

Bibliometric Analysis of Digital Marketing: Collaboration, Themes, and Opportunities

Riski Sugiarti^{1*}, Siti Mujanah², & Achmad Yanu Alif Fianto³

^{1, 2, 3} Fakultas Ekonomi Dan Bisnis, Universitas 17 Agustus 1945 Surabaya

Email: Riskisugiarti07@gmail.com; sitimujanah@untag-sby.ac.id; achmadyanu@untag-sby.ac.id

* Corresponding Author: Riskisugiarti07@gmail.com

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ABSTRACT

This research examines the development of digital marketing scholarship through a bibliometric approach to identify collaboration patterns, dominant themes, and potential research opportunities. Data were collected from Google Scholar using Harzing's Publish or Perish and analyzed with VOSviewer to map the evolution of digital marketing studies in recent years. The findings show that discussions in this field increasingly revolve around digital transformation, social media strategies, and their contribution to supporting micro, small, and medium enterprises (SMEs). Patterns of collaboration across authors and institutions demonstrate growing interdisciplinary engagement in digital marketing research. The analysis reveals four major thematic clusters: digital marketing strategies, SME empowerment, technological adaptation, and research development. These clusters highlight the role of technology and innovation in shaping new marketing models that enhance business–consumer interactions. The study also indicates several directions for future research, including digital consumer behavior, influencer involvement, and data-driven marketing decision-making. Overall, this bibliometric review offers a comprehensive overview of how digital marketing research continues to evolve and contribute to business growth, collaborative knowledge creation, and innovation in the digital era.

Keywords: Digital Marketing; Collaboration; Themes; Opportunities; Bibliometric Analysis.



INTRODUCTION

The rapid advancement of information and communication technology over the past two decades has significantly transformed the way individuals interact, conduct transactions, and obtain information. Digitalization has increasingly penetrated various sectors, including business and marketing. The rise of the internet, social media platforms, and data-driven technologies has shifted marketing practices from traditional methods toward more interactive, personalized, and data-oriented strategies. In this context, digital marketing emerges as a key innovation that reshapes how companies engage with consumers and deliver value in competitive business environments.

Digital marketing offers organizations the ability to reach target audiences more efficiently and at lower costs compared to conventional approaches. Through channels such as social media, search engines, email, content marketing, and influencer-based strategies, companies can establish more dynamic and interactive communication with customers. These efforts not only enhance brand visibility but also build stronger customer loyalty and improve user experience. With the continuous growth of internet penetration and digital device usage, digital marketing has become an essential component of modern business strategies.

In academic discourse, the importance of digital marketing is reflected in the increasing volume of research publications focusing on this area. Studies have explored topics such as digital consumer behavior, big data analytics, social media effectiveness, content personalization, sentiment analysis, and the integration of artificial intelligence (AI) in marketing strategies. However, the diversity of research approaches and themes often results in fragmented literature, making it challenging to gain a holistic understanding of the overall direction and evolution of digital marketing research.

To address this gap, bibliometric analysis serves as a valuable method for mapping scientific developments in the field. As a quantitative approach, bibliometrics allows researchers to examine publication growth, citation patterns, collaboration networks, and keyword trends. Through this method, it becomes possible to identify dominant research themes, conceptual linkages, and the progression of scientific discussions over time. Bibliometric insights also offer guidance for future research agendas by highlighting emerging areas and understudied topics.

In the context of digital marketing, bibliometric studies are increasingly relevant due to the fast-paced technological changes and evolving consumer behavior. Such analyses enable researchers to:

1. Identify collaboration networks among authors, institutions, and countries contributing to the digital marketing field;

2. Map major themes such as data-driven marketing, automation, social media strategies, and personalized customer experiences;
3. Uncover future research opportunities by recognizing gaps between established topics and emerging issues.

Although previous studies have employed bibliometric methods in areas related to e-commerce, social media, and digital transformation, comprehensive mapping of digital marketing as an integrated research domain remains limited. Many earlier studies address only specific aspects rather than providing a holistic view of thematic development and collaboration patterns.

Therefore, this study aims to produce a comprehensive mapping of digital marketing research through a bibliometric approach. Three focal points guide the analysis: (1) collaboration networks among authors, institutions, and countries; (2) identification of major themes and trends over the past decade; and (3) exploration of potential future research directions. The findings are expected to enrich the theoretical understanding of digital marketing research development and offer practical insights for academics, practitioners, and policymakers in strengthening innovation within the field.

Overall, this study not only describes the current landscape of digital marketing scholarship but also emphasizes the importance of collaboration and technological innovation in advancing marketing science in the digital era. Understanding thematic patterns and research linkages can help the academic community build more relevant, inclusive, and impactful research in the future.

LITERATURE REVIEW

The rapid progress of digital technologies has reshaped the way individuals and organizations communicate, interact, and market products or services. Within academic discourse, digital marketing has become one of the most rapidly expanding research areas. Through bibliometric techniques, scholars are able to understand how research dynamics in this field evolve—ranging from collaboration among authors to the development of dominant themes and potential research opportunities. This literature review outlines the theoretical foundations and summarizes relevant previous studies supporting the present research.

From a theoretical standpoint, several grand theories help explain how digital marketing research continues to evolve. Rogers' Diffusion of Innovations provides insight into how new technologies, ideas, and marketing practices spread across academic and practical domains. Such diffusion is reflected in growing publication trends and the emergence of new research keywords. Additionally, Social Network Theory offers a useful framework for analyzing collaborative relationships among authors, institutions, and countries. Co-authorship and citation networks help identify key contributors who significantly

influence the advancement of digital marketing knowledge. Meanwhile, Knowledge Production Theory or the broader concept of the Science of Science highlights how scholarly paradigms shift over time—from foundational digital marketing concepts toward analytics-driven and AI-based marketing approaches.

Other theoretical perspectives also enrich the understanding of digital marketing research. The Resource-Based View (RBV) emphasizes the value of unique capabilities formed through academic–industry collaboration, allowing organizations and research teams to develop competitive advantages in producing impactful studies. Institutional Theory further explains how academic norms, regulatory pressures, and societal expectations shape the direction of digital marketing research, including rising awareness of data privacy, cybersecurity, and digital ethics. At a broader systems level, Actor-Network Theory (ANT) conceptualizes research as a network of human and non-human entities—such as data, algorithms, and digital platforms—providing a more comprehensive perspective on how technology influences marketing research processes.

Previous studies reveal that collaboration within digital marketing research has been steadily increasing, especially among academic institutions in developed countries. These collaboration patterns often form distinct clusters, where certain universities or countries serve as major hubs in global research networks. Nonetheless, contributions from developing nations have also grown, offering contextual perspectives that enrich global scholarship. Partnerships between academics and industry practitioners are also becoming more prominent, particularly in applied domains such as e-commerce, digital advertising, and data-driven marketing strategy.

From a thematic perspective, digital marketing research frequently explores topics such as social media strategies, digital consumer behavior, search engine optimization (SEO), content marketing, influencer engagement, digital advertising, and the integration of big data and machine learning in marketing. These recurring themes suggest a shift from conceptual explorations toward more empirical, data-intensive methodologies. Keyword analyses also reveal emerging discussions related to digital ethics, consumer privacy, and sustainable marketing practices.

Methodologically, bibliometric studies in this domain commonly employ co-authorship networks to examine collaborative relationships, co-citation analysis to identify conceptual linkages, and keyword co-occurrence analysis to detect dominant trends. Recent advancements show that scholars increasingly integrate text mining and topic modeling to capture thematic changes more precisely over time.

Despite substantial progress, several research gaps remain evident. Research outputs are still heavily dominated by developed nations, highlighting a need for broader representation from developing countries. Interdisciplinary studies that bridge marketing, technology, law, and ethical considerations also

remain limited. Moreover, while many studies focus on digital marketing performance and strategy, fewer examine its broader societal and ethical implications. There is also an opportunity to complement quantitative bibliometric methods with qualitative approaches for richer insight.

Overall, bibliometric analyses play an essential role in mapping the landscape of digital marketing research. By applying theoretical perspectives such as Diffusion of Innovations and Social Network Theory, researchers can better understand how knowledge evolves, how collaborative structures form, and how thematic trajectories shift over time. This literature review offers a foundational basis for advancing digital marketing research that is more inclusive, contextually relevant, and responsive to technological transformation.

RESEARCH METHODS

This study adopts a bibliometric analysis approach conducted through two primary stages. The first stage involves data collection using the Harzing's Publish or Perish software to gather academic publications from the Google Scholar database covering a nine-year period (2015–2024). This software assists in extracting citation metrics, publication details, and related bibliographic information relevant to the topic of digital marketing. The second stage utilizes VOSviewer, a mapping and visualization tool designed to analyze relationships among documents, authors, keywords, and publication patterns.

In the data search process, the keywords “Digital Marketing: collaboration, themes, and opportunities” were employed to identify and classify relevant publications. The retrieved data were then processed to generate bibliographic networks—including co-authorship, keyword co-occurrence, and citation networks. These networks allowed for the identification of collaboration patterns, thematic clusters, and research developments over time. Through this two-stage analytical procedure, the study provides a structured overview of the scientific landscape and thematic evolution within digital marketing research.

RESULTS

The bibliometric analysis conducted in this study identified a total of 500 publications with 5,422 citations and an annual citation rate of 542 related to the topic Digital Marketing: Collaboration, Themes, and Opportunities (Figure 1). Based on the keyword mapping in Figure 2, four major clusters emerge, each illustrating distinct thematic focuses within digital marketing research.

The second cluster, shown in yellow, focuses on digital marketing strategies employed to enhance business performance. Research in this group typically addresses how digital transformation alters marketing activities, offering MSMEs new ways to reach customers and strengthen their market positioning.

The third cluster, illustrated in green, emphasizes transformations in business and social behavior that arise from digitalization. This cluster sheds light on the opportunities and barriers that organizations encounter as they adapt to technology-driven environments, especially regarding consumer interaction and market dynamics.

The fourth cluster, depicted in red, highlights methodological and conceptual elements of digital marketing research. Studies in this group act as a bridge between theoretical frameworks and practical applications, particularly those relating to MSMEs and digital technology adoption.

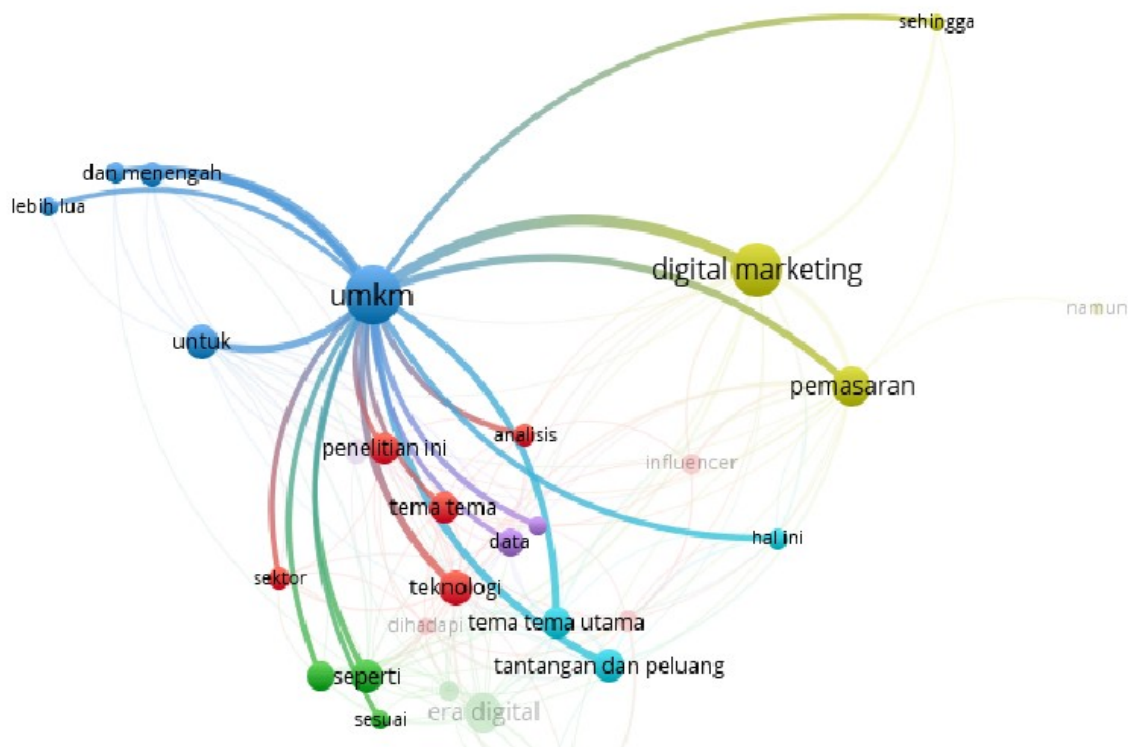


Figure 3. Visualization of the Relationships Among Topics Related to MSME Digital Marketing

Visualizations in Figure 3 reveal that many studies connect MSMEs with key themes such as strategic adaptation, technological readiness, and digital marketing utilization. These interlinkages illustrate that digital marketing research related to MSMEs is multidisciplinary, integrating several components—from business strategies and technological competence to digital innovation.

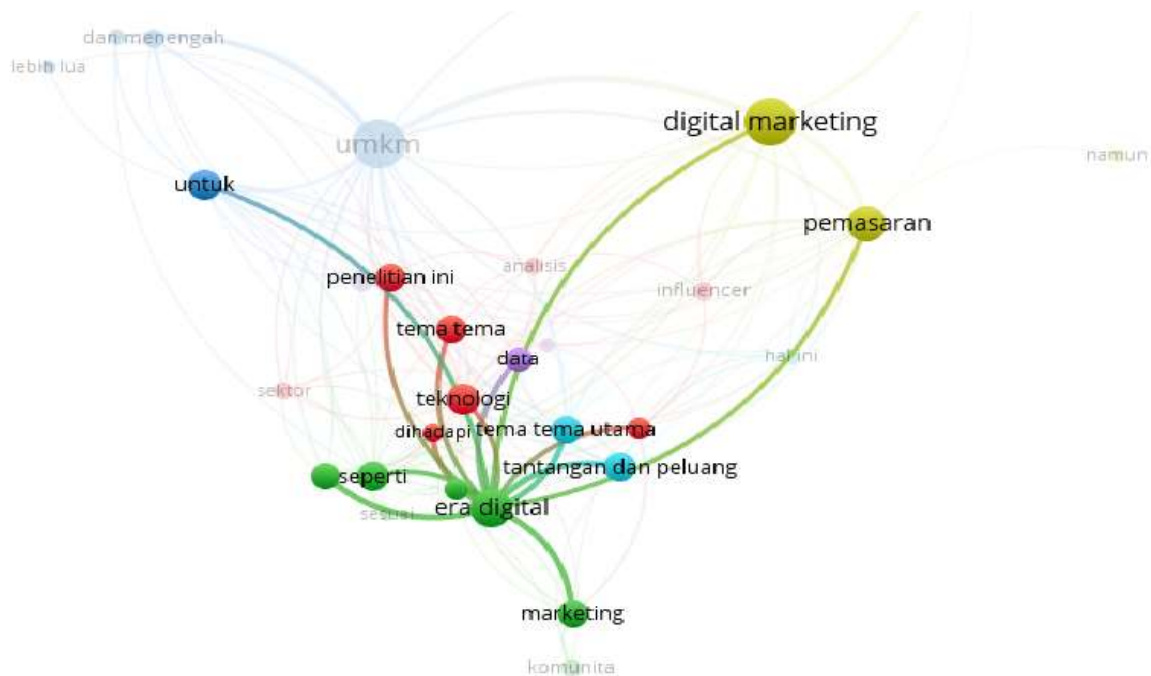


Figure 4. Visualization of the Relationships Among Topics Related to Marketing in the Digital Era

Similarly, Figure 4 maps broader relationships connecting digital marketing, MSMEs, and the digital era. Digital marketing appears as the central theme, with research trends moving toward understanding how MSMEs adopt digital tools and how technological transformation shapes modern marketing practices. The network structure shows a combination of scientific perspectives, including marketing, entrepreneurship, and technological adaptation.

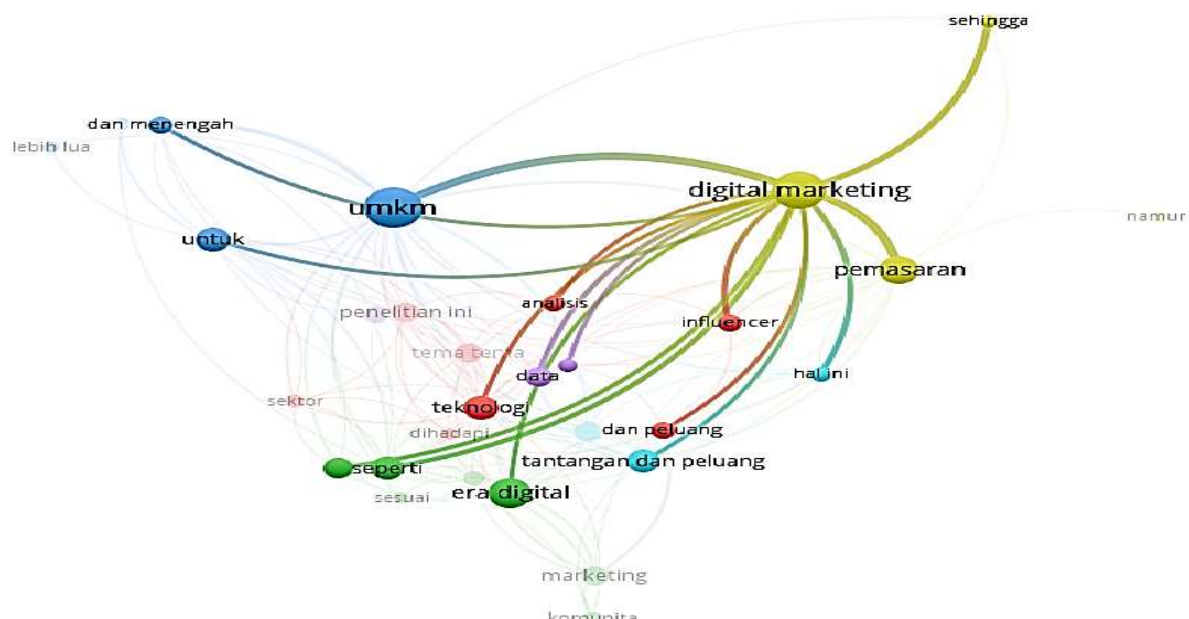


Figure 5. Visualization of the Relationships Among Topics Related to Digital Marketing

Furthermore, Figure 5 highlights the strong association between digital marketing and various contemporary marketing practices. Dominant themes include digital strategies, influencers, data utilization, and analytics. Terms such as “technology,” “data,” and “analytics” indicate a shift toward more quantitative and data-driven research designs. Meanwhile, topics related to MSMEs and the digital era appear as supporting elements that reinforce the contextual framework of these studies.

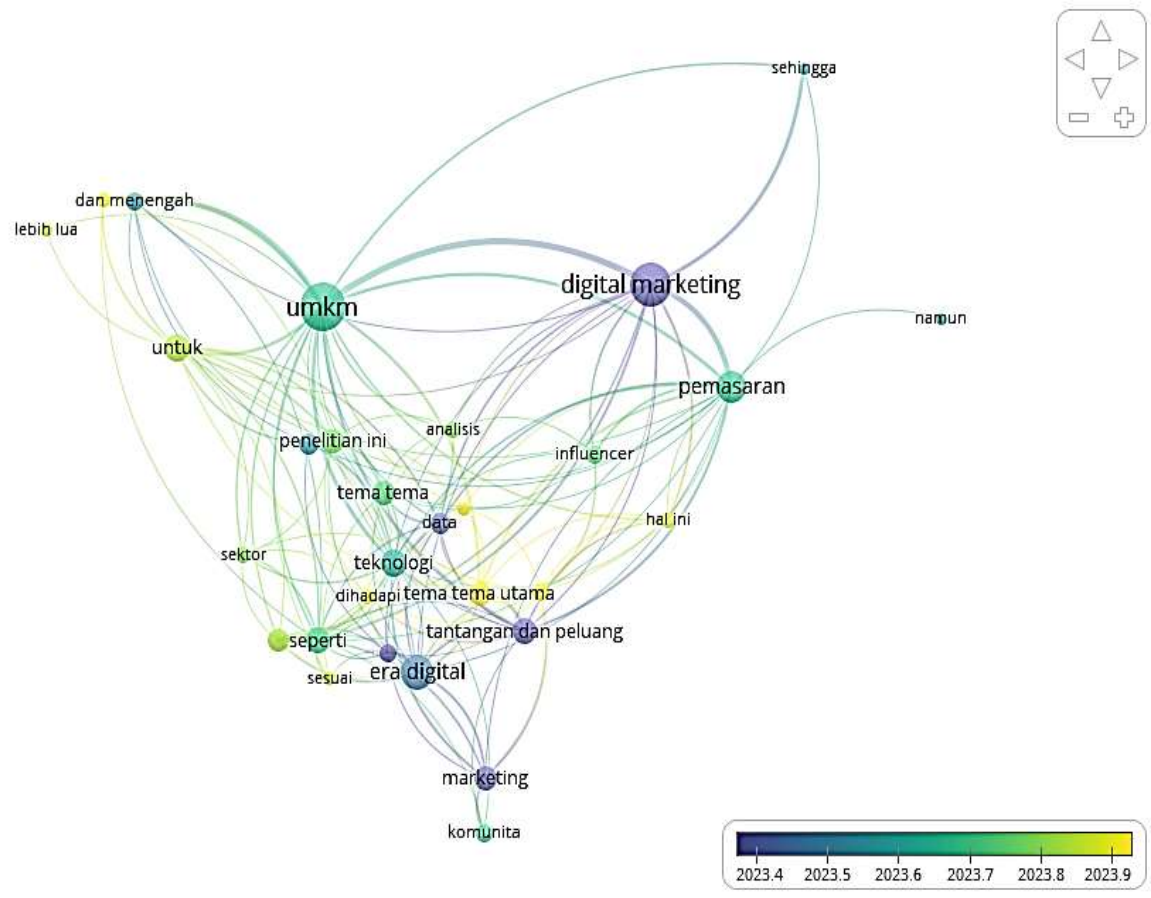


Figure 6. Timeline Visualization Related to Digital Marketing

The timeline visualization in Figure 6 depicts the development of digital marketing research over the past nine years. Studies published in 2023 prominently explore how MSMEs implement digital marketing as part of their adaptation to the digital environment. More recent works also begin to address the challenges and opportunities arising from digital transformation, especially related to technology adoption, digital platforms, and data analytics to support marketing effectiveness.

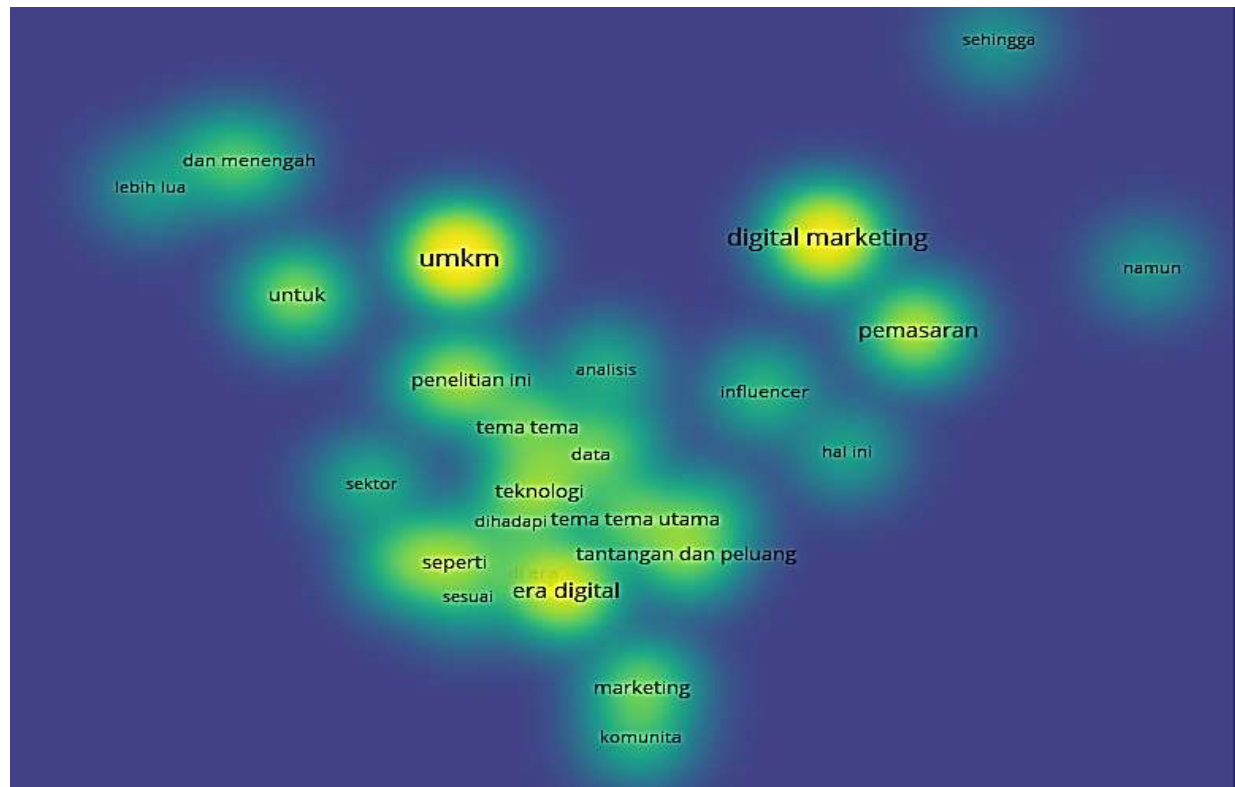


Figure 7. Density Visualization of Topics Related to Digital Marketing

Finally, Figure 7 presents a density map showing research areas that remain underexplored. The lighter-colored keywords in the visualization indicate topics with limited scholarly attention. Although some highlighted words function only as connectors, the visualization still illustrates several conceptual gaps that future research could investigate, particularly topics that have not been examined widely in existing Google Scholar-indexed publications within the past nine years.

CONCLUSION

The bibliometric analysis conducted in this study shows that there are 500 publications with 5,422 citations and an annual citation rate of 542 discussing digital marketing. The keyword density mapping reveals four interconnected thematic clusters that illustrate the structure of current digital marketing research.

The first cluster highlights MSMEs as the primary focus of numerous studies. The recurring keywords—such as MSMEs, sector, and small and medium enterprises—reflect the substantial scholarly interest in how MSMEs adopt digital marketing strategies to enhance competitiveness in the era of digital transformation.

The second cluster centers on digital marketing strategies, represented by keywords such as digital marketing, marketing, influencer, and marketing strategies. This cluster emphasizes discussions on how digital tools, communication technologies, and strategic marketing approaches expand business reach and strengthen consumer engagement.

The third cluster underscores the digital era and technological context, with important terms such as digital era, technology, challenges and opportunities, and main themes. This cluster indicates that shifts in consumer behavior and technological advancements significantly influence the formulation of modern marketing strategies while simultaneously creating new challenges and opportunities for businesses.

The fourth cluster relates to methodological and conceptual contributions in digital marketing research. Keywords such as this research, analysis, data, and themes signal the growing academic interest in mapping research patterns and understanding knowledge development in the field.

SUGGESTION

Overall, the density visualization indicates that digital marketing, MSMEs, and the digital era form a tightly connected triad of central themes. This suggests that current research not only focuses on the practical application of digital marketing strategies but also on how MSMEs navigate technological advancements and leverage emerging opportunities within the digital transformation landscape to maintain business sustainability.

CREDIT AUTHORSHIP CONTRIBUTION STATEMENT

Riski Sugiarti: Conceptualization, Data curation, Formal Analysis, Project administration, Resources, Software, Visualization, Writing – original draft, and Writing – review & editing. **Siti Mujanah and Achmad Yanu Alif Fianto:** Supervision and Validation.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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DATA AVAILABILITY

Data will be made available in request.

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