a multidisciplinary contribution by bridging digital marketing management, cybersecurity practices, and legal compliance frameworks. By utilizing verified empirical data from digital marketing failures in Indonesia, this paper develops a systematic, non-bibliometric risk assessment model. The findings provide practical insights for digital marketers and risk practitioners to proactively protect brand reputation, safeguard consumer data privacy, and build strategic resilience against adverse digital impacts.

METHOD

This study employed a qualitative evaluative case study design (Yin, 2018) integrated with the structured risk assessment process of SNI ISO 31000 to evaluate digital marketing risk profiles within the Indonesian e-commerce sector. This design was highly appropriate because it enabled a systematic investigation of operational vulnerabilities and risk mitigation processes that could not be fully captured through statistical measurements alone. The case study design was appropriate because it facilitated an in-depth investigation of a single organizational unit (Traveloka) within its real-world operational context, while the ISO 31000 framework provided a structured analytical sequence (context establishment, risk identification, risk analysis, risk evaluation, and risk treatment) that ensured methodological rigor and replicability.

The object of this research focused specifically on the digital marketing operations of Traveloka, a leading Online Travel Agency (OTA) unicorn in Indonesia that integrates multi-platform e-commerce services. This context provided a rich and verified empirical baseline because Traveloka's extensive platform diversification represented a high-exposure risk environment within a dynamic emerging market. This study did not involve human or animal participants and therefore did not require formal ethical approval from an institutional review board. However, all corporate operational data, digital history records, and secondary case examples were collected, verified, and analyzed in strict accordance with institutional ethical standards and public domain data governance policies.

The research data were compiled from public corporate records, verified media monitoring reports, and documented case studies of digital marketing anomalies in Indonesia that had been published and validated by previous research. The data collection procedure covered four interconnected digital marketing scopes, including e-commerce transaction systems, major social media channels (Facebook, Instagram, and Twitter), search engine optimization (SEO) web parameters, and paid advertising platforms. This multi-platform data mapping aligned directly with the interdisciplinary orientation of this journal by bridging the intersection of corporate risk management, digital information technology, and consumer protection laws.

The data analysis followed a systematic step-by-step procedure derived from the SNI ISO 31000 risk management framework. First, the study established the external and internal context by analyzing technological developments, evolving consumer behavior patterns, and data privacy regulations in Indonesia. Second, the risk identification stage extracted specific operational threats from the collected data and classified them into content errors, cybersecurity breaches, brand name misuse, and platform inaccuracies. Third, the risk analysis phase measured each identified risk using a standardized five-point probability and impact matrix. The probability criteria measured occurrence frequency from very rare to very frequent, while the impact criteria quantified sales degradation from insignificant to catastrophic. Fourth, the risk evaluation stage compared the matrix scores against corporate risk appetite boundaries to determine risk severity levels. Finally, the process formulated concrete and structured risk treatment and mitigation plans. This standardized analytical sequence ensured that other researchers could accurately replicate the evaluation procedure under comparable operational conditions.

RESULTS AND DISCUSSION

Result

Risks Faced in On-Line Marketing and Their Mitigation

The application of the SNI ISO 31000 risk management process to Traveloka's digital marketing operations identified four distinct risk categories, each with empirically derived probability and impact scores that were subsequently mapped onto a risk heat matrix for severity classification. Comprehensive digital marketing risk management requires a structured delineation of both the operational scope and the macroenvironmental context (Kuzmynchuk et al., 2025). The operational scope of digital marketing in this study encompasses five core pillars: e-commerce platforms, social media networks, search engine optimization (SEO), paid advertising, and strategic content marketing.

E-commerce infrastructure includes online storefronts, digital marketplaces, integrated payment gateways, and automated order management systems (Begum et al., 2025; Sikder & Rolfe, 2023). To maximize consumer engagement, marketing campaigns utilize dominant social

media channels, specifically Facebook, Instagram, and Twitter. These channels are closely integrated with SEO strategies to optimize website visibility and ensure that potential customers can easily locate corporate digital assets. Furthermore, paid advertising through targeted platforms such as Google Ads, Facebook Ads, and Instagram Ads is deployed alongside specialized content marketing strategies designed to deliver high-value and relevant information to the target audience.

Following the first phase of the ISO 31000 process, the analysis maps the external and internal factors that directly influence the risk profile of Traveloka's digital marketing operations. This multi-platform operational scope functions within a highly dynamic Indonesian digital environment driven by rapid technological advancements, changing consumer behavior, and increasingly stringent regulatory frameworks. The continuous evolution of digital and internet infrastructures significantly reduces barriers to market access, thereby expanding the reach of online marketing initiatives (Katsikeas et al., 2020). Concurrently, modern consumers increasingly rely on digital channels to obtain information and purchase products online, although their preferences and behavioral trends continue to change rapidly. Marketers must adapt to these behavioral shifts while maintaining compliance with domestic regulations and institutional policies, particularly those related to data privacy and information security. These evolving external conditions require a proactive risk assessment process to identify potential threats before they adversely affect organizational objectives.

The initial phase of risk assessment involves comprehensive risk identification to balance the industrial challenges and technological opportunities associated with modern digitalization. Rapid digital transformation provides opportunities for extensive corporate growth and improved societal welfare; however, it also generates significant socioeconomic concerns related to data privacy breaches and workforce displacement. Organizations must address this operational gap to ensure that technological adoption strengthens consumer trust rather than generates public resistance (Allam, 2022; Madaki et al., 2024).

Empirical evidence from the Bureaucracy Journal highlights significant inherent vulnerabilities within the e-commerce sector, particularly concerning financial fraud and the dissemination of inaccurate corporate information by business actors. Furthermore, alignment with contemporary marketing theory indicates that although technology is designed to support human activities, it may introduce systemic operational risks when not effectively managed. To evaluate these threats systematically, this study develops a rigorous risk assessment matrix that defines potential impacts, probability levels, and strategic mitigation plans based on established risk criteria.

Table 1
Probability Criteria

Score	Opportunities	Remarks
1	Very rare	Occurs over 5 years
2	Rare	Occurs over every 2-5 years
3	Possible	Occurs once every 1-2 years
4	Frequent	Occurs several times a year
5	Very often	Occurs every month

To measure the likelihood of operational threats systematically, the risk analysis phase establishes a structured five-level probability scale based on historical frequency and temporal occurrence. A score of 1 represents a very rare probability, indicating an event that occurs only over a period exceeding five years. A score of 2 denotes a rare occurrence, where a specific risk typically manifests once every two to five years.

Risks classified as possible receive a score of 3, representing an operational anomaly that occurs once every one to two years. Furthermore, a score of 4 defines a frequent probability level, indicating that risk events occur several times within a single year. Finally, the highest frequency level receives a score of 5, signifying a very likely probability where the operational vulnerability manifests on a monthly basis. This formalized temporal ranking provides an empirical foundation for calculating final risk exposure scores within the digital marketing risk matrix.

Table 2
Impact assessment table

Score	Description	Remarks
1	Insignificant	The effect of ≤1 percent on sales
2	Small	1-5 percent influence on sales
3	Medium	5-10 percent influence on sales
4	Large	10-15 percent influence on sales
5	Catastrophic	≥15 percent influence on sales

To establish a robust framework for Digital Marketing Risk Assessment Based on ISO 31000, the evaluation of operational threats within the Indonesian OTA sector relies on a structured five-level impact scale that directly measures financial and market consequences. This impact matrix quantifies how specific vulnerabilities affect corporate sales performance. A score of 1 indicates an insignificant impact, where the risk event causes a negligible decline of 1% or less in sales volume. A small impact receives a score of 2, representing a minor disruption that influences corporate revenue by 1% to 5%.

Operational risks that escalate to a medium level are assigned a score of 3, denoting a moderate threat that results in a 5% to 10% decline in sales. Furthermore, a large impact is classified with a score of 4, reflecting a substantial corporate vulnerability that triggers a 10% to 15% reduction in commercial performance. Finally, the most severe operational threat receives a score of 5, representing a catastrophic impact in which unmitigated digital failures cause an immediate reduction of 15% or more in overall sales. Presenting these precise parameters ensures a logical and empirical foundation for mapping strategic risk resilience across digital platforms.

Risk Assessment and Risk Mitigation Matrix

If the 4 risks that have been identified are associated with the impact on sales, they can be described as follows:

Table 3
Digital Marketing Risk Identification and Assessment Matrix

No	Risks	Causes	Impact	Scale P	Scale D	Explanation/Impact Analysis
1	Incorrectly Uploaded Content	Insufficient Quality Assurance	Decline Sales	3	3	Uploading errors can reduce customer trust and decrease engagement, which directly affects sales. However, these issues should be resolved quickly if handled properly.
2	Cybersecurity Threats	The primary cause of cybersecurity vulnerability is delayed network security updates	Decline Sales	4	5	Cybersecurity that is not adequately guaranteed may result in consumer data leakage and significantly damage the company's reputation, potentially leading to customer loss and a drastic decline in sales.
3	Misuse of the Company Name by External Parties	Incomplete Information to Consumers	Decline sales	2	2	Abuse of company invoices by external parties can lead to confusion and reduce customer trust; however, it generally has a relatively minor impact and can be mitigated through effective communication with customers.
4	Inaccurate Use of Online Platforms	Inadequate Understanding of the Target Market and Customer Segments	Decline Sales	3	4	Usage of an imprecise platform may result in the target market not being effectively reached, reducing marketing campaign effectiveness and significantly lowering sales

						performance. However, this issue should be addressed through the implementation of a more appropriate strategy.

Based on the risk identification and scoring matrix, this study highlights four critical threats affecting digital marketing outcomes within the e-commerce framework. First, false content uploads arise from inadequate quality assurance processes, triggering errors that can erode consumer trust; however, with moderate probability and impact scores of 3, companies can swiftly mitigate these risks through responsive public relations strategies and corrective content management. Second, cybersecurity threats represent the most severe vulnerability, driven by delayed network security updates and assessed with a high probability score of 4 and a catastrophic impact score of 5. These threats may result in critical data breaches, customer attrition, and sudden revenue losses. Third, invoice abuse by external parties stems from incomplete information dissemination, creating operational confusion while maintaining a low exposure level with identical probability and impact scores of 2, as companies can effectively neutralize this issue through transparent communication channels. Finally, the inaccurate utilization of online platforms occurs when marketing teams fail to understand target demographics, receiving a probability score of 3 and a major impact score of 4, which reduces investment efficiency. This risk can be systematically addressed by recalibrating data-driven marketing strategies and optimizing platform positioning.

The required risk mitigation is as follows

Table 4
Digital Marketing Risk Assessment and Mitigation Treatment Matrix

No	Risks	Causes	Impact	Scale P	Scale D	Risk Mitigation
1	Incorrectly Uploaded Content	Poor quality assurance	Decline in sales	- 3	- 3	Improve quality assurance (QA) competence by clarifying the target market effectively
2	Cybersecurity Threats	Delayed network security updates	Decline in sales	4	5	Conduct regular network security assessments to ensure system reliability and data protection
3	Misuse of the Company Name by External Parties	Incomplete information provided to consumers	Decline in sales	2	2	Provide clear information on the platform regarding the services provided and those not offered by the company
4	Inaccurate Use of Online Platforms	Incomplete information provided to consumers	Decline in sales	3	4	Maintain a clear understanding of the target market to support effective digital marketing risk management.

Digital Marketing Risk Mapping and Heat Matrix Analysis

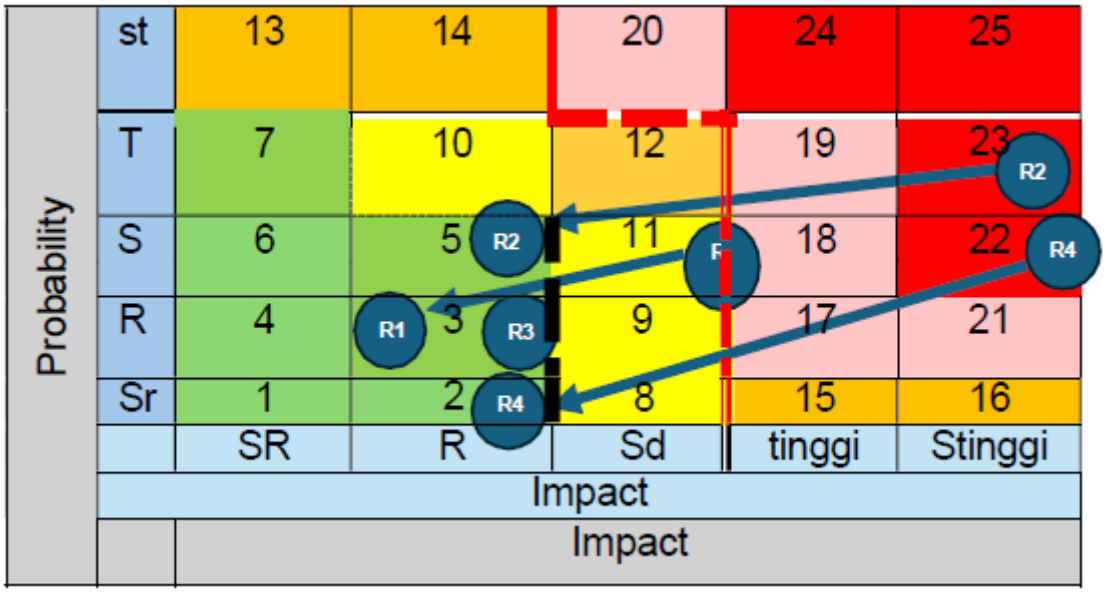

Figure 1. Digital Marketing Risk Heat Matrix and Mitigation Shift Map

A deeper empirical investigation reveals the specific operational mechanisms and real-world consequences of each identified digital marketing threat. First, erroneous content uploads can inflict immediate and severe damage on corporate reputation, as demonstrated by a recent marketing anomaly involving a commercial establishment in South Sulawesi. In this case, the owner published promotional content across social media channels and digital news outlets before obtaining the required institutional licenses. This operational oversight severely violated local cultural sensitivities, triggering widespread public protests and immediate regulatory backlash against the business. Second, cybersecurity vulnerabilities, primarily driven by hacking attempts and malware attacks, compromise both internal corporate data and sensitive consumer databases. A prominent empirical example within the Indonesian Online Travel Agency (OTA) sector is Traveloka, where system vulnerabilities exposed consumer data to external risks, highlighting how infrastructure failures can directly jeopardize corporate credibility.

Third, the improper or inaccurate utilization of digital marketing platforms can degrade brand equity and increase regulatory liabilities. For instance, sending automated promotional emails to non-targeted individuals can alienate potential users, prompting frustrated recipients to flag official corporate communications as junk or spam. This platform misalignment not only erodes overall brand reputation but also increases the risk of violating consumer privacy regulations, potentially resulting in costly legal disputes. Finally, marketplace dynamics introduce intense strategic pressures, as agile business competitors with advanced digital marketing capabilities can rapidly dominate market share. Organizations that fail to continuously update their digital strategies and online operational processes risk losing visibility across digital platforms, allowing technically superior competitors to intercept customer engagement channels and capture target market segments.

Risk Mitigation in Online Marketing Campaigns

The risk mitigation steps for online marketing campaigns based on the aforementioned analysis are as follows:

Table 6
Detailed Risk Treatment and Action Plan Protocols for Digital Marketing

No	Risks	Risk Mitigation
1	Incorrectly Uploaded Content	Improving QA Competence through Periodic Training: Conduct regular training programs for the QA team to improve their understanding and skills in content evaluation. Layered Checking System: Implement a layered checking system to ensure that uploaded content is verified by multiple reviewers. Clarifying the Target Market through Market Research: Conduct in-depth market research to understand the needs, preferences, and behaviors of the target audience. Market Segmentation: Develop a clear market segmentation strategy to deliver content effectively to the appropriate audience.
2	Cybersecurity Threats	Conducting Regular Network Security Checks through Periodic Security Audits: Perform regular network security audits to identify and address security vulnerabilities. System Upgrades: Ensure that all systems and software are consistently updated with the latest security patches. Employee Training: Provide cybersecurity training for all employees to reduce the risk of cyberattacks.
3	Misuse of the Company Name by External Parties	Providing Clear Information on the Platform Regarding the Services Performed and Not Performed by the Company through Transparent Communication: Provide clear and transparent information regarding the services offered by the company across all platforms. Content Monitoring: Regularly monitor and manage content containing the company's name to ensure information accuracy. Law Enforcement: Cooperate with relevant authorities to address the misuse of the company's name that may damage its reputation.
4	Inaccurate Use of Online Platforms	Clarifying the Target Market through Audience Analysis: Use analytics tools to understand audience demographics, preferences, and behaviors across various online platforms. Platform Trials: Conduct trials across multiple platforms to determine the most effective channels for reaching the target market. Marketing Strategy Development: Develop marketing strategies tailored to the characteristics and preferences of the target audience on each platform.

Discussion

Example of a case in Indonesia

The failure of digital risk management within the Online Travel Agency (OTA) sector in Indonesia is evidenced by real operational incidents experienced by Traveloka (Pasya et al., 2020). This e-commerce unicorn expanded its digital marketing architecture by integrating flight reservations, hotel bookings, and lifestyle services into a single mobile application. This extensive platform diversification significantly increased the company's operational risk exposure. Inadequate risk management within this digital ecosystem triggered systemic failures, specifically unilateral ticket cancellations affecting consumers. This disruption stemmed from technical system errors and delayed network security updates. The immediate impacts of this risk management failure included public backlash across digital platforms, contractual disputes, and formal legal investigations concerning consumer data protection and corporate liability.

This case was further exacerbated by critical information governance failures across digital channels. Consequently, the company experienced a substantial decline in public trust and faced significant legal risks that threatened its corporate reputation. The Traveloka phenomenon provides valuable empirical evidence that aggressive digital marketing expansion without robust risk parameters based on SNI ISO 31000 can undermine institutional stability and long-term business sustainability.

CONCLUSION

This study successfully synthesizes enterprise risk management principles based on SNI ISO 31000:2018 into the digital marketing ecosystem within the Indonesian Online Travel Agency (OTA) sector, an area that has frequently been overlooked in conventional marketing literature.

Through an empirical analysis of Traveloka's operations, this research demonstrates that aggressive expansion of digital campaigns without robust risk parameters can trigger systemic failures, consumer data vulnerabilities, and regulatory investigations that significantly erode public trust. The academic position of this study challenges the common perspective that treats operational failures as isolated technical glitches. Instead, it conceptualizes these vulnerabilities as strategic governance risks that require structured corporate mitigation policies. The primary scholarly contribution of this paper lies in bridging the multidisciplinary gap between digital marketing management, cybersecurity practices, and compliance frameworks related to consumer protection law. Practically, the non-bibliometric risk assessment model and risk heat matrix developed herein provide actionable guidelines for practitioners to identify the probability and impact of digital disruptions, enabling them to proactively strengthen organizational resilience and protect brand equity.

As a final takeaway, the novelty of this research emphasizes that the adoption of modern marketing technologies should not solely focus on optimizing consumer reach and conversion rates. Instead, it must operate alongside structural risk management parameters that protect organizations against digital uncertainty. The limitations of this study, which relies on a qualitative descriptive analysis of secondary data from a single leading OTA unicorn company, provide clear directions for future research. To broaden the applicability of these findings, future studies should employ quantitative or mixed-method approaches to statistically evaluate the effectiveness of these risk mitigation strategies across a wider e-commerce landscape. Furthermore, investigating additional variables, such as the direct financial implications of integrating artificial intelligence into quality assurance processes and the adoption of emerging data privacy regulations, would substantially enrich contemporary digital marketing risk management theories.

ACKNOWLEDGEMENT

The authors express their deepest gratitude and appreciation to the Master of Management Study Program at Universitas Kristen Indonesia (UKI) for providing institutional support during the execution of this research. The authors also thank the *Lembaga Penelitian dan Pengabdian kepada Masyarakat* (LPPM) for facilitating the administration and peer review processes that helped refine this manuscript. Finally, high recognition is addressed to the editors and reviewers of INKUBIS: Jurnal Ekonomi dan Bisnis for providing constructive feedback, enabling this scientific article to contribute meaningfully to the advancement of digital marketing risk management in Indonesia.

AUTHOR CONTRIBUTION STATEMENT

Dr. Indra Gunawan, ST., ME. served as the primary author and corresponding researcher in this study. The author was fully responsible for the conceptualization of the research framework, formulation of the methodology based on the SNI ISO 31000 standard, and the collection and verification of empirical data from the Indonesian Online Travel Agency (OTA) sector. Furthermore, the author performed the formal data analysis, developed the risk mapping utilizing the heat matrix, designed the mitigation action plans, and drafted the manuscript through to its final revision to ensure academic rigor and compliance with the journal's editorial standards. All research stages were executed systematically, logically, and independently to deliver an original scholarly contribution

REFERENCES

Adeniran, I. A., Efunniyi, C. P., Osundare, O. S., & Abhulimen, A. O. (2024). Transforming marketing strategies with data analytics: A study on customer behavior and personalization. *International Journal of Management & Entrepreneurship Research*, *6*(8), 41–51.

Ahmad Al Serhan, T. F., & Zhang, S. (2025). The paradox of digital marketing: Sustainable framework for effective strategies and regulatory challenges. *Information Development*, *41*(2), 529–545.

Akude, D. N., Akuma, J. K., Kwaning, E. A., Asiama, K. A., & Amoah-Ahinful, I. K. (2026). Sustainable Marketing Strategies and Financial Performance in the Hotel Industry: Does Digital Transformation and Integration Matter? *International Review of Management and Marketing*,

16(1), 30.

Allam, H. (2022). Bridging the Gap: Integrating DevOps Culture into Traditional IT Structures. *International Journal of Emerging Trends in Computer Science and Information Technology*, *3*(1), 75–85.

Begum, S., Rameesa, K., Hafeez, A., Bipin, T. P., Nikhil, C. N., & Salian, G. (2025). The Next-Gen E-Commerce Platform: Merging Vendor, Inventory, and Payment Gateway Solutions. *2025 Eighth International Women in Data Science Conference at Prince Sultan University (WiDS PSU)*, 98–103.

Bucovetchi, O., & Vevera, A.-V. (2024). Perspective chapter: organizational resilience toward managing risks in digital marketing. *Management in Marketing Communications*, 147.

Celestin, M., Sujatha, S., Kumar, A. D., & Vasuki, M. (2024). Leveraging digital channels for customer engagement and sales: Evaluating SEO, content marketing, and social media for brand growth. *International Journal of Engineering Research and Modern Education*, *9*(2), 32–40.

Dewi, G. D. P., & Lusikooy, A. E. (2023). E-commerce transformation in Indonesia: Innovation and creative destruction. *Nation State: Journal of International Studies*, *6*(2), 117–138.

Hokmabadi, H., Rezvani, S. M. H. S., & De Matos, C. A. (2024). Business resilience for small and medium enterprises and startups by digital transformation and the role of marketing capabilities—A systematic review. *Systems*, *12*(6), 220.

Islam, M. A., & Afroz, Z. (2025). AI-Augmented Business Intelligence for Campaign Performance Optimization in US Retail and e-Commerce: A Mixed-Methods Study of Marketing ROI. *American Journal of Scholarly Research and Innovation*, *4*(01), 732–774.

Jannah, M., Mahmuda, Z., & Alankrita, A. (2025). The Digital Economy Boom: How E-Commerce is Reshaping Indonesia's Market. *Indonesia Discourse*, *2*(1), 33–58.

Karpii, O., & Mykhailyk, N. (2025). Strategies for Integrating Marketing and Digital Reputation Management in the Modern Online Business Environment. *Publishing House "Baltija Publishing."*

Katsikeas, C., Leonidou, L., & Zeriti, A. (2020). Revisiting international marketing strategy in a digital era: Opportunities, challenges, and research directions. *International Marketing Review*, *37*(3), 405–424.

Kuzmynchuk, N., Kutsenko, T., & Pysarevska, H. (2025). Organizational and economic mechanism for adapting a company's marketing strategy in the digital environment. *Право Та Інноваційне Суспільство*, *1 (24)*, 99–109.

Liu, C., & Babar, M. A. (2026). Corporate cybersecurity risk and data breaches: A systematic review of empirical research. *Australian Journal of Management*, *51*(1), 62–92.

Madaki, A. S., Ahmad, K., & Singh, D. (2024). Information technology integration implementation in public sector organizations: Exploring challenges, opportunities, and future trends. *Information Development*, 02666669241255661.

Mangalasserri, K., Ramachandran, K. K., Singh, N., Kumar, M. J., Reddy, M. S., & Kumar, P. (2025). Revolutionising consumer engagement through cutting-edge marketing strategies. *International Journal of Electronic Customer Relationship Management*, *15*(3), 222–247.

Nwabekee, U. S., Abdul-Azeez, O. Y., Agu, E. E., & Ijomah, T. I. (2024). Digital transformation in marketing strategies: The role of data analytics and CRM tools. *International Journal of Frontline Research in Science and Technology*, *3*(2), 55–72.

Pasya, F. K., Islami, F. N., Hanifah, N., Zikrinawati, K., & Fahmy, Z. (2020). *PURCHASING DECISION OF OTA (ONLINE TRAVEL AGENT) THROUGH RISK PERCEPTION WITH E-TRUST AS AN INTERVENING*.

Sikder, A. S., & Rolfe, S. (2023). The power of e-commerce in the global trade industry: A realistic approach to expedite virtual market place and online shopping from anywhere in the world.: E-commerce in the global trade industry. *International Journal of Imminent Science & Technology.*, *1*(1), 79–100.