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The Risks of Digital Marketing in Indonesia: A Bibliometric Analysis

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Abstract.

Digital marketing uses digital technology in the business world. The use of digital technology in marketing is also considered more advanced when compared to conventional marketing so 63.52% of digital users utilize digital technology for marketing. However, on the other hand, digital technology increases security risks. Therefore, an in-depth study of the risks of digital marketing in Indonesia is needed. The method used is bibliometric analysis with clustering and density models. The data needed comes from scientific literature which is available from crossref. The tools used for analysis consist of perish or publish and VOSviewer. Based on bibliometric analysis with a network visualization model, five keyword clusters frequently appear, the first cluster is shown in red, which contains 10 keywords. The second cluster, shown in green, contains 10 keywords. The third cluster shown in blue contains 6 keywords. The fourth cluster shown in yellow contains 5 keywords. The fifth cluster shown in purple contains 2 keywords. Based on density analysis, the topics often discussed in studies of the determinants of e-commerce development consist of 30 words with the main word being digital marketing. Keywords: Bibliometrics, Digital Marketing, Risk, Indonesia.

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1. Introduction

Digital marketing, also known as marketing digitalization, is the strategic implementation of digital technology within the realm of business operations. Typically, the digital technology commonly employed in marketing endeavors manifests as various devices, such as cell phones, laptops, computers, and digital cameras. The digitalization of marketing offers advantages to individuals involved in business, particularly those operating within the context of Indonesia. Indonesia, being an archipelagic nation, is characterized by its landmasses being geographically fragmented by bodies of water. This phenomenon poses challenges for entrepreneurs in promoting their goods or services through direct marketing

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channels. In addition to facing various challenges, business professionals will also encounter significant operational expenses when engaging in direct marketing activities. Nevertheless, the inclusion of digital technology has the potential to streamline the marketing process, rendering it more cost-effective and feasible. Applications and websites accessible through electronic devices offer functionalities that facilitate direct engagement between business proprietors and the market. The temporal dynamics of the interaction between the business marketing team and the market exhibit a notable degree of flexibility, allowing for heightened levels of engagement. This phenomenon will engender a psychological affinity among consumers towards the products or services being promoted by individuals in the business sector. By adopting this approach, there is a likelihood of enhancing consumer loyalty towards the product or service. The positive impact observed in this context aligns with the findings of a study conducted by Nasution et al. (2022), as supported by empirical evidence. The temporal dynamics of the interaction between the business marketing team and the market exhibit a notable degree of flexibility, allowing for heightened levels of engagement. This phenomenon will engender a psychological affinity among consumers towards the products or services being promoted by individuals in the business sector. Employing this approach is likely to enhance the level of consumer loyalty towards the respective product or service.

The utilization of digital technology in marketing is widely regarded as more sophisticated in comparison to traditional marketing methods. According to a study conducted by Peter and Vecchia (2021), it has been demonstrated that digital marketing facilitates technological progress by providing standardized, interactive, ubiquitous, and costeffective digital channels. Technological advancements facilitate the provision of tools and platforms that enhance the efficiency of supply chain processes for businesses. In the context of traditional marketing, it is customary for service or product providers to initially distribute their goods to intermediaries. Nevertheless, the utilization of digital marketing enables service or product providers to engage in direct marketing strategies targeting consumers. This activity has the potential to lower prices, which could potentially lead to an increase in consumer satisfaction. The research conducted by Adam et al. (2020) provides evidence of consumer satisfaction. The standardization of digital technology devices also enables business professionals to effectively convey their dedication to upholding product or service quality to the intended market. When the target market possesses knowledge regarding the product or service provider's dedication to ensuring the quality of their offerings, it is likely to generate interest among potential buyers, thereby increasing the likelihood of product purchase. Digital marketing is characterized by its interactive nature, as it facilitates a close and intimate interaction between business professionals and their target audience.

Aligned with scholarly research, the close relationship between business professionals and the target market is expected to be intimate. In accordance with scholarly research, it is crucial to emphasize the significance of the close relationship between business professionals and the target market. According to Langan et al. (2019), digital marketing is a transformative phenomenon in business operations that alters the manner in which companies engage with various stakeholders, including their target market. The advent of digital technology has brought about significant disruptions across various domains, thereby enabling universal accessibility to this technology for individuals from all walks of life. The presence of accessibility in digital technology signifies its widespread availability, albeit not yet reaching a state of universal ubiquity. The utilization of digital technology in the field of marketing necessitates the possession of a device and access to an internet network. Despite the limited number of components, the marketing team can effectively reach a broader market without the need for direct engagement with the target market, thereby reducing overall marketing expenditures. The benefits associated with digital marketing render it an appealing prospect for entrepreneurs seeking to engage in the process of digitalization within the realm of marketing. The aforementioned findings are derived from the report titled "E-commerce in Indonesia in 2022" published by the Indonesian Central Statistics Agency. According to the data presented in this report, it is evident that a significant proportion of digital users, specifically 63.52%, utilize e-commerce platforms for marketing purposes. Additionally, 55.52% of these users employ these platforms for the procurement of raw materials, while 44.31% utilize them for internal business communications. Furthermore, 41.06% of digital users in Indonesia employ e-commerce platforms for customer management, and 37.97% utilize them for various other purposes. The prevalence of social media has a strong correlation with the significant growth of its usage as a marketing tool by business professionals. According to the data presented on the Wearesocial platform in 2023, the proportion of active social media users in Indonesia as of January 2023 stands at 60.4% of the total population. TikTok is identified as the media platform exhibiting the most prominent marketing trend in the year 2022.

The substantial global user base of digital technology in the field of marketing should ideally have significant implications for its success. However, it is important to note that individuals engaged in business activities are also susceptible to being victimized by criminal activities associated with securities. According to Arkhipova and Gurieva (2018), the aforementioned risk can occur in the context of internet connectivity, wherein personal data or information of both business individuals and consumers can be intercepted. In addition to concerns regarding security, the accessibility of marketing patterns to all social media users facilitates the ability of competitors to anticipate and comprehend marketing strategies employed by various businesses. Therefore, it is imperative for individuals in the business sector to consistently generate innovative ideas in order to maintain resilience in the digital realm.

Given the potential application of digital technology in marketing and the prevailing challenges, a comprehensive examination of the hazards associated with digital marketing in Indonesia is imperative. This study aims to furnish business professionals with a comprehensive overview that can facilitate the formulation of strategic measures. Numerous scholarly investigations have examined the potential hazards associated with digital marketing, albeit primarily within the confines of a micro-level analysis focused on individual businesses or companies. These studies have generally addressed the broader topic of marketing risks in a more generalized manner. Hence, the objective of this study is to (1) employ bibliometric analysis and the clustering method to identify and categorize digital marketing risks, and (2) utilize bibliometric analysis and the clustering method of density to map digital marketing risks. The selection of bibliometric analysis was based on its capacity to examine scientific articles pertaining to the desired discussion topics. The research contributes to the theoretical understanding of digital marketing risks by introducing new

references. Additionally, it offers practical value by serving as a foundation for the development of adaptive and competitive marketing strategies in the digital realm.

2. Research Methods

This research uses quantitative bibliometric analysis. The bibliometric approach helps authors identify several vital research gaps (Khan et al., 2022). The data sources used come from scientific literature, consisting of scientific articles and scientific proceedings. The data source comes from Crossref. The tools for operational research are listed in Table 1.

Table 1. Research tools									
No	Tool	Utility							
1	Publish or Perish 8 and Crossref	Search for scientific literature that matches the research topic							
2	VosViewer	To filter data sources that are relevant to the research topic, and map scientific articles that match the study topic.							
3	Ms. Excel	To tabulate and select data							
4	Ms. Word	Describe the research results and write them in the article							

The provisions of scientific literature selected in this research are scientific articles and scientific proceedings on the topic of digital marketing risks in Indonesia. Keywords used for searches include "risk", "digital marketing", and "Indonesia". The use of foreign languages in keywords aims to expand the reach of scientific literature. There are several procedural flows used in this research, namely as follows: (1) Conduct research on the potential and problems of digital marketing in Indonesia; (2) Sort potential and problems of digital marketing in Indonesia and determine the topic of study; (3) Exploring the metadata of scientific articles according to the study topic using Publish or Perish 8, the database used is Crossref, for the quantity of scientific articles searched for 200, taking into account that they are relevant to the research topic and current conditions. Topic searches are based on keywords contained in the titles and abstracts of scientific articles with the study year range from 2000 to 2023; (4) After the database appears, the author exports the database results in the RIS extension. This extension is compatible with the VOSviewer application; (5) Input the database (RIS format) into VOSviewer and sort the keywords that are most relevant to the study topic; (6) MapmetadataRIS with clustering and density mapping models. Mapping is based on an algorithm that has been operating on Vosviewer, and (7) Stores and assesses the strength of interactions between nodes (circles) and lines based on size, and identifies publishing times based on color.

More clearly, the procedure is listed in Figure 1.



Figure 1. Bibliometric study procedure

3. Results and Discussion

3.1. Results

3.1.1Digital Marketing Risk Mapping with the Clustering Method - Bibliometric Analysis

The utilization of bibliometric mapping through the application of clustering techniques aims to visually represent the interconnections among frequently discussed keywords within the realm of scientific literature. The visualization presented here is generated through the application of the network visualization analysis methodology in VOSviewer. Through the utilization of the clustering methodology, the author is able to discern potential risks within the realm of digital marketing in Indonesia. The interconnection among keywords is visually represented through various symbolic models, including color, line, shape (specifically node or circle), size, color, and label. Every symbol system serves a distinct purpose in facilitating the identification of relationships between keywords for readers. The utilization of color serves as a means to visually distinguish and delineate clusters. Lines are utilized to indicate the degree of interaction between keywords. A thinner line connecting keywords signifies a higher frequency of occurrence of the same keyword within the cluster. Consequently, the closer the distance between the lines connecting keywords, the more pronounced the interaction. Nodes associated with size represent the frequency at which keywords appear in research. A positive correlation exists between the size of a node and the frequency of occurrence of a keyword in scientific literature. This is consistent with the representation of label sizes. The clustering visualization employed in this study is built upon the research conducted by Kumar et al. (2020) and Fiandari (2022). The visualization effectively represents the frequency of keyword occurrences in scholarly research, with larger node sizes indicating higher frequencies of appearance in scientific literature. This is consistent with the representation of label sizes.

This clustering method employed in bibliometric analysis utilizes scientific literature data derived from publications or scholarly articles. During the course of the investigation, a total of 200 scientific publications were identified, all of which were found to contain relevant keywords pertaining to the subject matter under study. After the completion of the sorting process, it was found that there are only 35 scientific literature sources that are highly pertinent and specifically address the potential risks associated with digital marketing. The figure incorporates scientific literature, comprising scientific articles and scientific proceedings, from both local and international sources, as outlined in the methodology. The results of the clustering analysis are depicted in Figure 2. This visual representation reveals that the term "digital marketing" emerges as the prevailing keyword across a corpus of 35 scholarly publications. The subsequent occurrence of the term "digital marketing" is accompanied by additional keywords, including impact, marketing, company, and SMS. The node size of each keyword, such as "digital marketing," visually represents its frequency of appearance. The larger the circle, the more frequently the keyword appears. The magnitude of the label included in the largest category serves as an indicator of the frequency of its occurrence. The digital marketing keywords exhibit a strong correlation with business operations, services, and products. The term "impact" exhibits a close correlation with technology, direct marketing, and the COVID-19 pandemic. Marketing keywords are intricately linked to the domains of strategy, augmentation, and consumer behavior. The term "keyword company" exhibits a strong correlation with the domains of the internet,

information, and consumerism. The SMS keyword exhibits a strong correlation with the data keyword.



Figure 2. Network visualization of digital marketing risks in Indonesia Source: Author's data processing results (2023)

Through Figure 2, keyword clusters can also be seen. Based on the colors visualized in Figure 2, it is known that there are five colors, namely red, green, blue, yellow, and purple. Red contains 10 keywords, green contains 10 keywords, blue contains 6 keywords, yellow contains 5 keywords, and purple contains 2 keywords. In more detail, the keywords contained in each cluster are listed in Table 2.

Cluster	Color & quantity	Keywords				
1	Red (10)	Additions, consumer, e-commerce, factor, marketing, online				
		shopping, product, service, strategy, technology				
2	Green (10)	Brand awareness, company, customer, digital marketing strategy, earnings				
		management, information, internet, person, problem, social media				
3	Blue (6)	Brand expectation, covid, customer satisfaction, impact, Indonesia, online				
		impulse				
4	Yellow (5)	Business, digital marketing, direct marketing, effects, marketing strategy				
5	Purple (2)	Data & SMS				

Table 2. Clustering of digital	marketing risk keywords in Indonesia
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Source: Author's data processing results (2023)

3.1.2 Digital Marketing Risk Mapping with Density - Bibliometric Analysis

The visualization of density depicts the frequency at which topics are commonly discussed in scientific literature, based on the specific subject under investigation. In the context of network visualization or clustering models, frequency is visually represented through various attributes such as size, color, line thickness, and shape. However, the density model solely relies on the utilization of labels and colors to convey information. The frequency of topic discussion increases proportionally with the size of the label. This observation is substantiated by the degree of brightness exhibited by the color, whereby a higher level of

brightness corresponds to a greater frequency of the keyword being addressed in scholarly literature. The findings of the density analysis are presented in Figure 3. The term "density" denotes the presence of 30 frequently addressed topics in studies on digital marketing risks conducted in Indonesia. The aforementioned terms encompass digital marketing, service provision, business operations, technology utilization, impact assessment, product development, strategic planning, Indonesia's market landscape, marketing practices, consumer behavior, and influential factors.

	data	msmes	covid	direct marketing	
social medium probler digital marketing strategy	n person		keting _{business}	impact	
brand awareness		product strategy	technology		
	internet	marketing	indonesia consumer		customer satisfaction brand expectation
customer COM	ipany	addition	factor		
	nformation	e commerce			
K VOSviewer		earnings managemen	ıt		

Figure 3. Digital Marketing Risk Density in Indonesia Source: Author's data processing results (2023)

3.2. Discussion

The search results pertaining to Publish or Perish software indicate a dearth of scientific literature examining the risks associated with digital marketing in Indonesia. The explicit presentation of risks in scientific literature is not consistently observed. The diverse risks associated with digital marketing in Indonesia have been identified through a comprehensive analysis of scientific literature. Commencing with the hazards associated with business proprietors and extending to consumers. According to a study conducted by Andhyka et al. (2023), it was discovered that not all Micro, Small, and Medium Enterprises (MSMEs) have convenient access to digital technology during their marketing operations. Failure to effectively utilize technology in the era of extensive digital marketing may result in a decline in the visibility and market presence of micro, small, and medium-sized enterprise (MSME) products. This phenomenon can be attributed to the prevailing consumer behavior, wherein individuals tend to prioritize consulting social media platforms prior to engaging in a purchase transaction. Another potential consequence that may arise following a decrease in visibility is a decline in sales turnover. This is because when individuals are unaware of the product's existence, the likelihood of attracting consumers diminishes, thereby negatively impacting the turnover of micro, small, and medium enterprises (MSMEs). Certainly, in the

absence of counterbalancing strategic measures, the persistence of this situation may engender a potential threat of organizational failure.

The subsequent scholarly publication is the study conducted by Sihotang and Hudrasyah (2023), which identified the deficiencies of PT SS in relation to inadequate digital promotion strategies and limited social media awareness. PT SS, a company that specializes in the distribution of diesel fuel products, is facing the challenge of declining sales performance. This can be attributed to two main factors: changes in government regulations and the adverse effects of the Covid-19 pandemic. Consequently, the marketing team is tasked with implementing promotional strategies to mitigate the impact of these circumstances. Nonetheless, the absence of familiarity with social media and digital marketing poses a potential threat to the competitive edge of businesses, as their rivals who leverage technology to its fullest extent may outperform them. Hence, this study presents a practical approach to enhance the utilization of digital technology by leveraging social media advertising, Search Engine Optimization (SEO), personalized email marketing, content marketing, and Omni channel CMR (Customer Relationship Management) to optimize customer engagement across various communication channels. This study demonstrates that scholarly literature not only addresses the potential hazards associated with digital marketing but also provides recommendations for mitigating these risks. Additional studies, specifically the research conducted by Prameswari and Aprianingsih (2023), provide further evidence that early adopters of social media for marketing purposes pose a significant threat as they have already established familiarity with the public or consumers. Therefore, there is a potential risk that the product may not achieve its full potential lifespan.

This scientific article focuses on the topic of digital marketing for consumers, in contrast to previous literature which primarily examined the utilization of digital technology by business professionals. In a study conducted by Setyawan et al. (2023), it was discovered that the utilization of digital technology yielded favorable outcomes on the purchasing performance of the organization. The positive impact is evidenced by a rise in consumer purchasing choices for Momoo Milk Fresh merchandise. This study provides clear evidence that the utilization of digital technology has a beneficial impact on individuals involved in business activities. However, it is important to note that when consumers reach the stage of excessive consumption, they become susceptible to impulsive purchasing behaviors. Given that promotional content on social media is typically captivating and designed to incentivize consumers to engage in repeat buying behavior. The research conducted by Febriandika et al. (2023) identified a correlation between digital marketing content and impulsive purchasing behavior among consumers. The results of this study indicate a statistically significant positive correlation between brand reviews and the level of impulsiveness exhibited in purchasing behavior among TikTok users. Buyer reviews serve as a means for business professionals to indirectly promote their products. There is a positive correlation between the quality of reviews or comments and the level of impulsivity. It is imperative to acknowledge that in the absence of consumer awareness, there exists a potential for the development of an unhealthy purchasing culture and a proclivity towards excessive consumption. Naturally, in the absence of consumer awareness, there exists a potential for an unfavorable purchasing culture and a proclivity towards excessive consumption. The level of impulsivity increases in proportion to its magnitude.

The subsequent risk pertains to securities encountered by consumers. The online shopping system serves as a platform for business professionals to indirectly promote and sell their products or services. Digital marketing offers advantages for individuals engaged in business activities. However, it is important to acknowledge that this form of marketing also entails certain inherent risks for consumers. The reason for this phenomenon is that due to the utilization of digital technology, consumers are unable to directly assess the physical attributes of a product, thereby diminishing the level of assurance regarding its quality. Furthermore, the utilization of personal identity and personal financial accounts during the registration process on digital platforms amplifies the likelihood of consumers encountering the peril of data privacy violations and breaches in their accounts (Indriyani, 2021).

4. Conclusion

Based on bibliometric analysis with the network visualization model, there are five frequently appearing keyword clusters, the first cluster is indicated by a red color, which contains 10 keywords. The second cluster, which is shown in green color, has 10 keywords. Based on density analysis, the topics often discussed in the determinant study of e-commerce development consist of 30 words including digital marketing, service, business, technology, impact, product, strategy, Indonesia, marketing, consumer, factor, addition, e-commerce, earnings management, internet, company, information, customer, person, problem, social medium, digital marketing strategy, brand awareness, MSMEs, data, covid, direct marketing, impacts, customer satisfaction, and brand expectation.

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