



# Digital transformation: A literature review in the context of international economies and finance

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**Purpose:** The digitisation of economies and finance shows the importance of digital transformation (DT) in helping countries, markets and institutions to remain competitive. The changes brought about are not only technological in nature in certain market niches but affect the globality of a country's institutions with environmental and social implications. For this reason, in recent years, DT has received increasing attention from researchers, and this study will show its evolution of DT and its components in the period 2012–2022.

**Design/methodology/approach:** For this purpose, a literature review with bibliometric analysis is carried out, in order to evaluate DT and its components in emerging and developed economy countries. In the statistical work, the bibliometrix and biblioshiny software packages were used to perform data extraction and quantitative analysis of the research articles, obtained from the Web of Science databases.

**Findings/results:** A total of 164 articles were selected for the research, which served to identify the most relevant publications on the case of DT in developing versus developed countries.

**Practical implications:** Thus, this research is of great interest to academics and practitioners who can explore knowledge on DT in a global context and analyse the main trends and authors contributing to knowledge in this scientific field.

**Originality/value:** The conclusions obtained refer both to the theoretical framework and to the implications for the management of both public administrations and international governmental organisations.

**Keywords:** developing and developed countries; digital transformation; international productivity and finance; economy and country; bibliometric analysis.

## Introduction

Despite the growing importance of digital transformation (DT) in developed economies and finance, it has been extensively studied at the firm, industry and country levels (Lee et al., 2021; Pizzi et al., 2021; Ragazou et al., 2022). The global impact of DT components in emerging and developed economies has received little attention from the academic community.

The current economic and finance environment is strongly influenced by the emergence of new technologies such as mobile devices, social networks, virtual, augmented and mixed reality, blockchain, cloud computing, Internet of Things, etc., which provide cheap access to information and a wide range of opportunities for innovation in the business environment (Kazim, 2021). The volume of transactions carried out through digital technologies is constantly growing, which causes the existence of many government policies around the world to support the implementation of technological innovations to adapt to the new digital economy (United Nations, 2019). In fact, investment in technologies can have a strong impact on the economic performance of emerging and developed countries.

Digital transformation in countries is highly relevant for the development of digital entrepreneurship, especially for emerging economies that have a less stable institutional environment than developed countries (Volchek et al., 2014). In this regard, there are a number of contextual constraints weighing on emerging countries, such as small and fragmented markets,

**Note:** Special Collection: Managerial Practices.

inadequate entrepreneurial knowledge and skills, lack of highly skilled and affordable labour and limited access to finance (United Nations, 2021).

Green technological innovations are being promoted in global economies to stabilise atmospheric emissions of greenhouse gases (Dechezleprêtre et al., 2011). They occupy a central place in achieving sustainable development goals, for which the economic and finance potential offered by technology needs to be harnessed through international cooperation of countries (United Nations, 2019).

Studies on DT show a terminological dispersion, given the complexity of the concept in the field studied, that it affects several organisational levels (countries, economies, companies, markets and public institutions) and that its scope requires different levels of analysis (Vial, 2019).

The objective of this study is therefore twofold. On the one hand, the term is going to be narrowed down to the literature comparing emerging and developed economies and finance in studies related to disruptive innovations (Williamson et al., 2020), to the impact of Information and Communication Technology (ICT) on the economic growth of countries (Afawubo & Noglo, 2022; Niebel, 2018), to the effect of business organisations, whether SMEs or large companies (Del Giudice et al., 2019) and within the technological change that is occurring in the innovations of economies focusing on sustainability affecting emissions and energy intensity (Dechezleprêtre et al., 2011; Savona & Ciarli, 2019). On the other hand, the aim is to analyse the metrics of the components of DT, such as trends, publications, authors, reference territories and the conceptual structure of this topic.

Therefore, to achieve the aims of this study, we utilised articles published from 2010 to 2022 in the Web of Science (WOS) core collection, followed by a bibliometric analysis to showcase the metrics and establish a conceptual framework for the literature under review. This study aims to address the following research questions: Firstly, is there scientific interest in analysing the elements of DT in developed and emerging economies? Secondly, what components of DT are involved in technological disruption in developed and developing countries?

The structure of this article is as follows. After this introductory section, the literature review on DT and bibliometric methods in this field of research is presented, followed by the description of the research methods used. The presentation of the results and the conclusions and implications close the manuscript.

## Literature review

The digital era represents a real development in global economies and finance. This study focuses on research on certain components of DT. In the following, an attempt will be made to organise the existing body of knowledge by detecting and grouping the specific aspects of DT addressed by the literature.

## Approach to digital transformation

Digital transformation is a dynamic force that seeks to provide solutions to the profound changes originating in the economies of productive sectors. It is based on the use of digital technologies, which interact in markets and enhance innovation, productivity and competitiveness of companies (Hess et al., 2016). As a result, these technologies transform the management of business entities, public administrations and other institutional organisations in countries, creating value and bringing different experiences to different stakeholders (Quinn et al., 2016).

Given this growing era of DT, an increasing number of studies have shown interest in examining its impact on countries, whether developed or developing (Tijan et al., 2021). Thus, certain components of DT can bring to a country growth in production, labour productivity, quality employment, fair wages, virtual delivery or constant innovation (Matt et al., 2015).

In this section, the focus is particularly on bringing together studies that analyse the impacts caused by certain components of DT in developed and developing countries.

## Components of digital transformation in emerging and developed economies oriented to internationalisation

### Theory based on dynamic resources and capabilities. Technological impact and digital capabilities that are integrated into the organisational resources of the markets

International expansion by emerging market firms into developed countries has received increasing attention in business research. Using a resource- and capability-based view (Li et al., 2022), internationalisation provides emerging market organisations with ample opportunities to seek and obtain heterogeneous resources needed to develop high market penetration firms (Kafouros et al., 2008), in which technological resources occupy a unique and significant position for internationalisation (Tseng et al., 2007). Strategic assets are sought as resources that are difficult to imitate, specialised and scarce and that give organisations a competitive advantage. This search for strategic assets is believed to involve acquiring knowledge-based resources, such as learning advanced technology considered as one of the main purposes of the entry of emerging international companies in developed countries (Cui et al., 2017). They also orient their efforts in the search for human capital in developed countries with high levels of digital capabilities, as less advanced countries based in emerging markets cannot offer such assets. This strategic positioning complements and enhances their assets and capabilities abroad (Angulo-Ruiz et al., 2022).

Another phenomenon that favours internationalisation is the cross-border acquisition of companies. Following the theory of resources and capabilities (Barney, 1991), an acquisition produces value for the acquiring firm when it combines valuable and unique resources tapped from the target firm. Acquiring firms exploit the acquiring firms' creative

knowledge by connecting it with their existing manufacturing, distribution, and marketing capabilities. This process involves the integration of organisational resources (human capital, processes and technology) that provides information control, improved productivity, data accessibility and reduced business costs (Hanif et al., 2023).

Research has shown that most emerging economy MNCs possess dynamic technological capabilities to innovate comparatively weaker than developed economy MNCs (Ramamurti & Williamson, 2019). Therefore, the success of international firms from emerging countries depends on the location of the country to which it moves to initiate the acquisition process (Hanif et al., 2023).

### **Dynamic capabilities of economies to favour the implementation of sustainable technology**

International markets, by implementing technological patterns in economic sectors, force countries and their companies to face rapid and radical changes related to the use of digital technology in order to be competitive (Ciravegna et al., 2014; Scuotto et al., 2021). Through dynamic capabilities at the macro (country) level, these technological requirements are addressed through the implementation of government policies and regulations closely related to environmental sustainability, which affect the dynamic capabilities of firms adapting to their environment through organisational competencies at the micro level, such as: operational, administrative and managerial functions (Akhtar et al., 2020). Studies show that multinational companies in emerging countries must rethink their environmental policies and practices to compete with companies in developed countries (Ray et al., 2022).

Technological innovation leads to structural changes that have a direct impact on energy emissions and the global environment. The literature argues that economic growth should be promoted through the continuous introduction of new products, services and industrial processes, taking into account environmental sustainability. It would be interesting to pursue common actions in the field of industrial and environmental policies at the international level, based on the ability of service sectors to incorporate technological changes that reduce energy intensity (Savona & Ciarli, 2019). To avoid the transfer of polluting emissions from developed to emerging countries because of global trade trends, it is necessary to review environmental policies in the context of technological innovation policies, especially in the industrial sector, and to improve communication between companies and public administrations (Cezarino et al., 2019).

### **Institutional theory in international economies**

Institutional theory refers to the various factors or mechanisms devised by society to conduct human relationships or behaviour, which involves the use of the concept institution in a very broad way, it addresses how social actors become isomorphic or similar to each other under the influence of institutional pressure (Aguilera & Grøgaard, 2019; Dikova

et al., 2010). Scholars argue that institutions are based on norms, rules and constraining cultural aspects that influence firms' decisions. This theory emphasises the central role of institutions as they provide the rules of the game that govern economic behaviour and firm interactions (Ahmed et al., 2020). This idea has implications for the way multinational companies are viewed as being influenced by the institutional environments of the country or countries where they operate (Enkhtaivan & Davaadorj, 2020; Grøgaard et al., 2019).

### **Technology innovation orientation**

Classical institutional theory assumes that all firms behave more or less similarly under institutional pressure; however, multinational organisations, which make cross-border acquisitions seeking firms with high technological value, bear more institutional pressure because of their negative image in the countries of the acquired firms, as host countries protect their technologies from being taught abroad because of their possible negative effects on their economy (Ahmed et al., 2020). Host country governments take measures to prevent acquired firms from being exploited for their technological value, as host countries are legitimised, according to institutional theory, to respond to foreign multinational firms from institutional uncertainty that influences the market decisions of local firms (Kostova et al., 2008).

Institutions have played an important role in the successful implementation of new technologies and business models to promote improvements in the infrastructures and regulations of countries' economies. Specifically, the literature has highlighted institutional support in the development and growth of digital platform ecosystems that promote more effective relationships between customers and businesses. In this sense, it has been shown that creating technological networks based on ICTs decreases uncertainty in the decisions to be made in markets (Kumar et al., 2021). There are few studies that show the institutional differences between emerging and developed countries related to the impact of adapting technology.

### **Orientation to environmental innovation**

Scientific literature analyses through institutional theory the motives of CSR (corporate social responsibility) behaviours, such as corporate eco-innovation and organisational behaviour that depends on its interaction with the external environment. Coercive isomorphism concerns the norms that affect firms' innovation activities in a particular organisational domain according to institutional requirements (Yang et al., 2020). Firms in emerging markets are often influenced by governmental motives (Fabrizi et al., 2018) and various industrial policies. In addition, there are studies showing that foreign investments by emerging market companies and companies from developed countries in other countries should be enhanced to boost green innovation. They are expected to improve existing technologies, processes or standards associated with green innovation that enables them to respond to the demands of emerging business markets (Galbreath, 2019).

### **International knowledge management: collaborative innovation, institutional governance and R&D investment**

Business strategies are influenced by the information they receive from international markets along with their knowledge. In the digital era companies in general regardless of the sector in which they operate tend to internationalise by creating networks identified through the relationship: customer-supplier, to explore new markets and increase their revenues (Ciravegna et al., 2014). Other studies create international networks through technological alliances with companies from emerging and developed economies, increasing the geographical diversity of their alliance portfolio (Jacob et al., 2013).

The open innovation process emerges as a crucial concept from academic research (Bogers et al., 2018). It is linked to knowledge management and aims at the exchange of ideas and technologies between market actors, such as: suppliers, customers, and competitors. Therefore, knowledge inputs and outputs enhance the success of innovation through digital technology. An ecosystem is created in which countries' economic sectors can enhance co-creation. Although open innovation is considered a global organisational strategy, it has been mainly adopted in developed countries and its applicability in emerging economies has not yet been fully explored (Bogers et al., 2019; Huang et al., 2015).

The literature emphasises the influence that the institutional environment based on governance theory shows on the knowledge management of international companies, with the aim of exploiting their competitive potential as a strategic resource (Foss et al., 2010). They are mechanisms focused on human capital and infrastructures. Knowledge processes can be executed efficiently if human resources are proactive in their development, in which rewards and organisational culture are key elements to address this challenge. Infrastructures must be adequate to the development of organisational processes that support knowledge processes, highlighting ICT-based mechanisms that include applications and computer systems that allow their users to share codified knowledge- (Dávila et al., 2019). All employees of companies are helped to access organisational knowledge quickly, improving organisational performance. These processes are encouraged by country governments through two ways. On the one hand, through financial support to companies that encourages the acquisition of technology. And on the other, by promoting skills related to the use of technology through training courses (Sparkman, 2015).

Another collaborative process that contributes to the growth of international companies is the spill over effect. It consists of taking advantage of the technological improvement of a company that is usually culturally and geographically close to another, giving it a competitive advantage (Del Giudice et al., 2019). This inter-firm technology transfer promotes innovation interaction and fosters industrial cooperation networks.

Research and Development (R&D) investments are sized internationally. For emerging countries, it is a new phenomenon

and the literature investigates foreign direct investment in R&D in developed countries (Di Minin et al., 2012; Liu, 2019).

## **Methodology**

There are different techniques commonly used to perform literature reviews (Zupic & Čater, 2015). Bibliometric analysis is one of these techniques and is used for a better interpretation of the data on scientific publications (Tranfield et al., 2003) and to discover possible trends that may be useful for research (Merigó et al., 2016).

The bibliometric analysis quantitatively studies the bibliography of a particular research area, analysing and identifying its main trends, contents and authors through statistical methods (Mulet-Forteza et al., 2019). The bibliometric methodology also facilitates the assessment of the relevance of the knowledge through the analysis of the citations that the article has. This methodology is presented as an effective tool for the study of a specific knowledge topic and provides researchers with the opportunity to map the literature in a scientific field (Ravikumar et al., 2015).

Different bibliometric studies have been previously applied in the DT context providing a general evaluation of the titles, summaries, and keywords of the articles to identify the most relevant topics in the DT sector (Hanelt et al., 2021). Other bibliometric analyses have been carried out on complete articles (Huang et al., 2020) for more comprehensive results.

In many cases, the bibliometric analysis evaluates just a part of the DT theme, such as trends (Chawla & Goyal, 2022), engineering (Lee et al., 2021), the construction industry (Adekunle et al., 2024) or business auditing (Pizzi et al., 2021). In this way, bibliometric analyses can extract data about the most interesting topics for authors, trends in theme research or new concepts that may have an impact in the future (Hanelt et al., 2021).

The current bibliometric analysis contributes to the research on DT by examining the articles on certain components of DT published in 10 years, between 2013 and 2022. To achieve the objectives, an advanced bibliometric analysis was carried out on a total of 164 published documents related to DT of developed vs. and developing countries.

### **Data and methods**

This research follows a set of guidelines on how to conduct a bibliometric analysis (Aria & Cuccurullo, 2017), and the results analysis follows a structure similar to several bibliometric studies published recently (Fortuna et al., 2020).

The bibliometric analysis follows a two-step procedure, firstly a performance analysis on the scientific productivity of the research actors is conducted and, in the next step, a science mapping analysis is performed, evaluating the structure and the dynamic aspects of the research topic in order to determine



its evaluation and main actors, further including a citation and a co-word analysis (Aria & Cuccurullo, 2017).

### Selection criteria, strategies and management of the data set

This study seeks to explore the nature and course of the literature on DT of developed versus developing countries. Thus, a bibliometric analysis is conducted, using both, bibliometric performance methods and science mapping methods (Zupic & Čater, 2015).

In order to produce an up to date analysis of the state of the art of the underlying research stream, a search was conducted on the on the WoS main collection, which includes the ‘SCI-EXPANDED’, ‘SSCI’, ‘A&HCI’, ‘CPCI-S’, ‘CPCI-SSH’, ‘ESCI’, ‘CCR-EXPANDED’ and ‘IC’, for ‘Article’ type documents, in English language, published over the period from 2013 to 2022 with the words (“emerging countr\*” OR “emerging econom\*”) AND (“developed countr\*” OR “developed econom\*”) AND (“technolog\*” OR “digit\*”) in the articles title ‘OR’ abstract. This resulted in a set of 164 articles.

The selection of the analysed articles was carried out in several phases based on the PRISMA methodology (Moher et al., 2009), as illustrated in Table 1.

## Results

### Main information

Figure 1 shows the evolution of the number of articles published over the period and provides information on the

TABLE 1: Prisma methodology of the process of identification and screening.

PRISMA	Search text	Total
Identification	TOPIC: (“emerging countr*” OR “emerging econom*”) AND (“developed countr*” OR “developed econom*”) AND (“technolog*” OR “digit*”)	380
Screening	Refined by: Document type: Article or Review Article. Categories: Management or Business or Economics or Business Finance. Languages: English. Indexes: Web of Science Core Collection. Time period: 2013–2022.	164
Included	The final selection is composed of articles clearly defined in the methodology.	164

published articles’ growth rate. Furthermore, it shows a positive evolution of published articles during the studied period, especially since 2017.

Figure 2 shows the descriptive statistics and the main information on the publications focusing on DT for the 2013–2022 period. The number of authors of this subject stands out (438 authors), and the annual growth rate reaches 18.67%. These data suggest that we are facing a topic that is increasing in the number of publications and therefore of great interest to the international scientific community and society.

### Performance analysis – Leading authors, journals, universities and countries

#### Leading authors

The most relevant authors publishing on the theme research stream over the analysed period are shown in Figure 3. According to the data, Kumar and Ray were the most relevant authors contributing to four and three articles, respectively.

Furthermore, the author’s publication schedule was studied. For instance, V. Kumar contributed to four articles that were published, two in 2017 and one in each year from 2021 to 2022. André O. Laplume and Saurav Pathak represent two articles, while Sangeeta Ray and Xing Li published one article.

The most cited articles worldwide during the period 2013–2022 were also analysed. The citation analysis is based on the

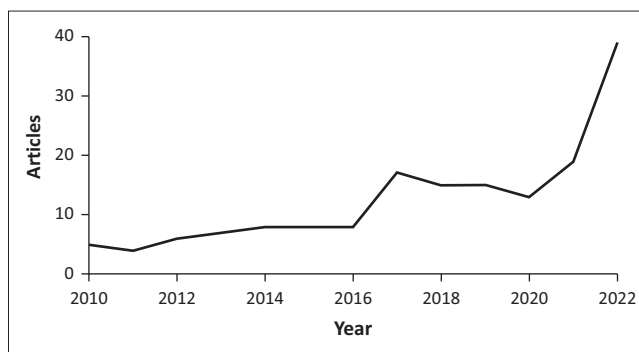
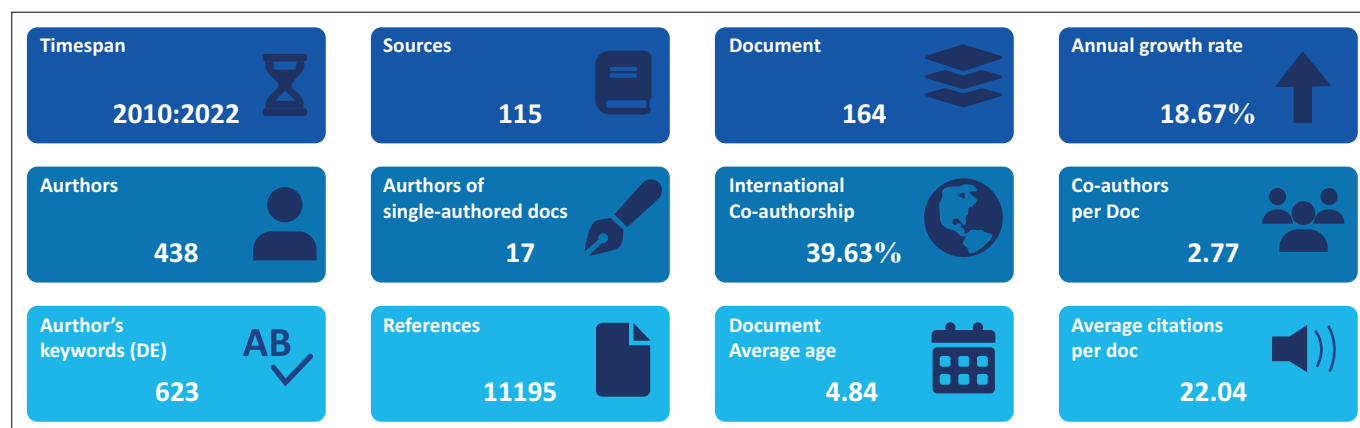


FIGURE 1: Annual scientific production.



Note: DE, author’s keywords for bibliometrix and biblioshiny software packages.

FIGURE 2: Main information.

number of citations a document receives. The number of citations an article receives is widely accepted as a measure of its influence. Global citations refer to the total number of citations an article received in the WoS database.

According to the results, the most cited document is an article by Niebel (2018), with 291 citations, followed by Dechezleprêtre et al. (2011) with 221 citations. Ciravegna et al. (2014) with 129 citations is the third most cited article. Dögl and Holtbrügge (2014) and De Beule (2012) complete the top five most cited articles, with 122 and 103 citations, respectively.

### Leading sources

Regarding the analysis of the top cited sources, the *International Journal of Emerging Markets* (9 citations),

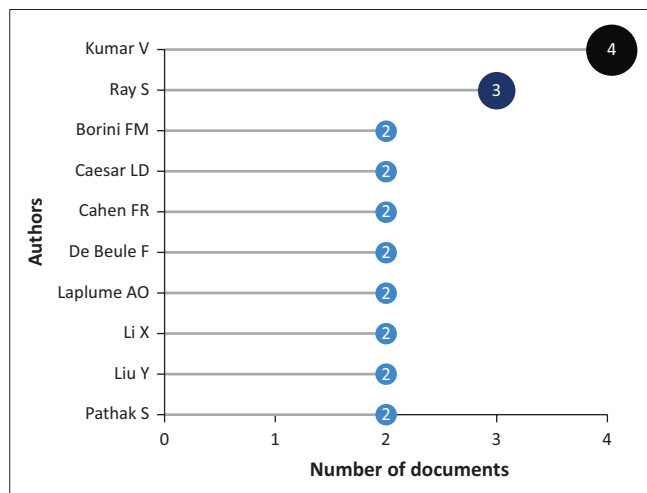


FIGURE 3: Leading authors.

the *Technological Forecasting and Social Change* (five citations), the *Energy Policy* (four citations) and the *IEEE Transactions on Engineering Management* (four citations) were the most cited sources over the analysed period on the DT research stream.

In addition, the impact of publications was studied through the *h-index* and its generalisations. The *h-index* is a robust indicator of published output (Vanclay, 2013) and represents, for a unit of measure, the number *h* of articles with at least *h* citations (Mingers, 2009).

When analysing the publications *h-index*, results show that the top five most relevant publications were *International Journal of Emerging Markets* (*h-index* = 6), followed by *Technological Forecasting and Social Change* (*h-index* = 4), *Energy Policy* (*h-index* = 3). *IEEE Transactions on Engineering Management* (*h-index* = 3), *BALTIC Journal of Management* (*h-index* = 3) and *Journal of International Business Studies* (*h-index* = 3).

### Leading countries

Figure 4 represent the country's scientific production, measured through the number of published articles. United States (US) leads the number of published articles, scoring 58 published articles, followed by China (52 articles), United Kingdom (UK) (46 articles), Brazil (30 articles) and India (30 articles).

### Keyword frequency

The knowledge structure of the documents is analysed through frequent words to establish the constructs and variables studied in the DT of emerging and developed economies. An analysis of commonly used terminology was carried out through author keywords, considered to best

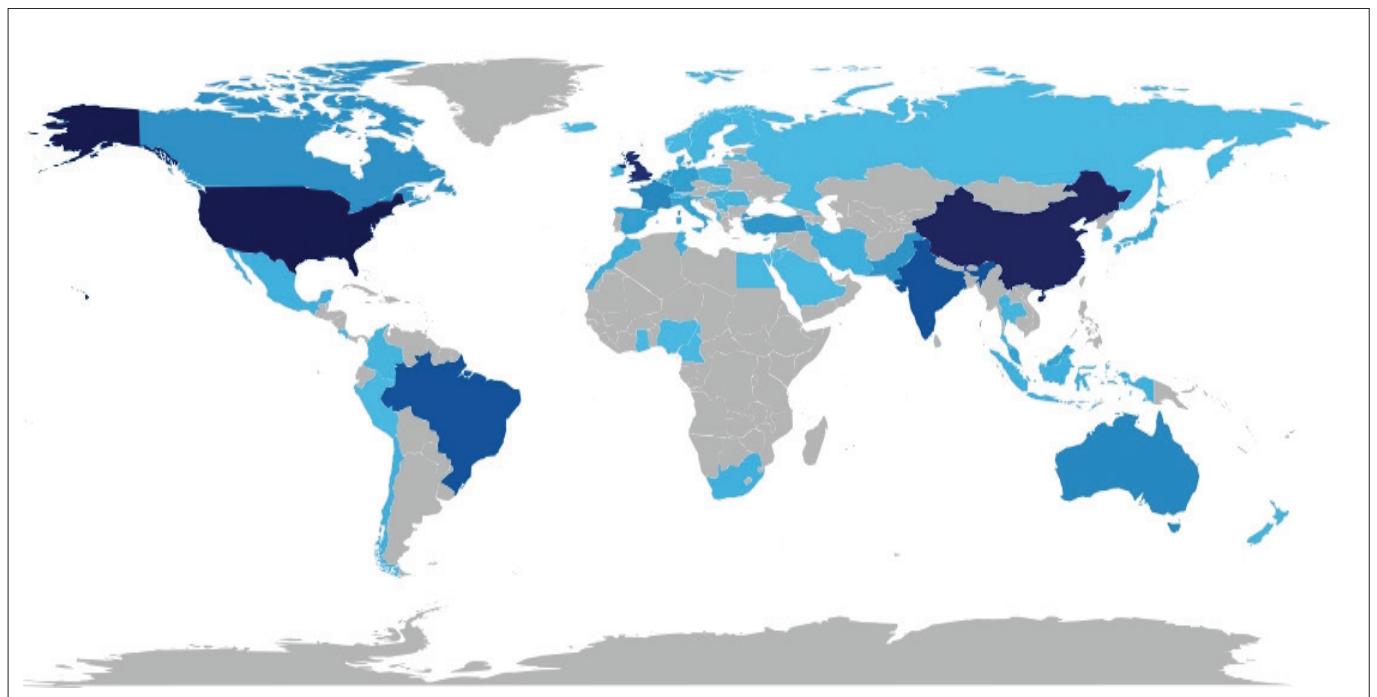


FIGURE 4: Leading countries.



FIGURE 5: Article's words analysis.

represent the content of the article (Garfield & Sher, 1993). A visual representation of the text data is established through a word cloud graph based on the 50 most commonly used keywords in the articles (Figure 5). The terms that best show the knowledge of the literature are based on 19 words that indicate a wide conceptual diversity of DT in the analysed subject matter.

## Discussion

The literature on DT and its components is fundamental to assess its performance in developed versus developing countries. This study uses a bibliometric approach and represents the knowledge structure of this research stream during the period 2013–2022. The results show the state-of-the-art of this topic, as well as its development, indicating a steady increase in the body of work in this field of research, also showing the main scientific trends on this topic and the main variables of scientific production. These results are in agreement with Matt et al.'s (2015) study suggesting the recent importance of DT and its components for the countries.

According to the bibliometric analysis, the main results show a certain degree of positive evolution of scientific production in the period 2012–2022, mainly from the year 2017 registering an increase in annual scientific production (Matt et al., 2015).

During the period analysed, from 2013 to 2022, Kumar and Ray were the most relevant authors, each contributing four and three articles, respectively. However, these authors were not among the most cited. These results confirm the growing

relevance of DT for universities, journals and researchers (Tijan et al., 2021).

Among the most relevant publications in terms of citations were Emerald's *International Journal of Emerging Markets* (nine citations), *Technological Forecasting and Social Change* (five citations), *Energy Policy* (four citations), both from Elsevier, and *IEEE's Transactions on Engineering Management* (four citations).

In addition, U.S. authors accounted for more than 35% of the publications, so it is not surprising that they are also the most cited. Among the most cited articles were Niebel (2018) with 291 citations and Dechezleprêtre et al. (2011) with 221 citations. The countries with the highest research production on DT coincide with other studies that propose the USA and China as the leaders in DT (Dubickis & Gaile-Sarkane, 2021).

To analyse the DT elements in the globality of the analysed economies, it is necessary to study the dynamic intellectual connections through the conceptual structure. These terms broadly coincide with the study by Del Giudice et al. (2019), which presents performance, technology or innovation as key terms (Figure 6).

The co-occurrence network establishes the conceptual relationships and the most relevant trends in a field of research. Clusters of keywords defined by author and selected in each article are created. The map is elaborated in the following way: the terms with the highest presence





innovation are established. Three dimensions are identified: use of government policies that encourage research, development and use of technologies, creation of value that impacts local and international markets through knowledge management and the search for sustainability in technological developments. The results achieved coincide with those of Dubickis and Gaile-Sarkane (2021), which address factors influencing technology in emerging economies.

The other two clusters (blue and purple) conceptually complement the DT term by focusing on the organisational implications. Thus, the process of DT in economies requires strong support from companies that bring about fundamental changes in their organisational structures and systems, based on open technology transfer strategies, for which flexible resources and capabilities are needed, suitable for responding to market proposals (Lee et al., 2021). The research analysed highlights the qualitative and quantitative leap in the pursuit of strategies focused on technological innovation that is taking place in companies in emerging countries.

A conceptual framework of the most relevant DT components influencing global economies through a series of enablers is presented.

The international expansion of firms into markets has received increasing research attention, based on the underlying mechanisms followed in global economies aimed at the development of technological innovation.

Research focuses on the development of dynamic technological capabilities as a decisive factor in the internationalisation of economies, targeting both developed and developing countries. A series of heterogeneous technological resources necessary for the development and improvement of the companies to be internationalised must be acquired. Also, technological learning must be promoted as a necessary skill to be integrated into the human capital of the companies. The accumulation of technology and knowledge are the fundamental concerns of companies for their internationalisation and to consolidate the markets in which they operate. In addition to these internal capabilities, it is necessary to develop external organisational capabilities through inter-organisational collaborations through international strategic alliances or cross-border acquisitions involving shareholdings in companies in foreign markets.

The objective is to create value by integrating and recombining the most relevant resources, such as technological resources, which enhances post-acquisition innovation routines. Its competitiveness in local and global markets is increased in the long term, as the use of dynamic internal and external capabilities enables the transfer and integration of the target company's stock of resources in a unique and inimitable way between geographically dispersed units, which generates a sustainable competitive advantage.

In the context of globalised economies, international companies develop their businesses with mechanisms based on digital

communication platform ecosystems. Governments must put in place mechanisms that avoid uncertainty and arbitrary decision-making by companies that prejudice the decisions of customers and other local companies. Institutional loopholes must be avoided, and regulations must aim to generate security and trust in markets with organised structures, developed infrastructures and legal procedures that allow a technological environment conducive to businesses adapting to change.

Disruptive technologies, which affect global economies, face a number of environmental demands from stakeholders because of the emergence of sustainable development. Governments through the creation of environmental regulations encourage companies to innovate in an environmentally friendly way, with a concern for developing a low-carbon economy and being environmentally responsible.

## Conclusion

A holistic and synthesised view of the current situation of the factors affecting world economies and shaping the current state of DT has been presented. To this end, an attempt has been made to explore the literature related to the DT implementation processes in emerging and developed economies.

It has been observed that for global economies to be competitive in a disruptive environment many internal and external factors are involved, which need to be further investigated as it is a very complex process to delimit. In fact, researchers do not agree on the resources, strategies, and policies to be followed for a correct implementation of DT although the importance of DT and its components for the economy and finances of countries has been demonstrated.

Increased innovation and technological investment can improve the efficiency and transparency of different governments, thus attracting external financial investment. These results show that different policies are needed in developing and developed countries. Thus, in developed countries, priority should be given to maintaining DT policies and improving their quality, while in developing countries it is necessary to reduce bureaucracy, improve technological infrastructures and have adequate regulations for the controlled development of DT. In this context, countries such as the US and China are leading the way in terms of DT and its components.

As a limitation of this research, it must be said that it is based on an exploratory review of the literature, which allowed the construction of a theoretical study, but which requires empirical validation. Therefore, this work represents a first theoretical step that must be confirmed and confronted in the practical field.

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### Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

## Authors' contributions

J.A.M.-R. contributed towards the conceptualisation, methodology, investigation, writing – original draft and review as well as editing and resources. J.A.F.-F. contributed towards the project administration, supervision, conceptualisation, methodology, writing – original draft.

## Ethical considerations

This article followed all ethical standards for research without direct contact with human or animal subjects.

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## Data availability

The authors declare that all data used in the research will be made available without restriction of access.

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