

Digitalization and International Digital Marketing: A Review and Research Agenda

ANABELA SILVA ^a, CATARINA LOURENÇO ^a, LÍDIA LEITÃO ^a,
RENATO MARQUES ^a, MARCO PROENÇA ^b, FABIANE MENESES ^c

^a Polytechnic Institute of Coimbra, Technology and Management School of Oliveira do Hospital, Oliveira do Hospital, Portugal; ^b ISTAR-ISCTE-IUL (Information Sciences, Technologies and Architecture Research Center do ISTE Instituto Universitário de Lisboa), Lisboa, Portugal, ^c ISCTE-IUL (Instituto Universitário de Lisboa), Lisboa, Portugal.

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ABSTRACT

With the growing need for digitalization in international marketing, this article explores how digital transformation facilitates the interaction between producers and consumers, promoting the introduction of products and services into the global market in a more efficient and cost-effective way. Digital technologies can assist processes, reduce costs, increase competitiveness and enable entry into new markets, although international expansion requires cultural adaptation, regulatory compliance and outperforming competitors. To examine these issues, a bibliometric analysis was conducted using the Scopus database, with articles selected according to rigorous criteria and covering the period of the last 20 years. Despite the transformative role of digitalization, the literature presents gaps regarding SMEs' adaptation of digital strategies to multicultural markets and the impact of digitalization on consumer confidence. The literature review highlights the fragmentation of research on digitalization and international digital marketing, reinforcing the need for a comprehensive synthesis. This analysis maps the scattered knowledge, proposing an agenda for future research and contributing to a deeper understanding of the intersection between digitalization and international marketing.

Keywords: Digitalization; International Marketing; Digital Transformation; Internationalization; Bibliometric Analysis.

JEL Codes: M31

I. Introduction

DIGITAL TRANSFORMATION has brought with it a notable trend towards socialization, especially on social media and other digital media. Therefore, it is crucial for companies to adopt an active presence in these media, implementing marketing strategies appropriate to this virtual environment (Kuzmin et al., 2022). The concept of

digitalization refers to the use of digital technologies and infrastructures in companies, society and the economy in general. By using these digital technologies, companies can add value to their businesses (Rowan, 2023). In the digital age, the interaction between producers and consumers has become easier, increasingly reducing the distance in the distribution chain. The introduction of products and services with the help of digitalization is revolutionizing the market and making prices more affordable (Porter & Heppelmann, 2014). In the context of the digitalization of international logistics networks and marketing channels, business objectives require a theoretical approach, based on the development of planning strategies. This factor is particularly relevant in light of globalization and the gradually expanding economic connections that are creating a culminating integration of digital platforms at all stages of the process (Barykin et al., 2021).

Today, for companies to achieve a strong competitive advantage, they will need to invest in the digitalization of their business. Digital transformation requires the adoption of advanced technologies, which is the only way to modernize processes and create growth opportunities (Westerman et al., 2014). This will enable them to create strong planning strategies and support their decision-making. Investing in this technology can also help reduce costs, increase competitiveness, expand the market and ensure labor productivity, as well as resource efficiency. If companies know how to take advantage of the implementation of digitalization, they can produce and market their products and/or services globally, with the help of low-cost digital platforms, without wasting much of the company's valuable time (Arthur et al., 2024). Digitalization transforms traditional marketing channels by enabling companies to use real-time data to adjust campaigns and target audiences more precisely. This includes the transition from traditional media-based campaigns to personalized and interactive digital strategies, using social media platforms to strengthen direct relationships with consumers and optimize global reach (Dwivedi et al., 2021; Rowan, 2023). In addition to these benefits, digitalization directly impacts business processes by optimizing value chains and promoting automation, resulting in cost reduction and greater operational efficiency. A clear example is the use of technologies such as blockchain to ensure transparency and security in digital transactions, which is especially relevant for companies expanding internationally (Barykin et al., 2021; Iansiti & Lakhani, 2017). However, despite the importance of marketing strategies appropriate for the digital environment, there are specific challenges in international adaptation that companies face when expanding their businesses to international markets, namely issues such as cultural adaptation, regulatory differences, and local competition (Rowan, 2023). Given the growing relevance of digitalization for the success of international marketing strategies, it is essential to understand the specific contexts and key factors that influence its implementation and impact (Ramos et al., 2024). Below, we explore these aspects to provide a comprehensive understanding of the intersection between digitalization and international marketing.

A. Context of digitalization and international marketing

The effects of digitalization on international marketing allow for the renewal of different business sectors, improving their production (Katsikeas et al., 2020). It also contributes to solving problems encountered within different business activities and to the collection of mass data, which allows for more complete and detailed analyses (Rowan, 2023). Digital innovations have a transformative role in several business sectors, including international marketing. The introduction of modern technologies, such as digital platforms and digital financial innovations (mobile banking and digital credit platforms), can increase the efficiency, transparency and traceability of products, as well as opening up new markets and increasing consumer confidence (Arthur et al., 2024). Thus, in international marketing everything is made easier and helps companies to better understand international markets and adapt their strategies (Khan et al., 2022). Furthermore, digitalization contributes to the training and development of skills for professionals, allowing them to adopt and use new technologies effectively (Arthur et al., 2024). Therefore, the integration of digital technologies is fundamental to renewing and improving different business sectors, from production to marketing and financing, maximizing the benefits of digital innovations and overcoming social, economic, political and institutional barriers (Rowan, 2023).

B. Analysis of digitalization and international marketing reviews

Within the topic under study, two literature reviews were identified. The analyses of the reviews generate in-depth insights into the topics, namely, “digitalization”, “marketing”, “digital marketing” and “international marketing”. Table 1 summarizes the articles that focus on this topic.

Table 1: Articles related to the topic under study.

Article	Objective of the Review	Study Period	No. of Papers	Methods	Contribution
Arthur et al., 2024	Highlight the potential of digital innovations in agribusiness.	2020-2023	47	Bibliometric analysis	Digital innovations in the agricultural value chain; training and skills development through digital innovations; digital financial innovations in agribusiness; precision digital innovations.
Khan et al., 2022	Presence of digital sources in the international market.	-	1,900	Textual analysis and concept mapping	Percussions of digital sources in international marketing.

Current reviews address different perspectives on the topic under study, but offer a limited view of the literature, limiting global knowledge about the topic and its evolution over time. The reviews available focus on digital innovations in the agribusiness industry (Arthur et al., 2024) and the role of digital sources and their repercussions on

international marketing (Khan et al., 2022). However, studies on digitalization and international digital marketing are fragmented and do not identify the most studied and emerging themes (Donthu et al., 2021; Paul & Criado, 2020), revealing a theoretical limitation in the connection between the themes examined, as well as in the identifying the flaws and defining an agenda for future studies. This scenario requires a review that includes the evolution of the topic and contributes to its sustained evolution. A literature review can advance research on the topic by highlighting the most studied topics and gaps in the literature (Moro et al., 2023; Webster & Watson, 2002). Furthermore, it allows researchers to monitor the state-of-the-art research in the field and align their studies with identified trends and gaps (Rowe, 2014). Therefore, this literature review aims to contribute to research on digitalization and international marketing by filling the identified gap and synthesizing the literature on the topic.

C. Importance of the study

The literature available has extensively examined the impacts of digitalization and international digital marketing. However, the abundance of publications resulted in fragmented research on the topic, highlighting the need for a comprehensive review of the topic.

More specifically, it is crucial to offer an insight into the hidden data. Using data collected from the Scopus database, this study performs a bibliometric analysis to map fragmented knowledge (Biscaia et al., 2024; Ramos & Rita, 2024). The hope is that this study can offer a significant conceptual contribution to researchers in the search for literature and academic information, by recognizing the research gaps and providing guidance for a future study agenda (Boell & Cecez-Kecmanovic, 2014). The main objective of this review focuses on analyzing and driving advances in research on digitalization and international digital marketing. Bibliometric analysis helps to understand the structure of citations, as well as identify pertinent sources, authors and relevant articles, in addition to checking the occurrence of keywords used by authors (Omran et al., 2024).

Through a combination of methods, the current study aims to offer a broad and detailed overview of the current research landscape on digitalization and international digital marketing, exploring the following research questions:

RQ1: What is the knowledge structure in place about digitalization and international digital marketing (i.e. publication structure, citation and authors)?

RQ2: What are the current research trends in the retrospective research agenda?

RQ3: What are the possible avenues for prospective research on digitalization and international digital marketing?

This study aims to help understand digitalization and international digital marketing, providing insights into the sector's current challenges and possible pertinent questions for developing future studies.

II. Methodology

A. Search strategy

In order to select the most relevant documents according to the research topic, we used the Scopus database. Scopus is a repository that brings together abstracts and citations of online scientific literature, used as comprehensive support for bibliographic research (Guz & Rushchitsky, 2009). It includes 91 million publications and has more comprehensive coverage than other databases, such as the Web of Science (Elsevier, 2023; Santos et al., 2022). Additionally, this approach is in line with other bibliometric reviews (Ramos et al., 2019; Rita & Ramos, 2022) and follows the recommendation of the cited article to use only one database in order to reduce possible human errors during data analysis (Donthu et al., 2021). However, we recognize that the exclusion of other databases, such as the Web of Science (WoS), may limit the scope of some specific studies and introduce a selection bias. Variations of the terms, namely digitalization (e.g., digital transformation), internationalization and marketing (e.g., international and marketing or international marketing), globalization (e.g., global), and e-marketing were used to conduct the search. These terms were selected based on several works of literature, namely (Battisti & Christofi, 2023; Leão & da Silva, 2021; Matt et al., 2023; Sheth & Sharma, 2005). The names of the authors, title and year of publication of the article, keywords, abstract, source title, and citation count were collected from each paper.

B. Search and selection criteria

The survey was conducted on March 4, 2024, covering publications from 2005 to 2024. It was possible to capture almost two decades of advances at the intersection between digitalization and international marketing, allowing a longitudinal analysis of emerging trends in the field. The search was restricted to the title-abstract-keywords field, English language and journal articles. Journal articles were chosen due to their academic recognition, as they contain the most advanced and up-to-date knowledge (Kim & So, 2022; Rojas-Lamarena et al., 2022). The search returned 130 articles, only in English, which were collected in a CSV file.

Considering the objective of the present study, each author independently analyzed all the titles and abstracts of the articles collected to determine their eligibility. A color method was used to select the articles that were aligned with the theme under study. The articles were initially classified by color coding: 'green' for approved, 'yellow' for not likely and 'red' for not approved. However, in addition to simple categorization by color, rigorous criteria were applied to ensure the relevance and quality of the selected references. Articles that were excluded presented one of the following characteristics: (1) they were not directly aligned with the theme of digitalization and international marketing; (2) they contained methodologies or results that were not relevant to the focus of the study; or (3) they were outdated publications that did not reflect recent practices and technological advances. At the end of this individual selection, the various opinions were compared. When the opinions were mostly green or red, the articles were approved or eliminated, respectively. Concerning the articles, where there was a lack of

consensus or some doubt, a discussion was held amongst the authors until a consensus and a final list of documents selected for the research was reached.

C. Final dataset

The final data set includes 107 articles from 67 journals. Following the approach of (Rojas-Lamorenna et al., 2022) the dataset was subject to standardization for good interpretation of the results. Author's names have been revised as they may present different names in different journals (e.g. 'Al-Ababneh, H. Ali' vs. 'Al-Ababneh, H. A.') or may belong to different authors (e.g. 'Ramos , M ' for 'Ramos Mabel') vs. Author keywords were also reviewed and changed to singular (e.g., 'innovations' to 'innovation') and from British English to American English (e.g., 'behavior' to 'behavior').

D. Data analysis

Bibliometric analysis was applied to analyze the data. This analysis allows for a quantitative analysis of the bibliographic material considered to be objective and reliable, in particular performance analysis and scientific mapping (Donthu et al., 2021). In performance analysis, which measures the productivity and scientific impact of publications, authors, institutions and countries, the number of publications and citations were analyzed longitudinally, as well as the most productive journals and authors and the most relevant articles. In scientific mapping, which visualizes the connections and networks between different themes, authors and institutions within field of research, it analyzes the co-occurrences of keywords, co-authorships and citations to identify the main research areas, emerging trends and the relationships between them. Co-occurrence analysis was performed using the authors' keywords. The experiments were performed in the statistical analysis software 'r' using the 'bibliometrix' package (Aria & Cuccurullo, 2017).

III. Results and Discussion

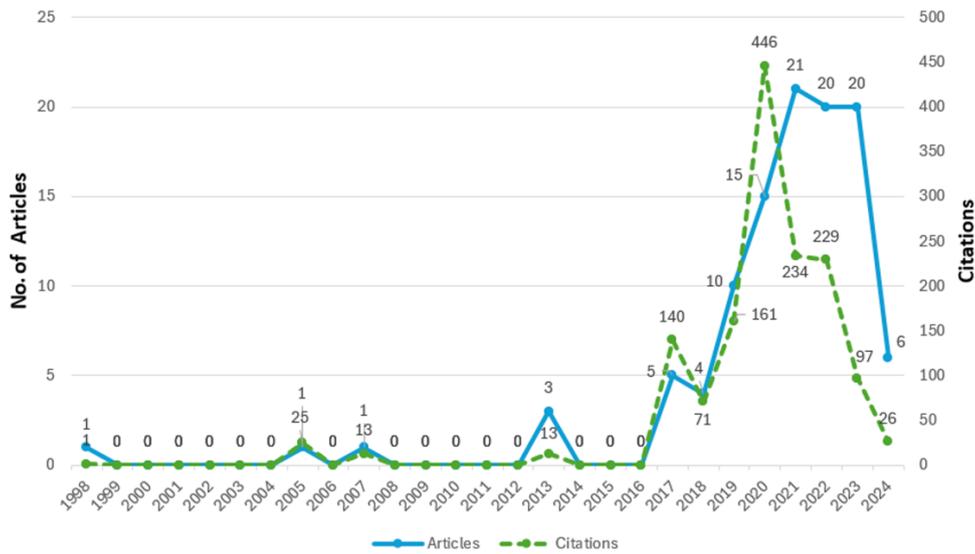
A. Structure of publications and citations

In Figure 1, data corresponding to the number of articles and citations made per year on the topic of digitalization and international digital marketing are represented. One of the most common and objective ways to evaluate the impact of an article is through the number of citations (Stremersch et al., 2007). In the period from 1998 to 2016, the number of articles was limited, totaling only six articles in that period. From 2017 onwards, the number of articles began to increase substantially, reaching a peak in 2021, with 21 articles published. This result reveals that the topic under study has captured the interest of academia, proving to be a topic of interest.

The number of annual citations followed the number of articles published. In 2020, the number of citations peaked at 446 citations. This year's result is due to articles by Li et al. (2020), with 152 citations, and by Dethine et al. (2020), with 63 citations.

The article by Li et al. (2020), addresses Asia's digital economy and the changes caused by the high growth in technology implementation.

Figure 1
Number of articles and citations per year.



Thus, we can say that digitalization has been a significant driving force in global economic growth, especially in the context of the digital economy, offering a series of advantages that contribute to sustainable economic development. This topic is particularly relevant to our study due to the interconnection between digitalization and international marketing, areas that complement and boost each other.

The digital economy, which includes technologies such as the internet, big data, 5G and artificial intelligence, accelerates deep integration with diverse industries, transforming the way economies operate. Digitalization contributes positively to economic growth by promoting the updating of the industrial structure, increasing the efficiency of production factors and even through the creation of new employment opportunities (Li et al., 2020). It should be taken into account that the 2024 results contain few articles and citations, as data collection took place at the beginning of this year. However, it already has six articles published and 26 citations.

B. Source impact

Table 2 reveals the ten journals with the greatest impact of the 107 articles that were analyzed. The ten journals were cited 545 times, an average of 54.5 citations per journal.

This study focuses on digitalization and international digital marketing, areas that are central to sustainable economic development. Sustainability magazine regularly publishes articles that examine how digitalization can contribute to economic and social sustainability, thus promoting more efficient and responsible business practices. The magazine also explores ways and means of using digital technologies, such as artificial

intelligence and big data, to improve resource efficiency, reduce waste and increase productivity, which are essential factors for sustainable economic growth for companies.

Table 2: Differences between age groups for items in 2023.

Sources	No. of Articles	SJR	TC	h-index	g-index	m-index
<i>Sustainability</i> (Switzerland)	6	Q1	145	5	6	1.25
<i>Problems and Perspectives Management</i>	5	Q2	15	3	3	0.429
<i>European Research Studies Journal</i>	2	Q2	63	2	2	0.25
<i>Frontiers in Psychology</i>	2	Q2	23	2	2	0.5
<i>International Marketing Review</i>	2	Q1	87	2	2	0.1
<i>Journal of Management and Governance</i>	2	Q1	36	2	2	0.5
<i>Journal of Open Innovation: Technology, Market, and Complexity</i>	2	Q1	44	2	2	0.333
<i>Technology Innovation Management Review</i>	2	Q2	68	2	2	0.4
<i>Virtual Economics</i>	2	Q1	60	2	2	0.667
<i>Eastern-European journal of enterprise technologies</i>	2	Q3	4	1	2	0.125

This thematic alignment confirms and emphasizes the relevance and connection of *Sustainability* as a platform that supports technological innovation in the digital economy (Jiao & Sun, 2021; Zhang et al., 2022). The journal also addresses the importance of digital technologies in the expansion of international markets, reinforcing its relevance to our study.

Sustainability stands out, similarly, with its metrics, that is, with high h and g indices, thus reflecting its academic influence, being the one that published the most articles, contributing with 6 articles, suggesting its importance in understanding digitalization and international marketing. With a significant number of articles published and cited in the area of digitalization and international digital marketing, the journal proves to be an essential reference source for researchers and professionals interested in these topics. Thus, the link between *Sustainability* and the topic under study is clear and strong, and it is considered a platform for disseminating research that explores the intersection between digitalization and sustainability, providing valuable insights for sustainable economic development and international digital marketing (Bornmann et al., 2008; Hirsch, 2005; Jiao & Sun, 2021).

The second most productive journal is *Problems and Perspectives in Management*, with five articles. This journal, published by Business Perspectives, addresses management, economics and business issues, focusing on empirical studies and practical cases. This alignment is relevant to our study as it explores how digitalization is transforming management practices and global marketing strategies. In this way, Business Perspectives stands out for its significant contribution to the area, reflected in

its impact metrics and citations, and is thus being considered an essential source for research on innovation in business management through digitalization and international marketing (Bornmann et al., 2008; Hirsch, 2005; Jiao & Sun, 2021).

Together, these two journals represent 16% of the articles out of the 107 articles from the 67 magazines analyzed, which reflects their prominent position in the context of digitalization and international marketing. *Sustainability* (Switzerland) and *International Marketing Review* have the highest number of citations, which reinforces their importance for the area under study.

According to the number of articles published, *Sustainability* has the highest h and g indices, which highlights its strong influence and impact on the study of digitalization and international digital marketing. The Hirsh index (h-index) is the proposal to quantify the productivity and impact of the journal, considering the number of articles and citations per publication (Hirsch, 2005). The g index aims to measure the performance of journals, considering the evolution of citations of the most cited articles over time. Finally, m-index, also called m-quotient, considers the h-index and the time since the first publication (n); thus, $m\text{-index} = h\text{-index}/n$ (Bornman et al. 2008).

The first relevant article published on digitalization and international digital marketing was in 1998. Since then, research in this area has grown substantially. *Sustainability* (Switzerland), which published its first article in this area in 2001, has already contributed with six significant articles. This fact highlights the magazine's rapid recognition and commitment to research in digitalization and international marketing.

The first article published by *Sustainability* (Switzerland) "Supply chain and agricultural management coupled with blockchain effect and cooperative strategies" by Alkahtani et al. (2021), addressed the integration of digital technologies into marketing strategies and the impact of these technologies on corporate sustainability. This first paper laid the foundations for subsequent research exploring how digital technologies can be used to improve resource efficiency, reduce waste and increase productivity.

Furthermore, it is important to highlight the quartiles of the journals listed in Table 2. Within the top ten journals that published the most articles on the topic, five are classified as Q1. This result suggests that the topic under study has reached the interest of the most reputable journals, reflecting the relevance and quality of research in this area. Magazines classified as Q1 are recognized for their impact, which emphasizes the importance of the topic of digitalization and international digital marketing today. These publications increase the visibility of the topic and significantly contribute to the advancement of knowledge and business practices in this area.

C. Most cited articles

Table 3 characterizes the ten most cited articles on digitalization and international marketing. The number of citations indicates the relevance of articles and their influence on the development of a field of study (Donthu et al., 2021). The work of Li et al. (2020) was the most cited, with 152 citations. This article focuses on the digital economy in Asia, highlighting its influence on businesses and society, driven by technology and information. It explores technological innovation, government policies and new value chains in global production. It also discusses the digital economy and societies index, in

addition to the implications of the COVID-19 pandemic. The topic is also addressed in other cited articles, such as Awan et al. (2022) and Shkarlet (2020). According to Awan et al. (2022), the circular economy and value chain activities are explored, with an emphasis on the impact of emerging digital technologies. The authors analyze the reorganization of companies' business models in order to align with value chain activities, highlighting the importance of integrating Industry 4.0 and the circular economy to promote more sustainable development in the global economy.

Table 3: The ten most cited articles.

Article	Title	Journal	TC	Average TC per year
Li et al., 2020	How should we understand the digital economy in Asia? Critical assessment and research agenda	<i>Electronic Commerce Research and Applications</i>	152	30.40
Awan et al., 2022	Designing Value Chains for Industry 4.0 and a Circular Economy: A Review of the Literature	<i>Sustainability</i>	80	26.67
Veiga et al., 2017	Are millennials transforming global tourism? Challenges for destinations and companies	<i>Worldwide Hospitality and Tourism Themes</i>	70	8.75
Vadana et al., 2019	Digitalization of companies in international entrepreneurship and marketing	<i>International Marketing Review</i>	67	13.40
Ullah et al., 2021	Barriers to the digitalization and innovation of Australian Smart Real Estate: A managerial perspective on the technology non-adoption	<i>Environmental Technology & Innovation</i>	65	16.25
Dethine et al., 2020	Digitalization and SMEs' Export Management: Impacts on Resources and Capabilities	<i>Technology Innovation Management Review</i>	63	12.60
Pérez et al., 2021	Strategic orientation toward digitalization to improve innovation capability: why knowledge acquisition and exploitation through external embeddedness matter	<i>Journal of Knowledge Management</i>	57	11.40
Kwilinski et al., 2022	Managing the logistic activities of agricultural enterprises under conditions of digital economy	<i>Virtual Economics</i>	44	14.67
Shkarlet, 2020	Transformation of the paradigm of the economic entities' development in digital economy	<i>Research Gate</i>	42	8.40
Eremina et al., 2019	Digital maturity and corporate performance: The case of the Baltic states	<i>Journal of Open Innovation: Technology, Market, and Complexity (JOITmC)</i>	40	6.67

Shkarlet (2020), discusses how global digitalization is pressuring modern companies to respond quickly to changes in the external environment and adapt their business models in various areas, such as production, promotion, communication, interaction with partners and consumers, among others. The author also mentions the growing

scientific interest in exploring theoretical and practical aspects of the digitalization of the economy, as well as its impact on the characteristics of the functioning of economic entities.

Thus, the most cited authors mentioned in Table 3 discuss the criteria for analyzing the characteristics of classical and digital economic entities, as well as the statistical indicators of the impact of digitalization on business activity. They also highlight the importance of using digital economy tools and identify the advantages and disadvantages of digital transformation for companies. The digitalization of companies not only affects operational efficiency and the value chain but also plays a crucial role in international marketing. Digital transformation allows companies to reach global markets more effectively by adapting their marketing strategies to suit different cultures and local regulations. Finally, the analysis of the most cited articles reveals that digitalization facilitates the internationalization of companies, helping them to overcome cultural and regulatory barriers through the use of digital technologies.

For example, the article by Vadana et al. (2019) examines how digitalization impacts the internationalization and international marketing of companies, showing that the adoption of digital technologies can accelerate the process of entering new markets. Digitization allows for more effective personalization of marketing campaigns, using specific data to better understand consumer behavior in different regions, which is essential for success in international marketing. Thus, the integration of digitalization with international marketing not only enhances the marketing capabilities of companies but also gives them a significant competitive advantage by enabling a stronger global presence adapted to local needs (Vadana et al., 2019).

D. Contributing authors

It is crucial to recognize the authors who contribute most to understanding the structure and growth of the field, as this will have a direct impact on future publications (Ramos et al., 2019). By identifying the authors who contribute most and their published work, it is possible to identify research gaps that guide future research.

Key authors are essential to the structure and growth of the domain and positively influence the articles with the greatest impact publications (Ramos et al., 2019). Therefore, it is imperative to identify them and recognize their impact.

Table 4 characterizes the most productive authors amongst the most influential research articles in recent years.

Table 4: The ten most productive authors.

Authors	No. of Articles	Fractionalized Frequency	TC	h-index	g-index	m-index	Production Year-Start
Hassan Ali Al-ababneh	2	1.2	2	1	1	0.333	2022
Isabelle Collin-Lachaud	2	0.58	2	1	1	0.333	2022
Guillaume Do Vale	2	0.58	2	1	1	0.333	2022

Svetlana Panasenko	2	0.37	2	1	1	0.25	2021
Olha Prokopenko	2	0.33	42	2	2	0.333	2019
Ibragim Ramazanov	2	0.37	2	1	1	0.25	2021
Rita Abban	1	0.5	6	1	1	0.333	2022
Gumataw Kifle Abebe	1	0.5	6	1	1	0.333	2022
Stephen Acheampong	1	0.33	19	1	1	0.5	2023
Iryna Aksonova	1	0.20	5	1	1	0.25	2021

It appears that there are authors with the same level of productivity, but what distinguishes them is the fractional frequency. For example, Hassan Ali Al-Ababneh and Isabelle Collin-Lachaud have both published two articles and have h and g indexes of 1. The h index measures the productivity and impact of an author's published articles. The g-index is similar to the h-index but gives more weight to highly cited articles. A g-index suggests that authors' most cited articles are cited with a frequency that maintains a balance between the number of articles and their citations. However, Hassan Ali Al-Ababneh's fractional frequency is 1.2 while Isabelle Collin-Lachaud's is 0.58. This means that, on average, Hassan Ali Al-Ababneh collaborated on articles with relatively few co-authors. For example, if all of your articles had two authors, you would receive 0.5 points per article, resulting in a total fractional frequency of 1.0. A fractional frequency of 1.2 suggests that he may have had some articles with fewer coauthors or may have been the lead author on articles with fewer coauthors. Isabelle Collin-Lachaud's fractional frequency indicates that she collaborates on articles with more authors. For example, if all of her articles had three authors, she would receive 0.33 points per article, resulting in a fractional frequency of about 0.66. The frequency of 0.58 suggests regular collaboration in articles with multiple co-authors (Hagen, 2013).

Professor Hassan Ali Al-Ababneh is one of the most prolific authors, with two articles published since 2022, featuring an h-index of 1, g-index of and m-index of 0.333. Professor Hassan's research focuses on topics that reflect a notable impact on the field, as evidenced by his citation metrics. The most cited article by Professor Hassan Ali Al-Ababneh (2023), explores how implementing digital technologies can improve business operations. The study demonstrates that digitalization facilitates process automation, reduces costs and increases global competitiveness. Using case studies and empirical analyses, the article highlights the importance of decision-making based on real-time data and predictive analysis, showing how these practices can better position companies on the international stage. This article is relevant to the study of digitalization and international digital marketing, providing practical examples and valuable lessons for the adoption of digital technologies.

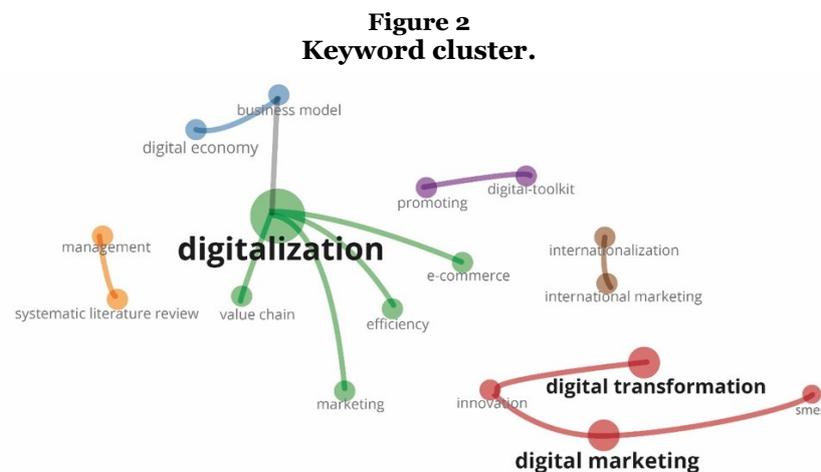
Professor Isabelle Collin-Lachaud is a recognized academic in the field of digital marketing and business communication. With two articles published, it has h and g indexes of 1 and an m-index of 0.333. Fractional analysis indicates a frequency of 0.58,

suggesting frequent collaborations with other authors. The author's research projects center on the use of digital technologies in marketing and communications, focusing on how companies can use digital platforms and social networks to improve the effectiveness of their campaigns and engage consumers. Professor Collin-Lachaud's research provides a valuable understanding of digital marketing strategies, contributing significantly to the field of digitization and digital marketing.

Authors such as Guillaume Do Vale, Svetlana Panasenko and Olha Prokopenko also stand out, with two articles each and notable citation indices. For example, Prokopenko, with a total of 42 citations, has an h and g index of 2, and an m index of 0.333, reflecting a considerable impact since 2019. Other authors, such as Rita Abban and Gumatow Kifle Abebe, although they only have one article each, they have a fractional frequency of 0.5, and h and g indices of 1. This level of collaboration and impact demonstrates the importance of co-authorship and synergy between researchers in advancing knowledge in the area.

E. Analysis by word co-occurrence

The co-occurrence analysis of keywords used by the authors, presented in Figure 2, aims at designing connections and outlining the relationship between current search trends and academic marketing articles with the best reputation, through the relationship of these keywords with the set of data removed.



The larger words correspond to a greater number of articles related to that keyword. On the other hand, the thicker the link between the keywords, the stronger the link between them. The size of each link indicates its frequency of occurrence.

In the schematic map we can see 17 keywords and 6 clusters, of which “Digitalization” (green) and “Digital Marketing” (red) stand out. On the other hand, the less prominent nodes are “Digital economy and business model” (blue), “Management and systematic literature review” (orange) and “Promoting and Digital-toolkit” (purple).

The green cluster, called Business Digitalization, focuses on "digitalization" and encompasses concepts such as "value chain", "efficiency", "e-commerce" and

"marketing". These terms highlight the role of digitalization in transforming business processes and optimizing operational efficiency, promoting systems integration and automation to reduce costs (Parida et al., 2015). In the area of e-commerce, it facilitates transactions and market expansion, while in marketing, it enables targeted campaigns (Kraus et al., 2019).

The digital transformation and marketing cluster encompasses concepts such as "digital transformation", "digital marketing" and "innovation", reflecting the connection between these practices and the competitiveness of SMEs. By integrating digital technologies, SMEs can compete with larger companies and access new markets (Clohessy et al., 2017). Social networks play a key role, enabling direct interaction with consumers and the personalization of campaigns (Dwivedi et al., 2021). This is essential for effective branding and for using specific data to optimize marketing strategies, facilitating global reach and advanced market segmentation (Kannan & Li, 2017).

The blue cluster, named Digital Economy and Business Models, is represented by the "digital economy" and "business model". This cluster highlights the evolution of business models in the digital era, where digital technology redefines the creation, delivery and capture of value (Bouwman et al., 2019).

The keywords in these clusters are interrelated because they all reflect different but complementary aspects of the impact of digitalization and digital transformation on business and the economy. Digitalization improves efficiency and expands e-commerce capabilities, while digital transformation enables companies, especially SMEs, to adapt quickly and innovate. Digital marketing, supported by social networks, facilitates global communication and personalization of campaigns, while the digital economy redefines business models and creates new market opportunities.

In the context of the study, these interrelationships are crucial to understanding how companies can use digitalization and digital transformation to improve efficiency, innovate and compete in a global market. The most recent references support these claims and highlight the importance of technological adoption for contemporary business success.

IV. Emerging topics in digitalization and international marketing

In this analysis, we can consider new technologies and practices that promise to redefine international digital marketing, offering new opportunities and challenges for industrial theory and practice. Artificial Intelligence (AI) and Machine Learning (ML) have the ability to transform the analytical basis in digital marketing, enabling detailed segmentation and personalization on a large scale. Theoretically, these technologies reinforce the importance of behavioral analysis models, while expanding the possibilities of segmentation and targeting in multicultural contexts. Industrially, AI and ML offer international companies an advantage by adapting campaigns to specific cultural preferences, increasing campaign effectiveness and improving the consumer experience (Brynjolfsson & McAfee, 2014).

The introduction of blockchain in digital marketing identifies and strengthens security and trust in online transactions. From a theoretical point of view, it changes the

way trust is managed in digital environments, proposing a decentralized structure for data security and greater reliability in transactions. For the industry, this technology improves transactions and product tracking, which is crucial for international digital marketing in regions with different security regulations (Iansiti & Lakhani, 2017; Tapscott & Tapscott, 2016). The increasing data collection in digital marketing also requires a new theoretical approach to privacy and ethics in the use of data. This issue demands a critical analysis of data governance and corporate responsibility. The implementation of strict privacy policies is essential to maintain consumer trust and adapt to international regulatory requirements (Acquisti et al., 2015; Bélanger & Crossler, 2011). Augmented Reality (AR) and Virtual Reality (VR) bring with them new theoretical concepts of consumer engagement and immersion, expanding the understanding and immediacy of digital consumption experiences. Theoretically, these technologies introduce new parameters for the consumer experience, especially in the context of sales and experiences. In industrial practice, AR and VR enable global companies to offer personalized shopping experiences that cross cultural and physical barriers, increasing customer engagement and retention globally (Dwivedi et al., 2021; Javornik, 2016)

V. Suggestions for future studies

It is clear that digitalization and international digital marketing are interconnected areas that offer countless opportunities and challenges. The analysis revealed several promising directions for future research, highlighting the need to explore emerging technologies, overcome cultural and regulatory barriers, and better understand environmental impact and corporate social responsibility in the context of digital marketing.

Based on the results obtained, future studies could explore the integration of emerging technologies such as artificial intelligence and blockchain in international digital marketing. The impact of these technologies on campaign personalization and consumer data security can be included. Furthermore, it is important to research how digital transformation changes traditional business models in specific sectors. Digital transformation can reconfigure business models, introducing new methods of creating and delivering value. The study by Clohessy et al. (2017) highlights that the adoption of digital technologies can lead to disruptive innovations in traditional sectors.

Another important point is the analysis of the cultural and regulatory barriers faced by companies during digitalization and entry into international markets. Research can focus on strategies to overcome these obstacles and adapt marketing strategies to different cultural and legal contexts.

It may also be important to conduct additional research to better understand how SMEs can leverage digitalization to compete on equal terms with large corporations in the international market. So far, there are limited studies that assess the long-term

impact of digitalization on the financial performance of companies in international markets. Business digitalization is an area of study that presents several opportunities for future research. Firstly, it is relevant to examine how the digitalization of the value chain impacts the operational sustainability of SMEs. The integration of digital technologies can increase operational efficiency and reduce costs, crucial aspects for SMEs to compete globally. Studies such as that by Parida et al. (2015) show that digitalization improves productivity and corporate sustainability. Another promising area is the study of the role of personalization in digital marketing campaigns in customer retention. Personalization allows companies to tailor their marketing strategies to consumers' specific needs, increasing customer satisfaction and loyalty, as discussed by Kraus et al. (2019).

Furthermore, it is important to research how digital transformation changes traditional business models in specific sectors. Digital transformation can reconfigure business models, introducing new methods of creating and delivering value. The study by Clohessy et al. (2017) highlights that the adoption of digital technologies can lead to disruptive innovations in traditional sectors.

In the field of digital transformation and marketing, a relevant question is how digital transformation influences innovation in SMEs and their ability to compete in international markets. Digital transformation facilitates innovation by enabling process automation and the use of real-time data analysis. Vial (2021) argues that SMEs that adopt digital technologies can innovate faster and compete effectively in international markets. Another point of research is to identify the challenges faced by SMEs in adopting social media marketing strategies. SMEs often face challenges such as a lack of resources and expertise. Dwivedi et al. (2021) explore the barriers SMEs encounter when trying to implement social media marketing strategies and how they can overcome them. Additionally, it is crucial to understand how the use of specific data optimizes digital marketing strategies. Specific data analysis allows for more targeted and effective marketing campaigns, as demonstrated by Kannan & Li (2017).

Finally, in the context of the digital economy and business models, it is pertinent to examine how digitalization redefines the creation, delivery and capture of value in digital business models. Digitization can transform business models by enabling new ways of interacting and delivering value to customers. Bouwman et al. (2019) discuss how digital technologies are redefining business processes. It is also relevant to study the economic implications of digitalization for SMEs in emerging sectors. Digitalization can provide a significant competitive advantage in emerging sectors by improving efficiency and reducing costs, as highlighted by Schwarzmüller, et al. (2018). Furthermore, it is important to research how systematic literature review can support the formulation of innovative business strategies. Systematic reviews help identify trends and gaps in the literature, guiding future research (Schwarzmüller et al., 2018).

Table 5: Suggestion for future studies (backward-looking).

Cluster	Research questions	Examples of references
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Digitalization and digital marketing	<ol style="list-style-type: none"> 1. How does the digitalization of the value chain impact the operational sustainability of SMEs? 2. What is the role of personalization in digital marketing campaigns in customer retention? 3. How does digital transformation change traditional business models in specific sectors? 	(Clohessy et al., 2017; Kraus et al., 2019; Parida et al., 2015)
Digital economy and business model	<ol style="list-style-type: none"> 1. How does digital transformation influence innovation in SMEs and their ability to compete in international markets? 2. What are the challenges SMEs face in adopting social media marketing strategies? 3. How does the use of specific data optimize digital marketing strategies? 4. What are the economic implications of digitalization for SMEs in emerging sectors? 	(Dwivedi et al., 2021; Kannan & Li, 2017; Vial, 2019)
Promoting and digital-toolkit and management and systematic literature review	<ol style="list-style-type: none"> 1. How does digitalization redefine the creation, delivery and capture of value in digital business models? 2. How can a systematic literature review support the formulation of innovative business strategies? 	(Bouwman et al., 2019; Schwarzmüller, et al., 2018)

To advance the field of digitalization and international digital marketing, it is essential to explore new emerging technologies. One promising area is research into how artificial intelligence and machine learning can be integrated into digital marketing practices to improve market segmentation. Vial (2021) and Brynjolfsson & McAfee (2014) discuss how these technologies can revolutionize digital marketing by allowing more accurate and personalized analysis of consumer data. Another important point is to study the impacts of using blockchain on the efficiency and transparency of e-commerce transactions. Blockchain technology can increase the transparency and security of online transactions, which is essential for consumer (Iansiti & Lakhani, 2017; Tapscott & Tapscott, 2016).

Furthermore, it is relevant to examine how augmented reality (AR) and virtual reality (VR) can be used to improve the online shopping experience. AR and VR can provide immersive shopping experiences, increasing customer engagement (Dwivedi et al., 2021; Javornik, 2016). Another interesting area is incorporating gamification into digital platforms to increase customer engagement. Gamification can make interactions more attractive and interactive (Deterding et al., 2011; Hamari et al., 2014).

When it comes to digital risks, it is crucial to analyze best practices for mitigating cyber risks in highly digitalized companies. Cyber risk mitigation involves implementing robust security measures and ongoing employee training (Böhme et al., 2015; Bouwman et al., 2019). Additionally, it is important to understand how data privacy policies impact consumer trust in e-commerce platforms. Clear and strict privacy policies are essential

for gaining and maintaining consumer trust (Acquisti et al., 2015; Bélanger & Crossler, 2011).

These suggestions for future research, based on existing literature, highlight the continued relevance and need to extend the understanding of digitalization and international marketing, addressing both the exploration of emerging technologies and the mitigation of associated risks.

Table 6: Suggestion for future studies (forward-looking).

Gaps	Research questions	Examples of references
New emerging technologies	1. How can artificial intelligence and machine learning be integrated into digital marketing practices to improve market segmentation?	Question 1 - (Brynjolfsson & McAfee, 2014; Vial, 2019).
	2. What are the impacts of using blockchain on the efficiency and transparency of e-commerce transactions?	Question 2 - (Iansiti & Lakhani, 2017; Tapscott & Tapscott, 2016).
	3. How can augmented reality (AR) and virtual reality (VR) be used to improve the online shopping experience?	Question 3 - (Dwivedi et al., 2021; Javornik, 2015).
	4. How can gamification be incorporated into digital platforms to increase customer engagement?	Question 4 - (Deterding et al., 2011; Hamari et al., 2014).
Digital risks	1. What are the best practices for mitigating cyber risks in highly digitized companies?	Question 1 - (Böhme et al., 2015; Bouwman et al., 2019).
	2. How do data privacy policies impact consumer trust in e-commerce platforms?	Question 2 - (Acquisti et al., 2015; Belanger & Crossler, 2011).

V. Conclusions

Through this study, we aim to answer three main research questions: What is the knowledge structure in place about digitalization and international digital marketing? What are the current research trends and the retrospective research agenda? What are the possible paths for prospective research on digitalization and international digital marketing?

This study revealed that the knowledge structure in this area comprises various articles that explore different aspects of digitalization and digital marketing in international contexts. The bibliometric analysis identified that the main contributions come from academic journals such as *Sustainability* (Switzerland) and *International Marketing Review*, which have a significant impact in this area. The most cited authors and most frequent keywords highlight the importance of social media, e-commerce and technological innovations in shaping international digital marketing.

Current research trends show a significant increase in the number of publications since 2016, indicating a growing interest in the topic covered. The research mainly focuses on the integration of digital technologies in agribusiness, the challenges and

opportunities of digitalization for SMEs, and cultural and regulatory barriers in international marketing. The retrospective research agenda suggests an evolution in understanding how digitalization can improve the efficiency and competitiveness of companies in global markets. Previous research also highlights the need for customized marketing strategies for different international markets.

Future research should explore the integration of emerging technologies such as artificial intelligence and blockchain in international digital marketing. It is also crucial to analyze the environmental consequences of digitalization and how digital marketing practices can be aligned with environmental sustainability goals. Another promising field is the intersection between international digital marketing and corporate social responsibility, examining how companies can use digital tools to advance their Corporate Social Responsibility initiatives. Furthermore, longitudinal research is needed to assess the long-term impact of digitalization on the financial performance of companies.

Implications for theory

This study contributes to the literature by providing a comprehensive overview of the intersection between digitalization and international digital marketing, highlighting how these areas can be integrated to create more effective business opportunities and marketing strategies.

The bibliometric analysis performed provides a detailed understanding of current research trends and helps identify gaps in the literature, providing a solid foundation for future studies. The relationship between digitalization and efficiency in the value chain, as shown in studies on agribusiness, can be extrapolated to other sectors, indicating digital innovations as being crucial for global competitiveness among companies.

Limitations

A limitation of this study is the dependence on data from a single database, Scopus, which may limit the scope of the articles analyzed. Future studies could include other databases for broader coverage. Another point to be considered is that the analysis focuses mainly on articles written in English, which may exclude important contributions from research published in other languages.

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