DIGITALIZATION OF FINANCIAL DECISION-MAKING: A BIBLIOMETRIC ANALYSIS OF TRENDS AND RESEARCH EVOLUTION

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Abstract

Today, when managers are faced with radical paradigm shifts, researchers are closely following the phenomenon of the digitalization of the decision-making process. Discussing various advantages and disadvantages, as well as the future implications of these new managerial practices. In this regard, it can be said that the literature often talks about the digitalization of organizational decisions or even personal financial decisions, however, when it comes to financial decisions in the organizational context, the interest in this subject of study seems to be much lower. Thus, correlating the role of the financial side with the current technological situation, it can be considered that the interest in this field of study is still emerging, but with a high potential for exploration. In this sense, the present research aims to analyse what would be the evolution of research that deepens the digitalization of organizational financial decisions and, at the same time, what would be the trends correlated with this change. To achieve the study's objective, the paper employs a bibliometric analysis built on a data set extracted from the Web of Science Core Collection platform, with subsequent data processing and visualisation conducted via Biblioshiny. Through the chosen research method, the work aims to confirm both the fact that this topic is still under development, but also to create a reference point for future studies. The results bring a valuable contribution to the understanding of the dynamics of the specialized literature in this field.

Keywords: *decision-making, financial, digitalization, bibliometric analysis, research evolution*

Clasificare JEL : C88, D81, G30, O16, O30

1. Introduction and context of the study

The subject of digitalization of financial decisions is an extremely important but equally delicate one. Today, contemporary organizations are increasingly digitalizing their internal processes, which has consequently generated the emergence of digital tools used in financial decision-making. However, as these tools are relatively new, it can be said that the literature in the field is still emerging. Hence, studies that have a precise focus on the digitalization of financial decisions are still relatively few in number when the organizational area is discussed. Of course, it must be mentioned that the context of financial decisions is frequently encountered in scientific research, from papers that talk about financial literacy and financial behaviour (Ingale & Paluri, 2022) and up to works that consider managerial finance (Baker, Kumar & Pandey, 2020), researchers often analyse the state of the literature through the prism of bibliometric analyses. Nonetheless, there are also studies that are similar in specificity to the one proposed in this research, such as that of data-driven financial management, with a work where it was highlighted that this field holds a dynamic evolution (Judijanto, Kartika & Yusuf, 2023). It is also very

important to keep in mind that the issue of the digitalization of financial decisions is very much approached through the perspective of personal decisions, namely those that individuals make in their daily lives. With the subject of transforming consumer decision-making processes often being approached through the lens of technology (D'Acunto & Rossi, 2023). Yet, it remains to be confirmed what the real situation is regarding the study of the chose research topic when placed in the organizational sphere.

In a context in which contemporary managers are forced to move from making decisions based on expertise and intuition, to decisions supported by intelligent systems, papers such as those that address the so-called decision support systems can be discussed (Onwujekwe & Weistroffer, 2025) or even studies addressing AI capabilities and its impact on decision-making in organizations (Neiroukh, Emeagwali & Aljuhmani, 2025). However, it remains to be seen whether these changes in managerial practice have begun to be reflected in scientific research activity focusing on organizational financial decisions rather than on general ones.

In this direction, the research will focus on the use of bibliometric analysis, a method frequently approached in the case of works that seek to highlight the still emerging stage of literature in a field (Chen et al., 2017). The analysis and the main objective of the paper aim to highligh the dynamics of the evolution of studies addressing the digitalization of organizational financial decisions and to identify the main research trends. Finally, the research results will make a valuable contribution to the literature by completing it with a study from an area less addressed in the literature. Moreover, they will be also able to serve as reference points for future studies that could return to the present paper in order to determine an evolution of the field addressed.

2. Methodology

The research approaches a quantitative method, therefore carried out through bibliometric analysis; a methodological approach frequently encountered in the case of works that seek to identify and present the trends and evolution of a specific field of study (Kaur & Trifan, 2025). In this sense, in order for this work to achieve its proposed objective, the Web of Science Core Collection platform was identified as the database for the study, and the Biblioshiny software as the analysis tool. Regarding the application used, it can be mentioned that it is known in the literature for having an interactive graphical interface (Büyükkıdık, 2022) and that it uses the Bibiliometrix R package (Aria & Cuccurullo, 2017).

Thus, in order to construct the dataset on which the effective bibliometric analysis will be applied, several keywords were determined, necessary for the query builder part of the Web of Science. Their construction was determined by the research context, namely that of the digitalization of organizational financial decisions, having the following structures:

- "digitalization" OR "fintech" OR "artificial intelligence" OR "AI" OR "big data" OR "machine learning" OR "data-driven" OR "ML" OR "predictive analytics" OR "automation" OR "decision support system" OR "DSS" OR "blockchain".

Acording to the above detalied set, it can be seen that for the digitization part, the most popular terms specific to this field were included. This indicates that the aim was not to exlude certain works due to formulation that might have restricted the research exclusively to the term digitalization; rather, the broader organizational practice was considered, where concepts such as decision support system are often associated with digitized decision-making (Almalki, 2025).

- "financial decision" OR "financial decision-making" OR "financial decision making" OR "financial management decision" OR "corporate financial decision".

In the case of the financial decisions part, it was also taken into account that the literature can often include the term decision making written in two different forms, thus once again expanding the scope of the data set.

- "organization" OR "enterprise" OR "business" OR "corporation" OR "firm" OR "company".

Regarding the organizational context, the builder was not limited to the word organization, but aimed at expanding the dataset to terms used in a similar way in the literature. In the case of both the last group of keywords and of the other two as well, the use of the OR operator can be observed. Subsequently, the AND operator was used to link the three. No additional filter was applied to the obtained data, since the generated dataset was already relatively small, totalling only 88 papers.

Data on the 88 papers were extracted from the Web of Science platform, and then introduced into Bibilioshiny for the application of several analyses. For the research evolution part, the annual scientific production and average citations per year evolutions were carried out; and for the trends part, a thematic map and trend topics were produced. In the case of the evolution part, no special filters were applied, precisely because the volume of the database is low, otherwise a filter would limit the exact determination of scientific production or the number of citations. In the case of the trends part, the following parameters were used for the thematic map generation: number of words 250, minimum cluster frequency 5, label number 3, label size 0.3, community repulsion 0.5. In the case of trend topics, it must be noted that the authors' keywords were used and that for the period of 2014-2025.

3. Results

The results are divided into two parts, more precisely the part on the evolution of research in the field and the part regarding the trends. This delimitation is intended to provide the analysis with a much more coherent framework, providing a transition from the dimension of the literature in the field to its specificity.

3.1. Research evolution

The analysis of the evolution of the targeted field is one that starts from the extremely low number of works identified in the Web of Science Core Collection and that is a total of 88. This not only clearly indicates the lack of a focus on the digitalization of financial decisions, but also a possible literary gap. This could be argued through the fact that in other studies, the annual production of works for the general subject of the digitalization of the decision-making process is much higher. As for example in the case of the integration of digitalization in strategic decision making, where the number of works rises up to 980 (Judijanto et al., 2023).

With that said, in the case of the research topic addressed, the evolution over the years for the 88 papers has the following distribution according to Figure no. 1.

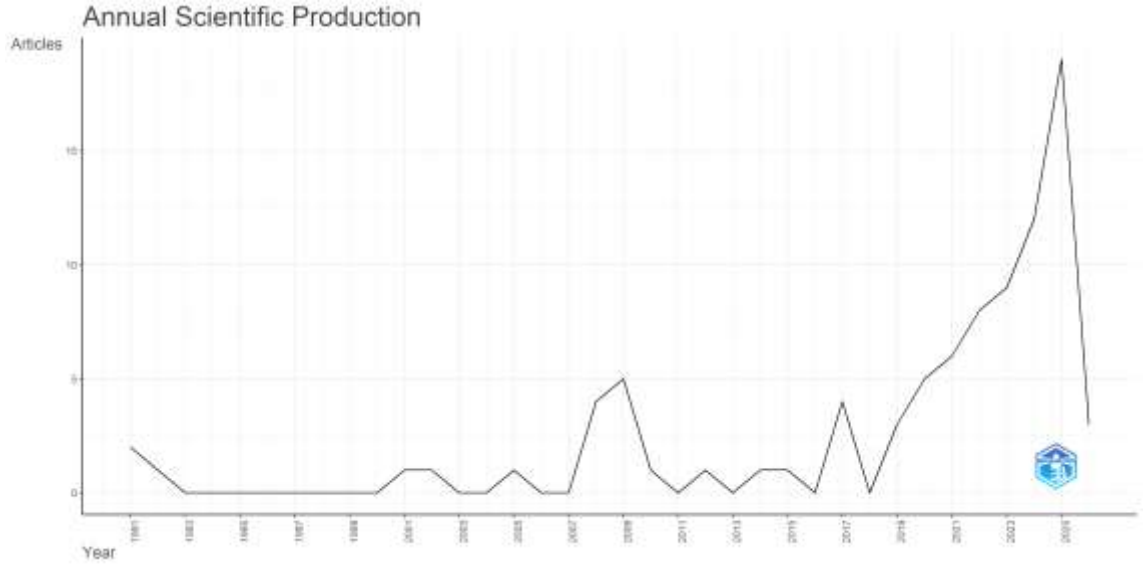

Figure no. 1. Annual evolution of the works

Source: Own processing using Biblioshiny

According to Figure 1, it is very clearly highlighted that the peak for research in this field is a much more recent one, with an increase being visible since the pandemic period and, at the same time, with a simillar increase that occurred during the 2008 economic crisis. Thus, given the context of both 2008 and 2020, it can be somewhat explained that interest in the targeted domain rises in periods marked by great financial uncertainty. Therefore, out of the 88 works identified in the Web of Science Core Collection, over 15 were accumulated in 2025, over 10 in 2023 and over 5 in 2021.

Subsequently, along with the distribution of papers by year, an average distribution of citations by year was also performed for this research. The purpose of this analysis is to reinforce the idea that the interest in the digitalization of organizational financial decisions is lower, or better said, not so frequently found in works, regardless if the are older or more recent. Further arguing that the specialized literature still needs to evolve and to cover mode specific areas as the ones proposed in this paper. With that being said, the annual citation evolution can be seen in the bellow Figure no. 2.

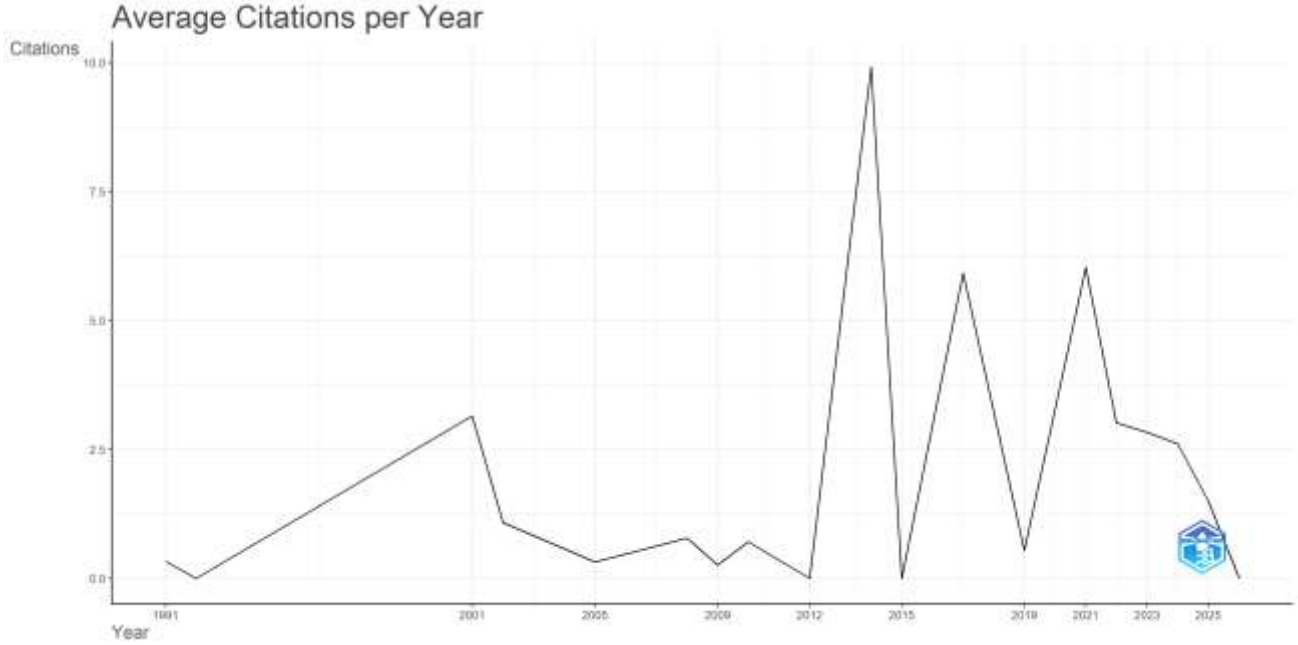

Figure no. 2. Annual citations evolution

Source: Own processing using Biblioshiny

In comparision with Figure no 1., it can be stated that the annual evolution of citations has a much more dynamic trajectory than that of scientific production, however, Figure no. 2 still shows a relatively small number. The peak of the second analysys reaching up to only 10 citations per year. Furthermore, it can be observed that the line shown in Figure no. 2. is currently in a decreasing rhythm, thus remaining to be seen whether the interest in this topic will be more developed in the future or not.

3.2. Trends

Identifying trends specific to the research field is extremely important, especially since the literature seems to be still in its incipient stages. Therefore, with the help of Bibilioshiny, a thematic map was created. The map was structured into the following four main categories: niche themes, motor themes, emerging or declining themes and basic themes. Through this structuring, the software mapped the themes found within the 88 papers based on both their development stage and their degree of relevance (see Figure no. 3).

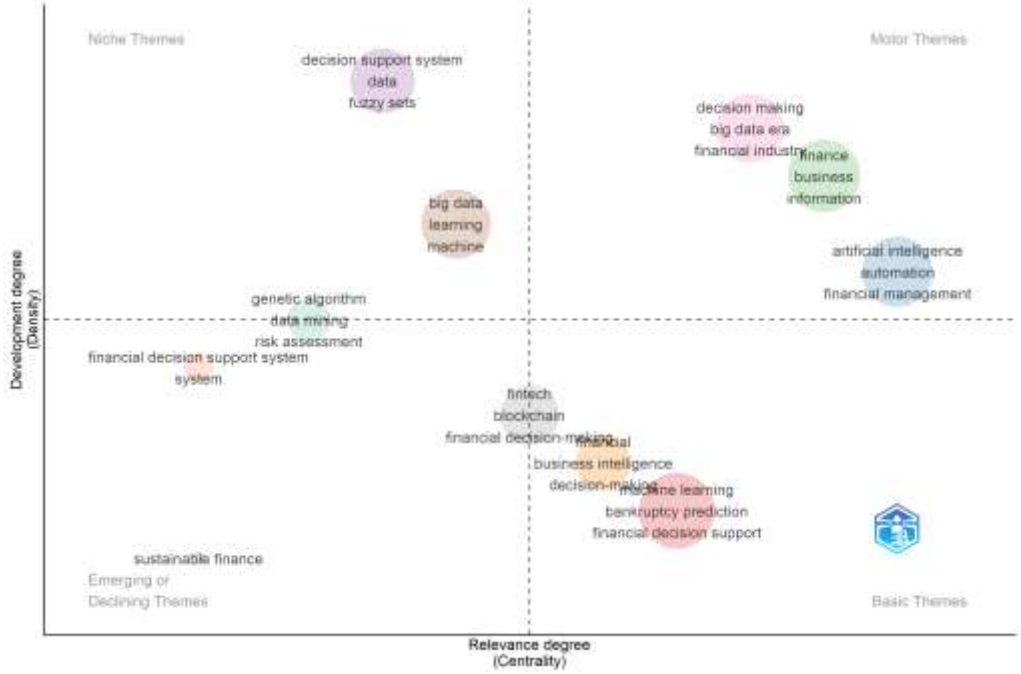

Figure no. 3. Thematic map

Source: Own processing using Biblioshiny

The motor themes quadrant has the highest density and centrality, including the next themes: big data, financial industry, finance business information, AI, automation and financial management. This indicates an accuracy of focus within the 88 papers, addressing issues specific to the research field in question. While comparatively, in a similar study where decision-making for sustainable digitalization is targeted, the thematic map is not as specific, even though the total number of papers in that case rose to 9977 (Crișan et al., 2025). On the emerging topics side, sustainable finance is found. In addition, the topic of financial decision support system indicates that it was studied in the past and is in decline either due to its generalization or absorption under other topics such as machine learning. Niche topics are not surprising with their presence, as they are issues often explored in depth in the literature, while basic topics are certainly the pillars of the field, with fintech and blockchain being present. Subsequently, in order to deepen the trend section, an evolution over time by frequency of trend topics was also carried out (see Figure no. 4).

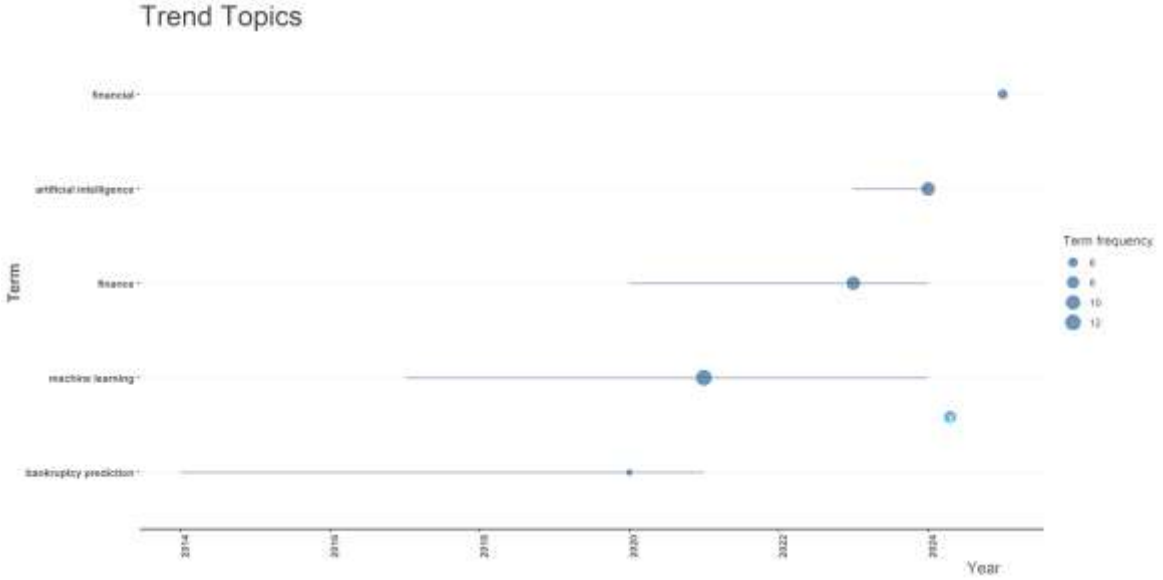

Figure no. 4. Trend analysis

Source: Own processing using Biblioshiny

According to Figure 4, machine learning and AI can be found among the most popular trends for the last 10-11 years. In terms of the distribution of trends by year, it can be said that starting with 2014 and somewhere until 2021, bankruptcy prediction was a main topic, followed by machine learning which started to gain interest around 2017. It is important to note that the terms finance and financial have been approached relatively recently, which confirms once again that the interest in placing financial decisions in the context of digitalization is much more current. Overall, the last figure could indicate an evolution of trends in the field, from bankruptcy prediction through classical methods to its prediction through modern intelligent methods.

4. Conclusions

The research results highlight, first of all, a very small size of the literature focused on the digitalization of financial decisions. Starting from this, the bibliometric analysis determined the evolution of the production of the 88 works, showing in principle as moments of growth of studies, sensitive periods such as the one marked by the economic crisis of 2008 or the one marked by the Covid-19 pandemic of 2020. At the same time, on the citation side the number is also small and in a descent. Regarding trends, the thematic map managed to place the themes in accordance with their relevance, being in this sense important to bear in mind that AI and automation play an important role in current research, along with fintech and blockchain of course. Moreover, the trend topic side confirms the shift from classical to digital-focused study, with topics such as AI and machine learning being more current.

In essence, the results of the paper confirm the emerging stage of research that deepens the idea of the digitalization of financial decisions and, equally, highlights the dynamics of their evolution, especially in major periods. This implies that periods of uncertainty generate a high need to study the most optimal methods for streamlining financial decisions.

However, the study was not free from limitations, these being evident from the very small volume of the dataset generated by the Web of Science Core Collection, which requires future analyses to include other databases such as Scopus. In conclusion, it can be said that the results make a notable contribution by shedding light on a real and interesting situation in the literature, namely by highlighting the fact that the digitalization of financial decisions is not yet of high interest, especially in relation to the digitalization of decisions in general. Overall, they can be used as benchmarks for comparison in future research, intended to help complete the targeted research field.

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