KNOWLEDGE MANAGEMENT AND ICT AS DIGITAL MARKETING TOOLS IN BUSINESS ADMINISTRATION

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Abstract
A documentary review was carried out on the production and publication of research papers related to the study of ICT variables and Digital Marketing. The purpose of the bibliometric analysis proposed in this document was to know the main characteristics of the volume of publications registered in the Scopus database during the period 2017-2022, achieving the identification of 145 publications. The information provided by this platform was organized through graphs and figures categorizing the information by Year of Publication, Country of Origin, Area of Knowledge and Type of Publication. Once these characteristics have been described, the position of different authors towards the proposed theme is referenced through a qualitative analysis. Among the main findings made through this research, it is found that India, with 21 publications, was the country with the highest scientific production registered in the name of authors affiliated with institutions in that country. The Area of Knowledge that made the greatest contribution to the construction of bibliographic material referring to the study of knowledge management and ICT within Digital Marketing, was Computer Science with 59 published documents, and the Type of Publication most used during the period indicated above was the Conference Articles with 52% of the total scientific production.
Keywords: Knowledge Management, ICT, Digital Marketing, Business Administration.

1. Introduction

Digital Marketing currently comprises a trend that meets the needs of both companies and consumers, to carry a message through existing technological tools. It arises as a response to the advances in electronic resources that globalization itself has sought, where the management of information increasingly migrates to digital scenarios. Therefore, marketing efforts for companies have focused on the use of tools such as social networks, email, advertising in digital media, web pages, among others, which manage to serve an increasingly defined audience in terms of their classification according to selection parameters. The processes by which companies manage to direct their advertising strategies, are based on the analysis of a whole series of data collected from different sources, for example, social networks, clearly mark what are the tastes, interests and needs that users have, so the classification of the niche market is easier to interpret, allowing bidders to allocate advertising campaigns with a higher percentage of success to those who show in some way interest in their products and/or services. For management, it is vitally important to know the tastes, interests, needs and desires of consumers who provide large amounts of information, which is an important input for the design of marketing strategies so the management of this information, represents for the administration, a great effort. Therefore, it has been possible to demonstrate the support that organizations have had in technological resources for knowledge management, tools for processing large volumes of data based on the principles of BigData. This is an important step in the design of advertising strategies through digital media, since, by analyzing the data collected by Information Systems, it is possible to transform them into timely information regarding consumers and their needs. Therefore, it is possible to affirm that it is important to know, on the part of the scientific community, what are the contributions that have been carried out since the generation of new knowledge regarding the analysis of the impact that ICT tools and Knowledge Management in Digital Marketing strategies as a cornerstone in the decisions taken by the administration in organizations. Thanks to this, this article presents the bibliometric characteristics of the scientific production related to the aforementioned variables through the publications registered in the Scopus database during the period 2017-2022, as well as the position of some authors regarding the proposed theme.
2. General Objective

Analyze from a bibliometric and bibliographic perspective, the elaboration and publication of research works in high-impact journals indexed in Scopus database on the ICT and Digital Marketing variables, during the period 2017-2022.

3. Methodology

This article is carried out through a mixed orientation research that combines the quantitative and qualitative method.

On the one hand, a quantitative analysis of the information selected in Scopus is carried out under a bibliometric approach of the scientific production corresponding to the study of ICT and Digital Marketing.

A qualitative perspective, examples of some research works published in the area of study indicated previously, starting from a bibliographic approach that allows to describe the position of different authors towards the proposed topic. It is important to note that the entire search was performed through Scopus, managing to establish the parameters referenced in Figure 1.

3.1. Methodological design

Figure 1. Methodological design

Source: Authors.

3.1.1 Phase 1: Data collection

Data collection was executed from the Search tool on the Scopus website, where 145 publications were obtained from the choice of the following filters:

TITLE-ABS-KEY (ict, AND digital AND marketing) AND (LIMIT-TO (PUBYEAR, 2022) OR LIMIT-TO (PUBYEAR, 2021) OR LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017))

- Published documents whose study variables are related to the study of ICT and Digital Marketing.
3.1.2 Phase 2: Construction of analysis material

The information collected in Scopus during the previous phase is organized and subsequently classified by graphs, figures and tables as follows:

- Co-occurrence of words.
- Year of publication.
- Country of origin of the publication.
- Area of knowledge.
- Type of publication.

3.1.3 Phase 3: Drafting of conclusions and outcome document

In this phase, we proceed with the analysis of the results previously yielded resulting in the determination of conclusions and, consequently, the obtaining of the final document.

4. Results

4.1 Co-occurrence of words

Figure 2 shows the co-occurrence of keywords found in the publications identified in the Scopus database.

Figure 2. Co-occurrence of words

Source: Own elaboration (2023); based on data exported from Scopus.
Within the classification of keywords and the analysis of their co-occurrence, it is evident that the ICT variable is used more frequently within the research works identified for analysis thanks to the execution of Phase 1 of the Methodological Design proposed for this article. It is directly related to articles whose variables are Electronic Commerce, E-commerce, Tourism, Tourism Marketing, Digital Marketing and Internet. The foregoing allows us to infer that the research works identified are relevant to the approach of the objective proposed by this document, by directly relating ICT tools with strategies inherent to Digital Marketing within an organization. On the other hand, the keywords Communication and Information, Marketing, Innovation, Digital Storage, allow this analysis to be taken to the field of information management and knowledge management, since the variables referring to information have been related to technological systems for processing it. Similarly, Commerce indicates how organizations are implementing systems for data processing, relying on the use of technological tools for the development of digital marketing strategies.

4.2 Distribution of scientific production by year of publication

Figure 3 shows how scientific production is distributed according to the year of publication.

**Figure 3. Distribution of scientific production by year of publication.**

Source: Own elaboration (2023); based on data exported from Scopus

Figure 3 shows the growth that scientific production has had around the variables ICT and Digital Marketing, which responds to the constant changes in technology that the whole world experiences thanks to globalization itself. It is observed that in 2022 the largest number of works published in high-impact journals indexed in the Scopus database has been presented, a total of 34 publications referring to the topic
proposed by this document, among which is the article entitled "Digital inclusion in the adoption of marketing in social networks: the role of product suitability in the agricultural sector" (He, Xiong, & Zhao, 2022) aimed at understanding the factors motivating the adoption of social media marketing (SMM) tools by rural farmers in China. The study reveals not only the level of suitability of the insertion of new technologies for the marketing of agricultural products, but an existing generation gap that prevents the correct use of technological tools by elderly farmers, so it is expected that digital skills can be developed among people in this sector, to optimize the use of these technologies at the service of farmers not only in China, the country of origin of this study, but globally, where the absence of skills for the management of ICT by elderly farmers has also been evidenced.

On the other hand, the growth in the volume of scientific production indexed in Scopus is explained, as a response to the recent global health crisis that forced to decree quarantine due to the pandemic caused by the rapid spread of the virus called Covid-19 and that forced all sectors of commerce, to migrate their attention to consumers through virtuality, so this is a determining factor so that between 2022 and 2022 the largest number of publications has been registered around the ICT and Digital Marketing variables.

4.3 Distribution of scientific production by country of origin

Figure 4 shows how scientific production is distributed according to the country of origin of the institutions to which the authors are affiliated.

Figure 4. Distribution of scientific production by country of origin.

Source: Own elaboration (2023); based on data provided by Scopus.
India leads the scientific production globally with a total of 21 publications related to the study of ICT and Digital Marketing, which allows us to infer that the efforts by the scientific community to implement digital strategies within the commercialization of goods and/or services represent fruits in the generation of new knowledge, recognizing that this Asian country leads issues in BigData management and knowledge management around the analysis of large volumes of data, which are usually used by companies to constitute valuable information in the design of marketing strategies. Ecuador was the Latin American country with the highest number of publications referring to the topic raised by this document, with a total of 8 publications registered in Scopus, among which is the article entitled "Web 2.0 Digital Marketing Tools in the Ecuadorian Tourism Sector in the Face of the COVID-19 Pandemic" (Ballesteros-López, Peñaherrera-Zambrano, Armas-Arias, & López-Pérez, 2021) whose objective was analyze the behavior of Ecuadorian tourists specifically from the province of Tungurahua, which was focused on the use of digital marketing tools during the COVID-19 pandemic. The low influx of tourists thanks to the measures adopted to mitigate the effects of Covid-19 motivated the researchers to identify which have been the tools used by those who market their services in the tourism sector of Ecuador, identifying digital marketing tools as the main strategy for the reactivation of tourism activities in that country. This also allowed to establish that tourists have a young profile with an affinity for social networks, which mostly prefer destinations considered safe and prefer to be in contact with nature.

4.4 Distribution of scientific production by area of knowledge

Figure 5 shows the distribution of the elaboration of scientific publications from the area of knowledge through which the different research methodologies are implemented.
Figure 5. Distribution of scientific production by area of knowledge.

Source: Own elaboration (2023); based on data provided by Scopus

Computer Science, was the area of knowledge with the largest number of articles influenced by its theories, thanks to the nature of the subject raised that involves technological aspects and digital tools, it is established that 59 publications have as their main source of information, the components derived from said science. It is important to mention that due to the multidisciplinarity presented in the topic proposed in this document, a single article can be counted in two or more areas of knowledge. Business, Administration and Accounting, is in second place, with a total of 58 publications among which stands out the article entitled "Management of social selling and B2B brand and customer engagement: Is direct selling on social networks good for your brand and your relationships? " (Sombuitawe & Wattanatorn, 2022) aimed to investigate the formation of commercial customer brand engagement and strong customer-company relationships in a social selling environment. The application of the methodology implemented for the development of the same allowed the researchers to determine that the quality of information, virtual interactivity and rewards influence the commitment to the brand of the commercial client, which in turn had a positive influence on the strength of the client-company relationship. The above constitutes a great contribution for the scientific community interested in knowing all the aspects that must be
taken into account within the relationships established between the client and the company.

4.5 Type of publication

In the following graph, you will observe the distribution of the bibliographic finding according to the type of publication made by each of the authors found in Scopus.

Figure 6. Type of publication.

Source: Own elaboration (2023); based on data provided by Scopus.

52% of the total scientific production identified through the execution of Phase 1 of the Methodological Design through which the search parameters are established for the identification of the study material that leads to the fulfillment of the objective set for this document, corresponds to Journal Articles, that is, of the 154 documents identified in Scopus, 76 were published under this modality. On the other hand, 29% of it, that is, 42 publications were Conference Articles, and 10% equivalent to 14 publications turned out to be Book Chapters. It is important to mention that in the same way the identification of Reviews, Conference Reviews, Books and Notes that also develop different methodologies that contribute to the generation of new knowledge around the study of ICT, knowledge management, and what they represent for Digital Marketing strategies in an organization was achieved.

5. Conclusions

Thanks to the bibliometric analysis proposed for the development of this document, it is possible to establish that India was the country with the highest number of publications referring to the study of ICT, knowledge
management as useful tools in the planning of strategies based on Digital Marketing for any organization, with a total of 21 documents that met the established search criteria. The above is based on the leadership that this Asian country exercises on the generation of new knowledge regarding the usability of BigData analysis and the management of large volumes of information, as well as the application of strategies aimed at certain members of society related to the line of products and / or services in question. For its part, taking into account the Latin American community, the presence of researchers affiliated with institutions from Ecuador, Colombia, Mexico, Chile, Cuba and Argentina was highlighted, which will make their contribution in the construction of bibliographic material regarding the study of Knowledge Management and ICT as an essential tool in the design of Digital Marketing strategies.

It is important to consider the usefulness that Information Management has for the organization in its positioning strategies, since these information systems nourish an entire database from which useful information is chosen or discarded or not for companies, which greatly contributes to the search for success in targeted advertising campaigns. by digital means to potential customers and that this effort is not lost in a universe of consumers moving away from the levels of effectiveness expected by the Marketing department in any organization. It stands out then the size that the development of these studies has exercised in sectors such as agriculture, tourism, clothing, food, among others, since they have managed to strengthen sales thanks to the implementation of strategies conceived from the practice of Digital Marketing. Therefore, it is expected that through the publication of articles such as the one proposed in this document, it will be possible to determine the real present of the management of the aforementioned variables and seek the generation of new knowledge around them, in order to strengthen companies that rely on technological tools to comply with their goals and objectives.

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