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Digitalization of the Workforce and Implications of Artificial Intelligence: Bibliometric Analysis

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ABSTRACT : The research makes an original contribution by integrating a detailed bibliometric analysis of existing literature on digital transformation. This approach allows the identification of research trends, knowledge gaps and emerging areas in studies on the impact of digitization on the labour market. Using advanced bibliometric methods, the report not only maps the academic landscape, but also highlights the connections between different dimensions of digital transformation, such as human capital, connectivity and digital technologies, providing a solid theoretical framework for further analysis.

Keywords - digitization, labor market, artificial intelligence, bibliometric analysis, productivity

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1. INTRODUCTION

Digitization has become a determining factor in the transformation of the labour market, influencing both the requirements of employers and the skills required by employees. Analysing the relationship between digitalization and the labour market is key to understanding how new technologies, automation and artificial intelligence are influencing job structure, productivity and employment dynamics. This approach enables the identification of changes in employment trends, the adaptation of education and training policies and, last but not least, the development of strategies to ensure a smooth transition to a digital economy. In these studies, the authors investigate the relationship between digitization and the labor market mainly exploring the impact of new technologies on employment, digital skills requirements, and how automation and artificial intelligence are replacing or creating jobs (Bădîrcea, 2021; Manta, 2024; Nicola-Gavrilă, 2023). They also analyze the effects of digitalization on the structure and dynamics of the labor market, including phenomena such as job polarization (increasing demand for high-skilled jobs and decreasing demand for medium-skilled jobs), as well as challenges related to adapting the workforce to new technological requirements. Another aspect investigated is how digitization influences economic and social inequalities, the geographical distribution of jobs and job flexibility.

Bibliometric analysis plays an essential role in evaluating and understanding scientific activity. The importance of this method derives from its ability to quantify and analyze various aspects of research, providing concrete data on the productivity and impact of scientific work. By assessing the number of publications and citations, bibliometric analysis allows the identification of the most influential authors and institutions in a given field, thus contributing to the establishment of hierarchies based on actual contributions.

In recent decades, rapid technological transformations and advances in digitization have profoundly reshaped the global economic landscape, influencing not only the ways in which production and service delivery are carried out, but also the structure and dynamics of the labour market. As organizations integrate new technologies and adopt innovative digital solutions, human capital training and development needs become increasingly complex.

Bibliometric analysis plays an essential role in understanding the evolution of research in a given field, providing a clear picture of significant contributions and emerging trends. This analytical method is based on the quantitative assessment of scientific publications, facilitating the identification of the authors, institutions and papers with the highest impact. By structuring existing knowledge, bibliometric analysis allows new hypotheses and research directions to be formulated, thus creating a solid framework for scientific advancement. Bibliometrics also helps to develop effective policies and strategies, contributing to the development of innovative solutions to current challenges in various domains, such as digitization and the labour market.

An important aspect of bibliometric analysis is its ability to highlight the most influential and relevant studies in a field of research. This process includes identifying authors who have contributed significantly to the development of emerging knowledge and trends. For example, in the area of digitization and the labour market, the work of Daron Acemoglu and Erik Brynjolfsson is considered seminal. They have analyzed the complex interactions between technology and the economy, highlighting how digitization influences job structure and economic performance.

By assessing the impact of citations, researchers can observe not only current trends, but also the historical developments that shaped the field. This helps to better understand the context in which digital technologies are developing and to identify emerging challenges. For example, a recent analysis has revealed that while digitization can lead to increased productivity, it can also lead to a reduction in available jobs, highlighting the need for tailored solutions.

Another key aspect of the bibliometric analysis is to highlight the institutional and geographical diversity in digitization research. The presence of papers published by universities from different regions, including Russia and Eastern Europe, reflects the global nature of the debate and the need for international collaboration in developing solutions adapted to new economic and social realities. This diversity not only enriches research but also facilitates the exchange of knowledge and best practices between different institutions.

2. METHODOLOGICAL ASPECTS OF BIBLIOMETRIC ANALYSIS IN INVESTIGATING THE RELATIONSHIP BETWEEN DIGITIZATION AND LABOR MARKET

Bibliometric analysis is used to evaluate scholarly publications, monitoring impact factors, citations, collaboration patterns, and dissemination strategies of scholarly works, as well as their productivity (Niknejad et al., 2021). In this context, bibliometrics serves as a tool to explore the process of knowledge development and structure in a given research field, and is increasingly being adopted by academics in their studies. With the help of mathematical and statistical methodologies, bibliometrics can be applied in the analysis of diverse literature (Moral-Muñoz et al., 2021).

In addition, bibliometric analysis serves as a valuable tool for policy-makers, providing relevant information for the allocation of resources and the development of strategies to support research. It helps to promote transparency and accountability in assessing scientific performance, ensuring that researchers and institutions are recognized for their contributions. In this way, bibliometric analysis not only improves understanding of the scientific landscape but also supports the advancement of innovation in various fields of study.

Bibliometric analysis allows an innovative approach to literature review, significantly improving traditional literature review techniques by simultaneously examining both the evolution and the state of the art in the field. Bibliometric analysis is performed using bibliometric indicators, which represent mechanisms used to analyze and interpret the collected data (Garrigos-Simon et al, 2019). The main bibliometric measures used in bibliometric analysis include: citation index (the number of citations a scientific publication or author receives); network analysis (identifying and analyzing relationships between different authors, institutions or keywords in

scientific publications); journal impact factor (the influence of a scientific journal in its field); author profiles (data about an author's scientific output, such as number of publications, number of citations, collaborations and others), and other units analyzed.

Thus, bibliometric analysis is often used in the evaluation of scientific research and the performance of research institutions as well as in the identification of emerging research trends and directions by analyzing keyword trends. It is useful because it allows the use of publications and citations to analyze the performance of authors, institutions, countries and journals (Donthu, et al. 2023). Also, the increased interest in such analysis is driven by the fact that the use of such a method allows mapping the intellectual architecture of a literature stream (Rojas-Sánchez et al., 2020), as well as the possibility of using bibliometric software such as VOSviewer, Gephi and the existence of scientific databases such as Scopus, Web of Science Dimensions, Lens and PubMed.
For bibliometric analysis, we used VOSviewer as a tool for scientific mapping. This software is recognized for its ability to "collect scientific publications with considerable impact, serving as an essential criterion in academic decisions" (Jiménez-García et al., 2019). According to the user manual, VOSviewer facilitates the construction and visualization of bibliometric networks, generating maps based on the network data. These networks can include journals, authors or individual publications and can be formed based on citation, co-citation or co-authorship relationships. The program also allows text mining to build co-occurrence networks of relevant terms in scientific literature. VOSviewer analyzes files from bibliographic databases such as Web of Science, Scopus, Dimensions, Lens and PubMed, as well as RIS files used for reference management. The methodologies applied include co-authorship, citation, co-citation and bibliographic linkage, and are intended to illustrate the bibliometric and intellectual structure of the field under study (Baker et al., 2020; Şahin & Bil, 2024). VOSviewer is an efficient tool for network analysis, facilitating the visualization of scientific dynamics and structures (Valenzuela et al., 2017; Van Eck & Waltman, 2010). This program allows researchers to explore networks of connections between research papers and identify emerging trends in the field of interest. According to Zupic and Cater (2015), this method of analysis helps to review the literature, guiding researchers to influential works and objectively mapping the field of study.

In VOSviewer, it is essential to understand the terminology associated with the maps generated. The program allows three types of views: grid, overlay and density. According to the manual, "articles" are the main points of interest, including publications, researchers or terms. In the network, each keyword, author or organization is represented by a circle (node) and its size reflects the number of associated publications. The color of the circles indicates the groups of units under analysis, the length of the curved lines between the circles shows the approximate connection, while their thickness denotes the intensity of the thematic relationships. Each pair of items is connected by a "link", which signifies a relationship between them, and the strength of these links is expressed by a numerical value, reflecting the intensity of the connection. For example, in the case of bibliographic links, the link strength may indicate the number of common references between two publications. Items are grouped into 'clusters', representing sets of items on a map. It is important to note that these clusters do not overlap, with each item belonging to only one cluster, and some items may not be included in any cluster. Clusters are identified by specific numbers.

The bibliometric analysis performed in this chapter is based on data extracted from the Web of Science (WoS) database, with papers identified by the keywords "digitization", "digitization", "labour market", "labour productivity" and "digital transformation", forming pairs between digitization and labour market terms. WoS provided a total of 584 academic papers for the period 1981-2024. The information associated with the database, including records and references, was extracted into a .txt file and subsequently imported into VOSviewer for analysis. In addition to interpreting the VOSviewer maps, we also examined the information available in WoS on year of publication, number of citations, and research field.

Figure 1. Methodological processes in bibliometric analysis
Source: Own processing

In order to better understand the steps, Fig. 1. illustrates the main methodological steps used in the bibliometric analysis. By applying these steps, we have obtained detailed and comprehensive bibliometric analysis, providing a clear picture of the current state of knowledge in our research field.

3. ASSESSING AND MAPPING THE LITERATURE ON DIGITIZATION AND THE LABOUR MARKET

3.1. ASSESSING PUBLICATIONS AND CITATIONS IN THE CONTEXT OF DIGITIZATION AND IMPACT ON THE LABOUR MARKET

The analysis of publications and citations over time in the field of the relationship between digitization and the labour market provides valuable insights into the evolution of research in this sector. This allows the identification of emerging thematic trends, such as the impact of digital technologies on workplaces and the adaptation of skills needed in the new digital age. The relevance of scientific work can be assessed by the number of citations, indicating its influence in academic and professional debates.

Another important dimension of the analysis is the comparison of time periods, which allows to observe how perceptions and studies on digitization and the labour market have changed over time in the context of global economic and technological change. In addition, this type of analysis helps to identify gaps in research, thus bringing attention to under-explored areas that may represent opportunities for future studies.

Therefore, the analysis of publications and citations not only enhances our understanding of the dynamics between digitization and the labor market, but also facilitates the formulation of appropriate policies and strategies to respond to the challenges and opportunities brought about by digital transformations

3.2. IDENTIFYING THE CO-CITATION NETWORK OF THE CITED AUTHORS

We analyzed authors' citations by applying a threshold of minimum 5 citations, which allowed us to highlight the most influential and prolific authors in the field of economic and technological research. Out of a total of 4,445 identified authors, we identified 54 authors who met this criterion. These authors have not only made significant contributions to the literature but have enhanced their status through the impact of their work on contemporary discussions. This selection emphasizes the relevance and diversity of the topics covered and the importance of their contributions in shaping the future of these fields. The 54 authors have been grouped into 5 clusters: cluster 1 (red) with 19 items, in this case authors; cluster 2 (green) with 13 authors; cluster 3 (blue) 12 authors; cluster 4 (yellow) eight 8 authors and the last cluster (purple) 2 composed of 2 authors. Author clusters are formed by analyzing the links and co-authorship relationships between researchers using network visualization methods. These clusters reflect collaborations and connections between authors who have co-published or worked on similar topics.

In analyzing the citations of authors in the field of economic and technological studies, a clear hierarchy emerges, emphasizing the relevance and influence of the various contributions. D. Acemoglu, with an impressive 43 citations, emerges as a clear leader in this field. This underlines not only the quality of his work, but also the profound impact of his theses on contemporary economic debates. Acemoglu is recognized for his work on political economy, inequality and the impact of technology on the labor market, which explains the high interest of researchers and policy makers in his contributions.

The ranking is followed by E. Brynjolfsson, with 37 citations, retains a prominent position, due to his research on the digital economy and the impact of information technologies on productivity. His work is fundamental to understanding how technological innovation is transforming markets and jobs, making him an essential author for those exploring the intersection between technology and economics.

The OECD organization, with 31 citations, plays a crucial role in providing relevant analysis and statistics with a significant impact on international economic policies. This indicates that data-driven research and comparative studies are essential for effective policy formulation and understanding global trends.

On the other hand, D.H. Autor and the European Commission, with 28 and 24 citations respectively, suggest a considerable influence in policy and academic debates, highlighting the importance of institutional contributions in the formulation of economic strategies at the European level.

Even though authors such as Frey, CB and Schwab, K. have a lower number of citations (18 and 14), their contributions are still relevant and reflect interest in issues such as automation and the future of work. This suggests that their work addresses emerging themes that deserve increased attention. Schwab is also Founder of the World Economic Forum. Schwab, and his citations reflect interest in his ideas on digital transformation and its impact on society.

In ninth place is M. Arntz (13 citations), his work focuses on automation and its impact on workplaces. The citations suggest that his studies contribute to understanding the challenges that automation brings to the economy. With 11 citations ranks K. Dengler, his contributions focus on research related to work and technologization. Although his citations are lower, the relevance of his work is confirmed by the impact it has on discussions about the future of work. Although authors such as Dengler and others, with a smaller number of citations, may seem less influential compared to the more cited, their contributions should not be underestimated. The World Bank, for example, provides essential statistical data for economic research, making it easier to understand economic trends around the world. This underlines the importance of a solid database in informing economic studies.

Similarly, Goos and Dengler's research addresses relevant topics such as automation and its impact on workplaces, critical issues in contemporary discussions about the future of work. Even if they have a lower number of citations, their work can bring innovative insights and contribute to forming a more comprehensive understanding of emerging issues.

Thus, even authors with fewer citations have the potential to influence debates and make valuable contributions. It is important to recognize that academic impact is not only measured by the number of citations, but also by the relevance and originality of their research. These contributions can open new research directions and provoke important discussions in the scientific community.

In conclusion, the citation analysis highlights the main actors in the field of economic and technological research, emphasizing their significant contributions to our understanding of the complexity of interactions between technology, economics and policy. These authors not only define current trends in these fields, but also influence the development of innovative solutions to contemporary challenges. Acemoglu, Brynjolfsson and OECD are recognized leaders whose work is considered fundamental to understanding the challenges and opportunities in today's global economy. These authors provide a solid basis for future discussions and innovative policy formulation, thus contributing to the continued evolution of this dynamic field.

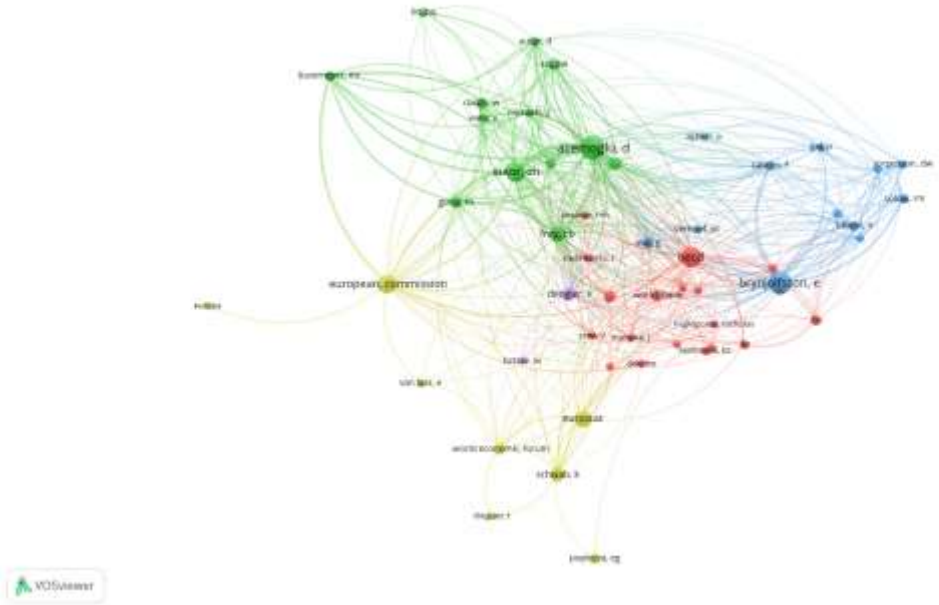

Figure 2. Co-citation network of cited authors
Source: author's processing in VOSviewer

The maps on the co-appearance of the most cited authors highlight vital sources of knowledge and expertise in the field of economic and technological research. The 54 identified authors not only enrich literature, but their significant contributions also facilitate the understanding of contemporary complexities. By addressing key topics such as the impact of technology on the economy, economic inequalities and labor market transformations, these authors become indispensable for future studies and analysis. Their works are frequently cited in public policy formulation, suggesting that they have a direct impact on economic and social decisions. Their research also encourages interdisciplinary collaborations, highlighting the importance of integrated approaches in analyzing complex problems.

Thus, authors with citations above the threshold of 5 are essential for any research endeavor, providing both empirical data and theoretical frameworks necessary for the development of further studies. In conclusion, these authors are not only prominent figures in the academic community, but also crucial sources for documenting and deepening knowledge in the economic and technological fields, having a significant impact on the future of research in these areas.

3.3. SCIENTIFIC MAPPING OF THE MOST CITED PAPERS

As part of our analysis, we have previously surveyed the contributions of authors and author collaborations in the field of the relationship between digitization and the labour market. This analysis allowed us to identify the most influential researchers and highlight the co-authorship networks that dominate the topic.

Now, in the next stage of the research, we aim to explore the most cited papers in order to understand in more detail the main themes addressed by these studies and their impact on literature. Analyzing the papers with the highest number of citations will provide us with a clear picture of the main research directions in the field and the topics that have attracted the most attention from the scientific community. This approach will also help us to identify the most relevant studies that have contributed to the formulation of policies and solutions regarding digitization and labour market transformations.

Given that the total number of papers identified in our analysis is 584, we applied a threshold of a minimum of 5 citations per paper to highlight the most cited studies. This filtering allows us to focus on papers that have had a significant impact in the field, providing a solid basis for more detailed analysis.

By selecting the most cited papers, we can identify the key elements that define the major research on the relationship between digitization and the labour market. These papers not only provide essential insights into

digital transformations and their impact, but also reflect the most influential contributions in the field, being valuable sources for understanding the research directions and formulating relevant policies.This approach helps us to uncover the dominant themes, methodologies used and solutions proposed by leading researchers, providing us with a solid basis for understanding current trends and challenges in this complex field. As a result, 39 papers had a minimum of 5 citations, grouped into 33 distinct clusters (Fig. 3). The large number of clusters is explained by the diversity of topics addressed in these papers and the different co-authorship and collaborative relationships between researchers. This fragmentation into several clusters suggests that research on the relationship between digitization and the labour market is broad and multidisciplinary. The authors and papers in these clusters explore topics ranging from the impact of digitization on productivity and employability to labour market transformations under the influence of new technologies. These clusters may also reflect geographical, cultural or methodological differences in how different researchers approach this complex topic.

Figure 3. Co-appearance of most cited papers
Source: author processing in VOSviewer

The main findings of the analysis are presented below, with the articles arranged in descending order according to the number of citations.

The paper with the most citations (141 citations), is "The effects of digital transformation on innovation and productivity: Firm-level evidence of South African manufacturing micro and small enterprises", by C. Gaglio et al. in 2022. This paper examines the relationships between the use of digital communication technologies, innovation and productivity in South African SMEs. Using an extended Crepon-Duguet-Mairesse (1998) model (Crepon-Duguet-Mairesse, 1998) and data from a 2019 survey of 711 manufacturing SMEs in Johannesburg, the research sequentially estimates the link between digitalization and innovation, and then between innovation and productivity. Results show that digital technologies, such as social networks and business mobile phones, have a positive impact on innovation and thus on labor productivity. It suggests that public policies should promote digital technologies that are accessible and relevant to SMEs, including those operating informally.

The next paper with the most citations (76) is "Does technological innovation bring destruction or creation to the labor market?" published by Su et al, (2022). The study used bootstrap-rolling-window causality test to analyze the relationship between technological innovation, measured by the number of patents (IP), and new employment opportunities (NE), over the period 2013:M01-2021. The results show that technological innovation can stimulate the labor market, but the substitution effect of employees tends to outweigh the job creation effect. Thus, NE has a negative impact on IP, suggesting that the labor market may influence innovation. In the context of digitization in China, short-term employment can bring a new impetus.

The third most cited paper is "Digital transformation, development and productivity in developing countries: is artificial intelligence a curse or a blessing?" published by H. Aly in 2022. This paper explores the relationship between digital transformation as part of the fourth revolution and AI trends and its impact on economic development, labor productivity and employment.

The next ranked paper is "Labor market risks of industry 4.0, digitization, robots and AI" by Rajnai et al, 2017, with 44 citations. The authors point out that digitization is transforming the world, and Industry 4.0 and digitization of manufacturing are fundamentally changing the labor market. The rapid development of Fourth Industrial Revolution technologies brings major challenges for society and policy makers. Automation raises questions about job losses and the competitiveness of the human workforce in the face of machines. It remains to be seen whether the new areas and types of jobs will compensate for the loss of traditional ones in the labor market.

In 5th place is "Input digitalization and green total factor productivity under the constraint of carbon emissions" by authors G. Li and F. Liao, 2022, with 41 citations. This study explores the impact of digitization on green total factor productivity (GTFP) under the constraint of carbon emissions, using data from the World Input-Output Database (WIOD). The results show that digitization contributes significantly to improving low-carbon GTFP, especially in middle-income countries and manufacturing and service industries, but has no significant effect on agriculture. The study reveals that digitization improves energy efficiency and labour productivity, thus contributing to the growth of green GTFP. The localization and globalization trends of digitization also play an important role in this process.

With 35 citations, "At Your Service on the Table: Impact of Tabletop Technology on Restaurant Performance" by T. F. Tan and S. Netessine (2019) ranks 6th. This study investigates the impact of customer-oriented technology on productivity in the restaurant industry using a tabletop device that facilitates the serving process. The data is analyzed using a difference-in-difference approach due to the staggered implementation of the technology in a restaurant chain. The results show that tabletop technology increases average sales per check by about 1% and reduces meal duration by nearly 10%, leading to an 11% increase in sales productivity. The study emphasizes that technology especially helps lower-performing waiters without affecting staffing levels. These findings highlight the significant potential of digitalization in the service industry.

"Digitalization and Labor Market-A Perspective within the Framework of Pandemic Crisis" Published by G. I. Piroșcă et al. in 2021, it has 34 citations. The authors highlight the significant changes that the current pandemic crisis has in the economy, emphasizing the importance of digital skills for the rapid adaptation of the workforce to new conditions. In a turbulent environment characterized by automation, robotization and digitalization, the pandemic has put pressure on the labour market, amplifying the need for economic reshaping and integration of current technological trends. Even before the pandemic, researchers and policy makers were already concerned about the volatility of employment and its difficulties to adapt. This paper examines the impact of digital efficiency on the future development of the labor market in EU Member States, highlighting the strong correlation between wages, digital skills and internet use. The results suggest that investing in increasing the digital skills of individuals is essential for a more efficient and flexible labor market.

In 8th place with 33 citations was "How Big is the Gig? Assessing the Preliminary Evidence on the Effects of Digitalization on the Labor Market" published in 2017 by W. Eichhorst, et al. This paper examines the significance of digitalization in Germany and other developed countries, focusing on its impacts on the labor market. Using empirical evidence, the authors examine the transformations in occupations and forms of employment, as well as the influence of the platform economy and solo self-employment. They also identify current and future challenges for social protection and propose adjustments to social security systems to respond to these new realities.

An equal number of 31 citations recorded both "Impact of Digital Technologies on Labor Market and the Transport Sector" by R. Chinoracký and T. Čorejová (2019) and "The impact of ICTs and digitalization on productivity and labor share: evidence from French firms" by G. Cette, et al. (2021). The first paper focuses on the analysis, definition and characterization of the impact of digital technologies on the labor market, especially in the transport sector. And the second paper analyzes the impact of hiring ICT specialists and the use of digital

technologies on productivity and labor share in 1,065 firms in the manufacturing sector in France. Results show that hiring ICT specialists and using digital technologies improve labor productivity by 23% and total productivity by 17%. Also, Hiring in-house ICT specialists and the use of big data reduce labor share by 2.5 percentage points. These findings suggest an increase in productivity as a result of digitization, but also a possible reduction in the number of employees.

The rest of the papers had a number of citations below 30, but we cannot neglect their contribution in the field of the relationship between digitization and the labour market.

An analysis of the literature on the impact of digitization on the labour market, based on the most cited papers, highlights several relevant trends and features. First, most studies show a positive correlation between the use of digital technologies and productivity growth. For example, research by C. Gaglio et al. (2022) highlights how digitalization positively influences innovation and productivity in South African SMEs. Similarly, the study by G. Cette et al. (2021) shows that hiring ICT specialists significantly improves labor productivity in manufacturing firms in France.

Despite these benefits, the results also suggest significant challenges for the labor force. For example, the study led by Su et al. (2022) indicates that technological innovation can create jobs, but the substitution effect of employees tends to outweigh the job creation effect. This observation is supported by the research of Rajnai et al. (2017), which highlights labour market risks in the context of digitization and automation. This work suggests that while digitization contributes to increased economic efficiency, it may also lead to a reduction in the number of available jobs.

Another important trend is the need to adapt social protection systems to new economic realities. Authors such as G. I. Piroșcă et al. (2021), emphasize the importance of digital competences in the context of the pandemic crisis, indicating that they are essential for the rapid adaptation of the workforce to the emerging requirements. Thus, it emerges an urgent need to invest in training and developing employees' digital competences to meet the challenges generated by digitalization.

In conclusion, the existing literature suggests that digitization is a profoundly transforming factor in the labour market, generating both opportunities for productivity growth and challenges related to job losses. It is essential that public policies focus on supporting accessible and relevant digitization for SMEs and promote initiatives that facilitate the development of digital competences among employees. This approach will help build a more flexible and efficient labor market in the face of continuous technological change.

3.4. Analysis of the evolution of papers and number of citations

According to the analysis of the most cited papers, most of the relevant publications appeared between 2019 and 2022. In this section, we aim to conduct a detailed analysis of the evolution of the appearance of these papers, as well as the number of citations, to identify when interest in this topic increased and to determine which year was the most prolific in terms of research publications on this topic. Analysis of the evolution of published work and citation counts in the area of the impact of digitization on the labour market reveals important trends and significant changes. Such analysis is crucial for identifying emerging trends in research. By looking chronologically at the emergence of papers, we can see how technological developments and economic challenges have influenced the topics of interest.

Establishing the years with the most published papers helps to identify the key moments that have generated increased interest in digitization. This information is useful for researchers and practitioners who want to understand how to address emerging challenges and capitalize on opportunities created by new technologies. In addition, this data can facilitate collaboration between researchers in related fields, contributing to the development of joint projects and the advancement of knowledge in the field.

Finally, such analysis can inform public policy. Authorities can use this information to adapt policies to the emerging needs of the labor market, ensuring an efficient transition to a digital economy. Knowledge of publication trends and most cited works can provide a useful guide for policy makers in formulating future strategies.

As a result, analysis of the evolution of papers and citations is essential to understand the impact of digitization

on the labour market. It provides valuable insights for future research and helps inform policy decisions in this rapidly changing field.

To carry out this analysis, we used the data provided by Web of Science, focusing on the evolution of publications in four main groups: "digitalization and labor market", "digitalization and labor productivity", "digitization and labor market" and "digital transformation and labor market". This division was chosen in order to identify possible distinct trends in the relationship between digitization and different aspects of the labour market. In doing so, we aimed to observe whether there are significant variations in the types of research carried out and in the directions of interest of the academic community. For example, the analysis of the terms 'digitalization' and 'digitization' may reveal differences in how researchers approach the technological impact on the labour market, as these concepts may reflect different aspects of digital transformation. Also, the inclusion of the concept of "labor productivity" allows us to investigate the extent to which research focuses not only on employment impacts, but also on labor efficiency and labor productivity. As a result, examining these clusters gives us a clearer perspective on the evolution of research interest and directions in the field.

Fig. 4 illustrates the evolution of the number of publications and citations in the field of "digitalization and labor market", highlighting significant trends in academic research on this topic.

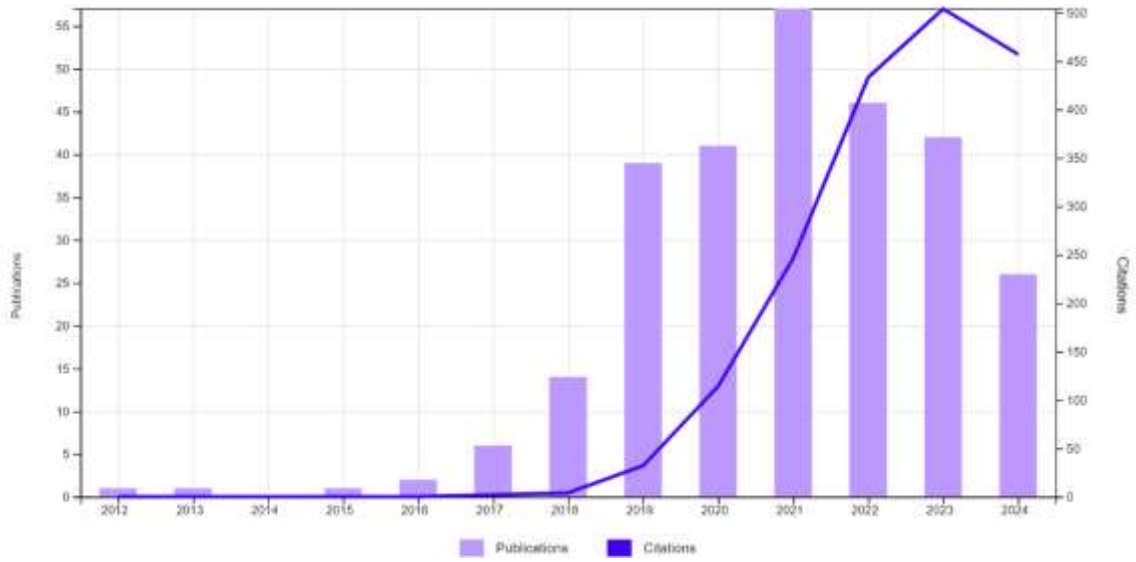

Figure 4. Evolution of the number of papers and citations in the field of: "digitalization and labor market"
Source: Web of Science

We note that the first ISI publication in this field appeared in 2012, marking the beginning of a new research direction. However, interest in the topic becomes really evident from 2017 onwards, when more than 15 papers are published. This growth can be correlated with accelerated technological advances and a growing awareness of the impact of digitization on the labour market. It is a time when, amid the rapid development of digital technologies, researchers are beginning to explore the effects of these changes on occupation, job quality and labor market structure.

The upward trend in the number of publications continues until 2021, when a peak of 55 papers is reached. This suggests an explosion of academic interest as organizations and governments begin to implement policies to respond to the challenges and opportunities brought by digitization. The increase in the number of publications may also be influenced by changes in the business environment and the need to adapt the workforce to new technological requirements.

Since 2021, we observe a slight decrease in the number of publications, with 28 papers published by 2024. This trend can be interpreted as a normalization of interest, as the subject becomes better understood and research focuses on deepening already accumulated knowledge rather than exploring completely new topics. It could also indicate a saturation of research on certain sub-topics, which may lead researchers to move in other

emerging directions.

In terms of citations, they have shown an increasing trend until 2023, reaching 500. This increase emphasizes the relevance of the published papers and the impact they have on the scientific community. Although 2024 shows a slight decrease in citations, the number remains impressive at 450 citations. This suggests that although research interest may fluctuate, previous work continues to be cited and to influence new research, reflecting the significant contribution of this field in understanding the interactions between digitization and the labour market.

In conclusion, the analysis of the evolution of publications and citations in the field of "digitalization and labor market" indicates a substantial increase of interest in this topic in the last decades, influenced by technological advances and changes in the structure of the labor market. This trend suggests that the field remains relevant and growing, providing a solid basis for future research.

To broaden the scope of investigation, we also analyzed articles on "digitalization and labor productivity", considering that this term is a relevant complement to the field, with the potential to broaden the perspective on the interaction between digitalization and work efficiency. Fig. 5 thus illustrates the evolution of publications and citations in this area. Compared to the previous graph, we observe that the first paper in the area of "digitalizationand labor productivity" was published in 2012, similar to the trends in the previous analysis. However, the peak of publications reached in 2022, with 16 papers published, after which a decline follows. This fluctuation suggests an instability in research interest, indicating that while digitization remains a topic of interest, papers on productivity do not benefit from continuous development, but are characterized by variability.

On the other hand, the number of citations does not align with the publications' trajectory. The first significant citations appear in 2021, and between 2022 and 2024 the most citations are recorded, reaching a total of 180. This dissociation between publications and citations suggests that, although the number of papers is not consistent, those published have had a considerable impact on the academic community and are recognized as having made valuable contributions.

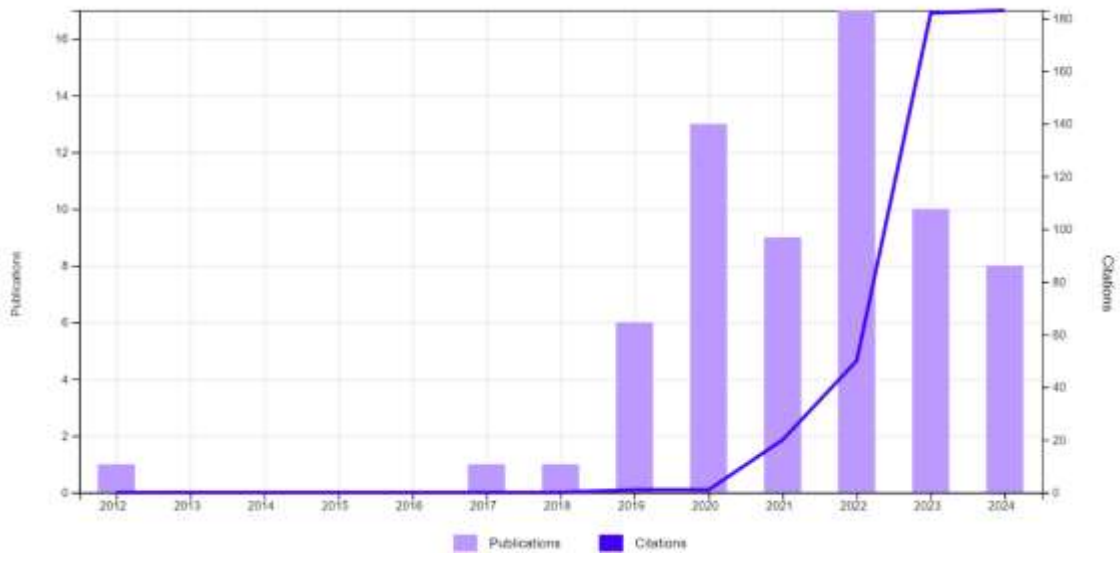

Figure 5. Evolution of the number of papers and citations in the field of: "digitalization and labor productivity"

Source: Web of Science

In conclusion, the analysis of the articles on "digitalization and labor productivity" highlights not only a complementary area of investigation, but also a different dynamic of academic interest. This diversity in research approaches suggests that, although digitization influences labour productivity, discussions in this area may require a more nuanced approach tailored to the current economic and technological context.

Next, we conducted an analysis of publications and citations in the area of "digitization and labor market." According to Chart 4.6, interest in this topic started to gain attention in 2017, with the first ISI publication registered. The year 2023 stands out with a record number of publications, reaching 8, followed by 2022 with 7 papers. This upward trend suggests a steady growth of interest in the topic of digitization in the context of the labour market, demonstrating an expansion of research in this direction.

The number of citations also reflects an upward trend, with a reversal observed in 2021, followed by a favorable adjustment of this trend. This indicates that, despite fluctuations, published works in this area are gaining recognition and influence in the academic community, contributing to the formation of a solid knowledge base in the field. An important point to note is that articles investigating the relationship between digitization and the labor market are significantly more numerous than those focusing exclusively on "digitization and labor market." This suggests that the concept of digitization in the context of the labor market is better understood and documented, whereas research devoted exclusively to digitization issues is a relatively new and less explored area. This discrepancy underlines the potential for further development of the field, highlighting opportunities for future research examining more deeply the impact of digitization on various dimensions of the labour market.

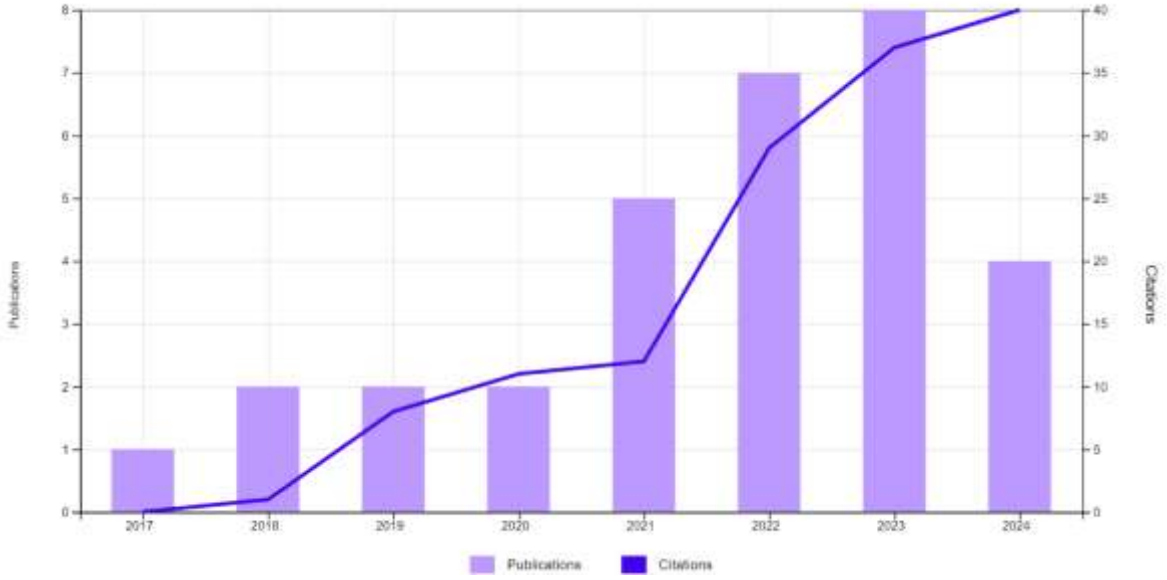

Figure 6. Evolution of the number of papers and citations in the field : "digitization and labor market"
Source: Web of Science

Digital transformation is often seen as a substitute for the concept of digitization, which is also reflected in the publications identified in this review. Thus, it can be observed that some authors have chosen to use the term "digital transformation" rather than digitization, focusing on the impact that digital transformations have on the labour market. This trend was highlighted by a graph generated from the Web of Science database, represented in Fig. 7.

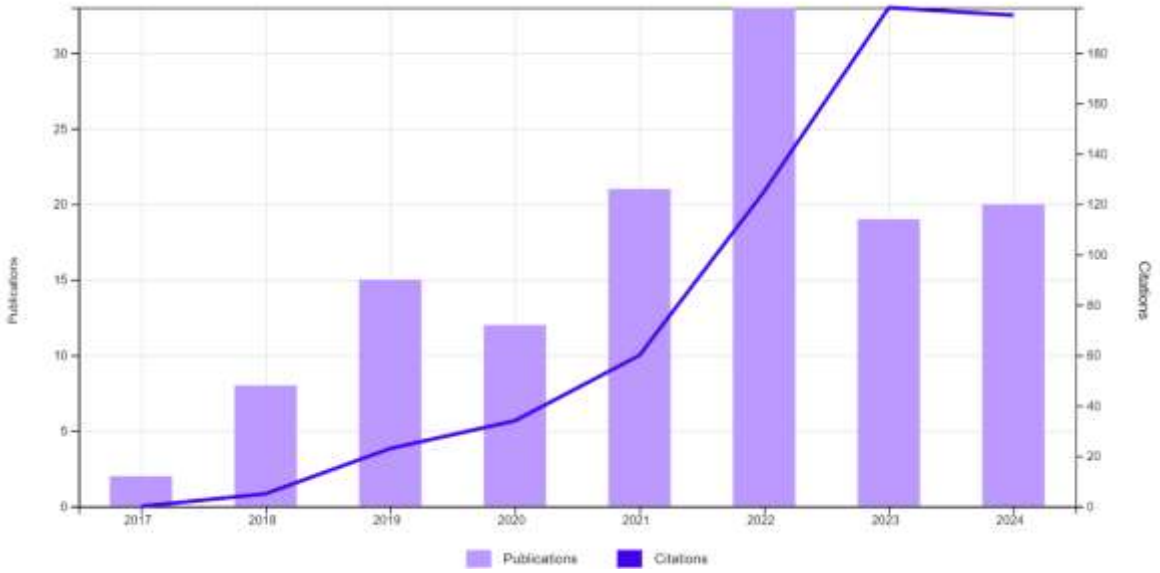

Figure 7. Evolution of the number of papers and citations in the field: "digital transformation and labor market"

Source: Web of Science

According to the graph, the first publication in this field appeared in 2017, marking the beginning of a period of growing interest. This upward trend culminated in 2022, when the highest number of publications was recorded, reaching 35. This explosion in publication activity suggests a growing awareness of the relevance of the digital transformation and its influence on economic and social structures, particularly in the context of the labor market.

However, starting in 2023, a decrease in the number of publications has been observed, with 18 papers registered in that year and 20 expected in 2024. This reduction may indicate a stabilization of interest or a shift in research focus to other complementary areas. On the other hand, the number of citations has been steadily increasing throughout the period analyzed, suggesting that despite fluctuations in the number of publications, existing work continues to have a significant impact in the field.

This dynamic suggests a maturing of research in the field of digital transformation, with an increasing focus on its application and evaluation of its effects in practice. It also underlines the importance of further research in this area, given the emerging challenges and opportunities associated with the digital transition of the labor market.

Findings on the evolution of the number of publications and citations in the analyzed fields highlight significant trends related to digital transformation and its impact on the labor market. First, increasing interest was observed in the period 2017-2022. This period marked a considerable expansion of research related to digitization and digital transformation, especially in the context of Industry 4.0. This trend was driven by rapid technological developments and the integration of advanced technologies into industrial and economic processes.

The pandemic has also accelerated the transition to digital solutions across all sectors, generating increased interest in digitization and digital transformation studies. Many organizations have quickly adapted to the new realities, leading to an increase in publications in these fields. Thus, the evolution of publications is closely linked to global trends such as accelerated digitalization in the context of Industry 4.0 and the need to adapt to new economic and social conditions generated by global crises such as pandemics.

However, although there was a peak in publications in 2022, the decline in 2023 and 2024 suggests a stabilization of interest or a migration of research to other emerging topics. This fluctuation may be influenced by factors such as the saturation of the research market or a focus on implementation and evaluation of previous research results.

Despite fluctuations in publication, citations have continued to increase, indicating the relevance and importance of the research conducted. This suggests that previous work has had a significant impact on academic and practice discussions in the field.

In conclusion, the analysis of the evolution of publications and citations suggests a complex dynamic interest in digitization and digital transformation, influenced by technological, economic and social factors. Further research in this area will be essential for understanding the long-term impact of these transformations on the labor market and society as a whole.

3.5. KEY INSTITUTIONS IN DIGITIZATION AND LABOUR MARKET RESEARCH

The analysis of institutions that publish research on the relationship between digitization and the labour market is essential, as it allows us to highlight those organizations that pay particular attention to this crucial topic. Identifying these institutions provides us with a deeper understanding of the research directions and priority themes that contribute to knowledge formation in the field.

Through this analysis, we have identified the main institutions influencing contemporary debates, and this is fundamental for informed policymaking. A clear understanding of the contributions of these institutions can facilitate the development of innovative solutions that respond to emerging challenges related to digitization and labour market transformations.

Thus, by highlighting the institutions active in this field, we contribute not only to enriching specialized literature, but also to creating a framework conducive to the development of effective strategies adapted to current economic and social needs. This analysis thus becomes a valuable tool for policy makers, researchers and practitioners, supporting the transition towards a more sustainable and equitable digital economy. Analysing the institutions with input in the field of the relationship between digitization and the labour market, there is a significant diversity in the number of papers published and citations obtained, which reflects the degree of involvement and influence of each institution in the field of the relationship between digitization and the labour market.

We applied a minimum threshold of two publications to highlight institutions with significant research activity on the relationship between digitization and the labour market. Of the 225 institutions analyzed, 33 exceeded this threshold, demonstrating an active and sustained interest in this field of study. Even if only about 10% of the institutions exceed this threshold, the large number of institutions that have published work in this sector reveals the growing attention being paid to the subject. This reflects the importance of digitization and its impact on economic and social transformations, underlining the need to understand and address these changes. Also, the concentration of research in certain centres of excellence suggests that some institutions are playing a key role in shaping the academic and policy agenda in relation to the digitization of the labour market. We note that, in addition to the number of publications, Vosviewer pemritrite also analyses (links) co-authorship analysis between institutions, an analysis that allows for the level of collaboration and interconnectedness between different academic and research organizations. First, co-authorship relationships between institutions in different countries underline the trend towards internationalization of research in this field. Institutions that collaborate frequently at the global level have a greater impact, being connected to international knowledge networks and influencing debates on digitization and its impact on the labour market.

Another important aspect is dissemination and knowledge transfer. Co-authorship between institutions shows the exchange of ideas and expertise between different organizations, which contributes to the development of innovative research and informed solutions. Through such collaborations, research results are disseminated more effectively and can be more quickly applied in practice, facilitating adaptation to the transformations brought about by digitization in the labour market.

The co-authorship analysis also highlights the concentration of resources in certain institutions which, due to frequent collaborations, tend to become centers of excellence. These institutions attract more financial and human resources, thus strengthening their position as leaders in research on the impact of digitization on work and the economy. This can lead to the creation of innovation hubs that directly shape the directions of research and development in this field.

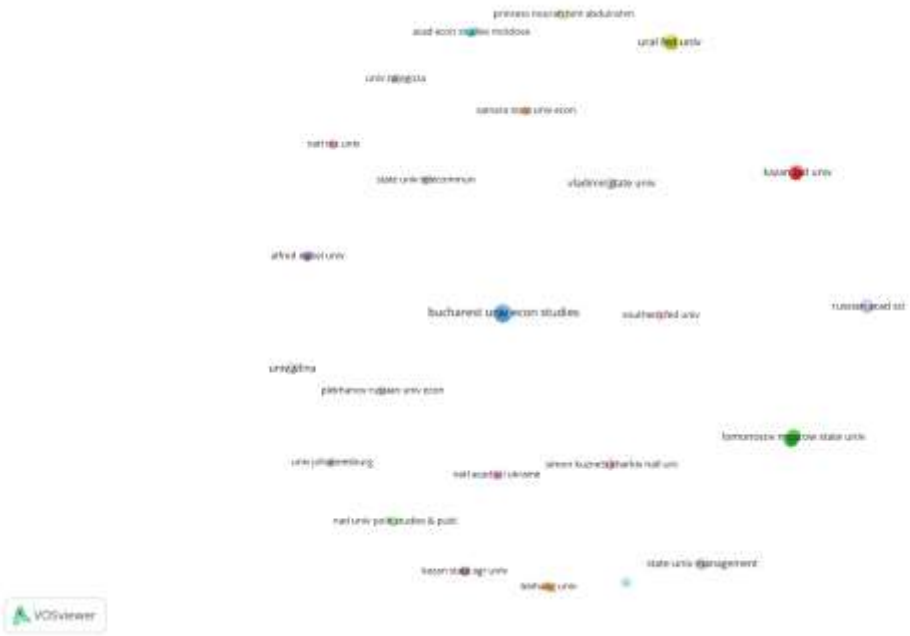

Figure 8. Mapping the most prolific institutions
Source: author processing in VOSviewer

The frequency of collaborations between institutions may also be an indicator of their academic influence. Institutions with many co-authors tend to be more visible and play a key role in the formulation of public policies related to digitization and the labour market. These interdisciplinary collaborations generate well-informed solutions and make a significant contribution to academic and policy debates in this field. However, in the case of research on the relationship between digitization and the labour market, as shown in Fig. 8, no international collaborations between research institutions were identified.

Analyzing the institutions that exceed the threshold of 2 publications (Fig. 4), there is a significant diversity in terms of both the number of institutions and the number of documents published, which reflects the degree of involvement and influence of each institution in the field of the relationship between digitization and the labour market.

Bucharest University of Economic Studies (Academia de Studii Economice din București), with 6 publications, tops the list, indicating a significant involvement in exploring the economic effects of digitalization. As one of the leading economic institutions in Romania, this volume of research emphasizes the active role of the university in understanding labor market transformations caused by new technologies.

Ural Federal University and Lomonosov Moscow State University, with 5 and 4 publications, respectively, are major players in Russia with a considerable focus on the digitization of the economy and its impact on the workforce. Their involvement underlines Russia's contribution in analyzing technological change and adapting the labor market to new digital realities.

St. Peter the Great St. Petersburg Polytechnic University, Kazan Federal University and the Russian Academy of Sciences, with 4 publications each, reflect a strong academic research network in Russia concerned with digitization and how it influences both employment structure and skill requirements. These institutions stand out for their technological expertise and interdisciplinary approaches.

The Financial University under the Government of the Russian Federation and the St. Petersburg State University of Economics, with 3 publications each, are institutions exploring the economic impact of digitization, highlighting the financial and macroeconomic aspects of the transition to the digital economy. Their involvement reflects a concern for how economic and financial policies can support this transition and minimize negative effects on the labour market.

Russian State Social University, Bashkir State Agrarian University and State University of Management, with 3

publications each, address the social and managerial impact of digitization, contributing to the development of new models of work management and the adaptation of skills in the context of digital transformations.
The State University of Management, Moscow and Vladimir State University, also with 3 publications each, are involved in research related to the digitization of education and lifelong learning, which is essential to prepare the workforce for new technological challenges.
Although with fewer publications, institutions such as the National Scientific Research Institute for Labour and Social Protection, Alfred Nobel University and the National Research University Higher School of Economics, each with 2 publications, play an important role in social and economic policy research related to digitization and labour protection. These contributions are crucial for the development of legislative frameworks to protect workers in the face of technological change.
In the analysis of institutions that have published papers on the relationship between digitization and the labour market, there is a significant presence of Russian universities and research institutions. Institutions such as Ural Federal University, Lomonosov Moscow State University, Peter the Great St. Petersburg Polytechnic University and Russian Academy of Sciences, among others, contribute substantially to research in this area, with 3 to 5 publications each.
This massive presence of Russian universities can be explained by the particular attention paid in Russia to the impact that digitization has on the labour market and the national economy. Russia, as an emerging economy, has invested heavily in digital technologies and IT infrastructure, which has led to significant changes in the structure of the labor market. Russian universities and research institutes are thus focusing on understanding these changes, as Russia's economic and social policies need to keep pace with rapid digital transformations.
In addition, academic research in Russia is often geared towards identifying solutions to the challenges posed by digitization, such as the need to retrain the workforce and adapt to new technological requirements. Therefore, these universities play an important role in formulating policies and strategies to support both the government and companies in the process of integrating digitization into economic and social sectors.
The analysis of the institutions that have published papers in the field of the relationship between digitization and the labour market reveals a diverse landscape, with institutions from different regions, especially Russia, playing a central role. The significant presence of Russian universities underlines their concern for the impact of digitization on the economy and the labour market, reflecting efforts to find solutions to emerging technological challenges.
On the other hand, institutions in Romania, such as the Bucharest University of Economic Studies, and other universities in Eastern Europe are making valuable contributions in this field, indicating a regional concern for the adaptation of national economies to new technological realities. The involvement of academic institutions from different regions of the world reflects the global nature of the debate on digitization and the labour market.
This institutional and geographical diversity contributes to better-informed policy-making and the development of innovative solutions for adapting the workforce to the challenges of digitization. Taken together, these institutions serve as vital sources of knowledge and research, facilitating an understanding of the complexities of the digital transition and providing important benchmarks for governments and organizations in addressing the impact of digitization on the economy and work.
In conclusion, all these institutions identified contribute significantly to the understanding of the relationship between digitization and the labour market, providing diverse perspectives, both economic, social and managerial. This diversity of research reflects the global importance of the topic and the need for international collaboration to effectively address emerging challenges.

3.6. KEYWORD CO-OCCURRENCE MAPPING

The occurrence of keywords in various studies can provide essential clues about the main research directions for future investigations (Pesta, B. et al., 2018). Using the visualization program VOSviewer, it is possible to generate a co-occurrence network of keywords, represented as a dimensional map (Anand A. et al., 2020). This program allows us to create a keyword map, both by automatic selection based on the frequency of occurrences in the text and by analyzing keywords suggested by authors (Khatib S. et al., 2023).

Fig. 9 shows the map of keywords suggested by the authors, with a minimum occurrence threshold set at 2. This criterion allows us to visualize most of the keywords included in the "keywords" section. The result is a network consisting of 75 terms, out of a total of 516 keywords suggested by the authors, being grouped into 11 clusters. This indicates a significant diversity of keywords used in the literature on this topic, given that only 14.53% of them appear in at least 2 papers.

Keyword frequency analysis reveals a significant focus on key concepts related to digitization and the labour market. The word 'digitization' tops the list with 51 occurrences, indicating that it is a central topic in recent research. This suggests an increased focus on digitalization processes and their impact on various economic and social aspects. The following words, "labor market" (38) and "digital transformation" (36), underline the direct connection between digitalization and labor market dynamics. This suggests that researchers are interested in how digitalization influences the structure and functioning of the labour market.

Terms such as "digital economy" (24), "employment" (19) and "labor productivity" (18) indicate a comprehensive approach to the impact of digitization on the economy and labor productivity. This reflects interest in assessing the positive and negative effects of digital transformation.

The presence of words such as 'unemployment' (9) and 'human capital' (9) suggests a concern about the challenges of digitization, particularly in terms of job losses and the need to develop human skills.

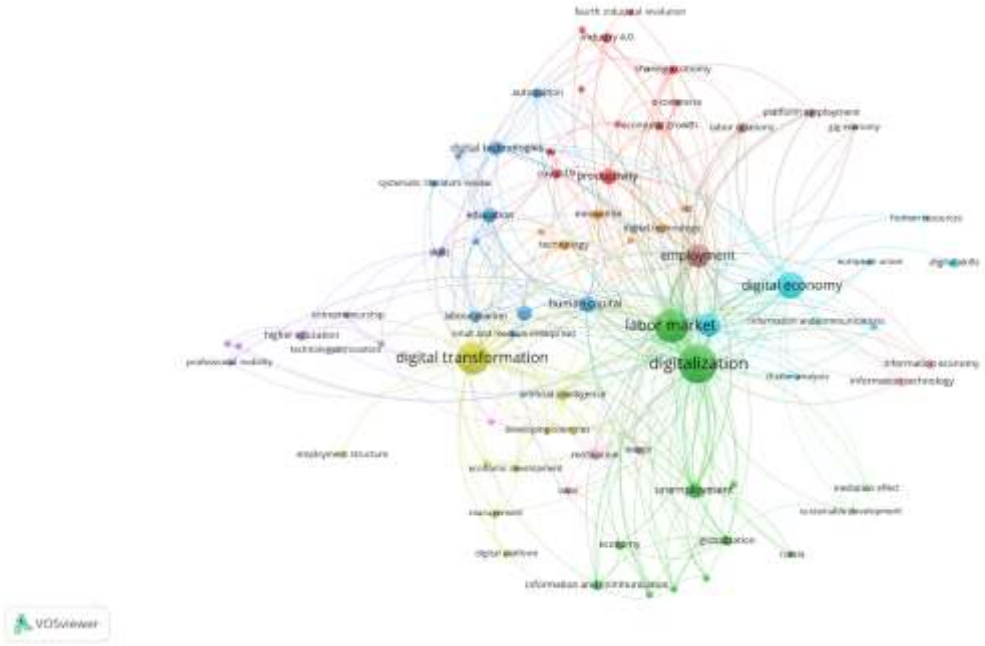

Figure 9. Keyword co-occurrence

Source: author processing in VOSviewer

The words 'education' (8), 'digitization' (8), and 'digital technologies' (7) underline the importance of education and training in the context of adapting to new digital technologies. This suggests that studies are not only limited to the economic impact, but also to the social and educational aspects of digitization, indicating the interconnectedness of the concepts.

Terms such as "automation" (4), "globalization" (4), "technology" (4) and "innovation" (4) add an additional layer of complexity, indicating that digitization cannot be considered in isolation, but in the broader context of innovation and globalization.

In conclusion, the distribution of keywords suggests a diverse and expanding literature that addresses multiple dimensions of digitization and its impact on the labour market and the economy. This diversity emphasizes the need for inter-disciplinary studies that integrate economic, social and educational perspectives to fully

understand the implications of digital transformations.

4. Conclusions

The bibliometric and literature reviews highlight the significant contributions of economic and technology researchers, providing a solid basis for the formulation of innovative policies to address contemporary challenges. Of these, authors such as Daron Acemoglu, Erik Brynjolfsson and organizations such as the OECD play a key role in defining current research directions in the digital economy. This work has a considerable influence on policymaking and the development of innovative solutions for labor markets in a world undergoing digital transformation.

Bibliometric analysis shows that most studies correlate digitization with an increase in economic productivity. However, there are also significant challenges related to job reduction as automation and new technologies replace some human activities. Research also shows an increase in the importance of digital skills, which is crucial for adapting the workforce to new technological demands.

In terms of public policy, the results point to the need to adapt social protection systems and to invest in employee training. This could support a smoother transition to a digitalized labour market, promoting fair and sustainable growth.

The geographical diversity of the research, with a significant contribution from academic institutions in Russia and Eastern Europe, reflects the global nature of the debate on digitization and the labour market. This diversity provides valuable insights and helps to develop regional policies tailored to local economic and social specificities. Thus, digitization is both an opportunity for productivity growth and a challenge for the structure of employment, and public policies need to focus on supporting SMEs and developing the digital skills of employees. This will help to build a more flexible labor market capable of responding to continuous technological change.

To address the challenges and opportunities created by digitization, concrete measures need to be implemented. First and foremost, governments and educational institutions should invest in training programs that develop the digital skills of their employees. This will facilitate rapid adaptation to emerging requirements and ensure a workforce that is well prepared for the future. Promoting public-private partnerships is also essential. Collaboration between the public and private sector can facilitate the development of initiatives to support the digitization of SMEs, helping to find innovative solutions to digital challenges. This synergy will help create an enabling environment for innovation.

Another important aspect is the reform of social protection systems. These need to be adapted to provide support to employees affected by automation, ensuring that they have access to resources for retraining and integration into the labor market. This will help maintain economic and social stability in the face of rapid change.

In conclusion, digitization continues to redefine the labour market, creating both challenges and opportunities. By adopting proactive policies, supporting e-skills development and promoting innovation, a more flexible and efficient labor market can be built, capable of adapting to continuous technological change. These initiatives will contribute not only to economic growth but also to a more equitable society where all employees can benefit from the opportunities created by digitalization.

5. References

1. Anand, A., Brøns Kringelum, L., Øland Madsen, C., and Selivanovskikh, L. Interorganizational learning: a bibliometric review and research agenda, The Learning Organization, 28(2), 2021, 111-136.
2. Aly, H. Digital transformation, development and productivity in developing countries: is artificial intelligence a curse or a blessing?, Review of Economics and Political Science, 7(4), 2020, 238-256.
3. Bădîrcea, R.M., Manta, A.G., Florea, N.M., Popescu, J., Manta, F.L., and Puiu, S. E-commerce and the factors affecting its development in the age of digital technology: empirical evidence at EU-27 level, Sustainability, 14(1), 2021, 101.

4. Baker, H.K., Kumar, S., and Pandey, N. A bibliometric analysis of managerial finance: a retrospective, Managerial Finance, 46(11), 2020, 1495-1517.
5. Cette, G., Nevoux, S., and Py, L. The impact of ICTs and digitalization on productivity and labor share: evidence from French firms, Economics of Innovation and New Technology, 31(8), 2022, 669-692.
6. Chinoracký, R., and Čorejová, T. Impact of digital technologies on labor market and the transport sector, Transportation Research Procedia, 40, 2019, 994-1001.
7. Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., and Lim, W.M. How to conduct a bibliometric analysis: an overview and guidelines, Journal of Business Research, 133, 2021, 285-296.
8. Eichhorst, W., Hinte, H., Rinne, U., and Tobsch, V. How big is the gig? Assessing the preliminary evidence on the effects of digitalization on the labor market, Management Revue, 2017, 298-318.
9. Gaglio, C., Kraemer-Mbula, E., and Lorenz, E. The effects of digital transformation on innovation and productivity: firm-level evidence of South African manufacturing micro and small enterprises, Technological Forecasting and Social Change, 182, 2022, 121785.
10. Garrigos-Simon, F.J., Narangajavana-Kaosiri, Y., and Narangajavana, Y. Quality in tourism literature: a bibliometric review, Sustainability, 11(14), 2019, 3859.
11. Jiménez-García, M., Ruiz-Chico, J., Peña-Sánchez, A.R., and López-Sánchez, J.A.. A bibliometric analysis of sports tourism and sustainability (2002-2019), Sustainability, 12(7), 2020, 2840.
12. Khatib, S.F., Abdullah, D.F., Elamer, A., Yahaya, I.S., and Owusu, A. Global trends in board diversity research: a bibliometric view, Meditari Accountancy Research, 31(2), 2023, 441-469.
13. Li, G., and Liao, F. Input digitalization and green total factor productivity under the constraint of carbon emissions, Journal of Cleaner Production, 377, 2022, 134403.
14. Manta, A.G. Industry 4.0 transformation: analyzing the impact of artificial intelligence on the banking sector through bibliometric trends, Electronics, 13(9), 2024, 1693.
15. Moral-Muñoz, J.A., Liu, X., Santisteban-Espejo, A., and Cobo, M.J. Software tools for conducting bibliometric analysis in science: an up-to-date review, Profesional De La Información, 29(1), 2020, https://doi.org/10.3145/epi.2020.ene.03.
16. Nicola-Gavrilă, L. Education and technology in a data-driven society. Turning data into education intelligence, in L. Nicola-Gavrilă (Ed.), Digital future in education: paradoxes, hopes and realities (Bucharest: Editura Pro Universitaria, 2023) 8-27.
17. Niknejad, N., Ismail, W., Bahari, M., Hendradi, R., and Salleh, A.Z. Mapping the research trends on blockchain technology in food and agriculture industry: a bibliometric analysis, Environmental Technology and Innovation, 21, 2021, https://doi.org/10.1016/j.eti.2020.101272.
18. Pesta, B., Fuerst, J., and Kirkegaard, E.O. Bibliometric keyword analysis across seventeen years (2000-2016) of intelligence articles, Journal of Intelligence, 6(4), 2018, 46.
19. Piroșcă, G.I., Șerban-Oprescu, G.L., Badea, L., Stanef-Puică, M.R., and Valdebenito, C.R. Digitalization and labor market-a perspective within the framework of pandemic crisis, Journal of Theoretical and Applied Electronic Commerce Research, 16(7), 2021, 2843-2857.
20. Rajnai, Z., and Kocsis, I. Labor market risks of industry 4.0, digitization, robots and AI, Proc. 15th IEEE International Symposium on Intelligent Systems and Informatics (SISY), Subotica, Serbia, 2017, 343-346.
21. Rojas-Sánchez, M.A., Palos-Sánchez, P.R., and Folgado-Fernández, J.A. Systematic literature review and bibliometric analysis on virtual reality and education, Education and Information Technologies, 28(1), 2023, 155-192.
22. Şahin, Ö., and Bil, E. Bibliometric analysis of studies published in the field of volatility, Ege Academic Review, 24(2), 2024, 131-148.
23. Su, C.W., Yuan, X., Umar, M., and Lobonț, O.R. Does technological innovation bring destruction or creation to the labor market? Technology in Society, 68, 2022, 101905.
24. Tan, T.F., and Netessine, S. At your service on the table: impact of tabletop technology on restaurant performance, Management Science, 66(10), 2020, 4496-4515.

25. Valenzuela, L.M., Merigó, J.M., Johnston, W.J., Nicolas, C., and Jaramillo, J.F. Thirty years of the Journal of Business & Industrial Marketing: a bibliometric analysis, Journal of Business & Industrial Marketing, 32(1), 2017, 1-17.
26. VOSviewer, https://www.vosviewer.com/, accessed: 23.09.2024.
27. Waltman, L., Van Eck, N.J., and Noyons, E.C. A unified approach to mapping and clustering of bibliometric networks, Journal of Informetrics, 4(4), 2010, 629-635.
28. Zupic, I., and Cater, T. Bibliometric methods in management and organization, Organizational Research Methods, 18(3), 2015, 429-472.

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