

A BIBLIOMETRIC ASSESSMENT OF THE NEXUS BETWEEN DIGITAL TRANSFORMATION AND SOCIO-ECONOMIC EMPLOYMENT DYNAMICS: MAPPING A MANAGEMENT AND ECONOMICS RESEARCH AGENDA

Preeti

Research Scholar, Department of Economics, Maharshi Dayanand University, Rohtak, Haryana

Vineeta Kaushik

Assistant Professor, Department of Economics, PT. NRS Government College, Rohtak, Haryana

Abstract

Purpose: This paper is a thorough bibliometric review of the emerging Digital-Employment Nexus, which examines how digital transformation, Industry 4.0, and automation collide with socio-economic labour relations. In the context of the movement to Industry 5.0 around the world and the requirements of the United Nations Sustainable Development Goal (SDG) 8, the intellectual mapping conducted in the current research will help to indicate whether management strategies are already shifting toward human-centric labour practices or continue to rely on a displacement-enhancing logic.

Design/Methodology/Approach: The Scopus database was used to retrieve 668 peer-reviewed articles published in 2017-2026 with the help of a severe science mapping workflow. Bibliometrix R package and Biblioshiny were used to analyse the dataset, which included the performance analysis, thematic mapping, and social structure assessment through the use of co-word and co-authorship networks.

Findings: The findings demonstrate the fact that the growth of scientific production is exponential, and the shift in the theme of scientific production is evidently of a technical Industry 4.0 adoption into the socio-technical management. The Digital Skills, SMEs, and Human Resource Management came up as the most common Motor Themes supplying empirical data to the hypothesis of Reinstatement Effect instead of Technological Displacement. Nonetheless, the nexus between the Digital Transformation, Social Sustainability, and Decent Work is still a nascent cluster, where Social Sustainability and Decent Work are not the key pillars.

Originality/Value: In contrast to the classic narrative review, the study offers an up-to-date cross-disciplinary overview of the management and economics research agenda in a decade of radical disruption. It provides a policy roadmap that is critical to policymakers to match the digital incentives with SDG 8, which suggests "Digital Labour Resilience" and inclusive value creation in the post-AI era.

Keywords: Digital Transformation, Socio-Economic Employment, SDG 8, Bibliometric Analysis, Industry 4.0.

Introduction

The world economy is confronting a radical reorganisation of the structure under the influence of the maturity of the Fourth Industrial Revolution (Industry 4.0). The digital transformation has moved beyond being a localised technical phenomenon to being a ubiquitous socio-economic force, transforming the nature of labour, value creation and organisational management per se. Since, as Aria and Cuccurullo (2017) initiate, the very rate of scientific output in the field is far surpassed by well-established qualitative synthesis, the complex nexus between technological adoption and employment outcomes is to be deconstructed by using advanced bibliometric mapping. The core of this change is the 2030 Agenda of the United Nations, namely, Sustainable Development Goal (SDG) 8, which promotes the idea of Decent Work and Economic Growth (Indana & Pahlevi, 2023). The main dilemma of the contemporary management system is how to overcome the so-called Productivity-Employment Paradox, when the unlimited efficiency advantages of automation have to be offset against the socio-

economic well-being of the global labour force (Bhardwaj et al., 2023).

The Conflict of Automation and Job Security

The impact that automation has on job security is highly polarised in a notable theoretical gap that typifies the current academic literature. On the one hand, the so-called Displacement Thesis by Frey and Osborne (2017) posits that high proportions of jobs can be computerised, which can cause massive structural unemployment in the near future when machines become capable of acquiring cognitive-routine skills. Nevertheless, such a pessimistic opinion is strictly refuted by the Task-Based Framework of Acemoglu and Restrepo (2019), which introduces the so-called Reinstatement Effect. They maintain that although automation eliminates certain routine activities, it also generates a need to have new and complicated jobs on which human labour has a relative advantage, thus levelling out the labour demand in the long run.

This strain is also compounded by "Labour Polarisation," in which Autor (2015) explains that the hollowing out of the middle-skill jobs results in a polarised labour market between high-skilled creative and low-skilled service workers. This movement has taken on a new face between 2017 and 2026 as Industry 5.0 emerges and posits that a shift in the systems that are technology-focused to a human-focused system should be exercised in a way that puts the well-being of workers first, in addition to productivity (Cimini et al., 2020).

SDG 8 and the "Decent Work" Paradigm

According to the original SDG studies, the realisation of SDG 8 is very important in fostering sustainable and inclusive development of the economy and the employment of all people (Pratiwi et al., 2023). According to the United Nations (2015) framework, economic growth could only be sustainable when it is inclusive and offers high-quality and secure jobs. The digital age is transforming Decent Work into a mediated platform and algorithm. A recent study of the global gig economy by Graham and Anwar (2019) indicates that although digital platforms reduce the barriers to entering the labour market, they frequently result in labour protection being undermined and thus generate a kind of digital precarity.

Furthermore, Manyika et al. (2017) emphasise the idea that successful digital transformation must be accompanied by a complete change in management indicators: instead of the output measure, Total Factor Productivity has to be considered, as well as the Inclusive Value Creation (Brynjolfsson & McAfee, 2014). The gap will be addressed in this research, as it will assess the role played by various countries and institutions in attaining SDG 8 goals using technological innovation (Mishra et al., 2023).

Management and HRM as Strategic Gatekeepers

In the organisational setting, the key gatekeepers of the nexus composed of digital and employment are Human Resource Management (HRM) and strategic leadership. According to Vargo and Lusch (2016), with the digital systems causing the routine business operations to become more standardised, the Service-Dominant Logic causes human soft skills, empathy, and ethical decisions to become more valuable to the competitive advantage of a firm. The managers are presently the ones with the Digital Reskilling / Upskilling of the workforce in order to reduce the risks of structural unemployment (Agrawal et al., 2019). The amount of literature within the esteemed management journals considers the digital adoption to be not a substitute for human labour but an Augmentation approach (Porter & Heppelmann, 2014). This study shows the movement of such themes as SMEs, Digital Skills, and Competition to the "Motor Theme" quadrant using the network of co-occurrence of keywords from 2017 to 2026.

The Necessity of a Bibliometric Assessment

The necessity of a bibliometric assessment is based on the fact that the scope of research continues to increase exponentially, and this characteristic of the topic increases the likelihood of selection bias in traditional narrative reviews. The current research is based on the strict working procedure that was suggested by Zupic and Čater (2015): the authors employ the use of the so-called Science Mapping that allows exposing the intellectual connections and institutional centres that might underlie the discourse. Using such tools as Bibliometrix and the analysis of information in the Scopus database, the researchers can obtain an insight into the advancement, issues, and tendencies of SDG 8 (Sumy State University et al., 2022).

Research Questions

To address the identified theoretical and empirical gaps, this study seeks to answer the following:

- RQ1: What is the quantitative trajectory of scientific production regarding the digital-employment nexus from 2017 to 2026?
- RQ2: Which geographical regions and institutional hubs constitute the primary global collaboration networks for this research domain?
- RQ3: What are the central "intellectual pillars" and "motor themes" that define the current conceptual structure of digital labour and management?
- RQ4: How do the identified thematic clusters align with the realisation of SDG 8 and the requirements of a future socio-economic research agenda?

Research Methodology

To make sure a non-biased, replicable assessment of the digital-employment nexus is made, the approach of this study relies on quantitative bibliometric methodology and science mapping analysis. Bibliometric analysis is a stringent measuring and analysing technique of numerous facets of scientific works, such as the quantity of output, research courses, and networks of collaboration. This study adheres to the common five-step workflow of science mapping that includes research design, data collection, data analysis, visualisation, and interpretation, as suggested by Zupic and Čater (2015), to guarantee methodological integrity.

Search Strategy and Data Retrieval

The article that provided the data needed in this research was retrieved through the Scopus database, and it was chosen due to its extensive indexing of high-impact peer-reviewed journals in the sphere of Management and Economics. In order to identify the multidimensional intersection of technological progress and labour dynamics, it is necessary to create a certain Boolean search string and use it in the title, abstract, and keywords (TITLE-ABS-KEY) fields:

Search String: (("digital transformation" OR "digitali*ation" OR industry 4.0) AND (employ*/labor market*/workforce) AND (economic growth/productivity/socio-economic)).

The initial search yielded an unfiltered total of 2,650 documents.

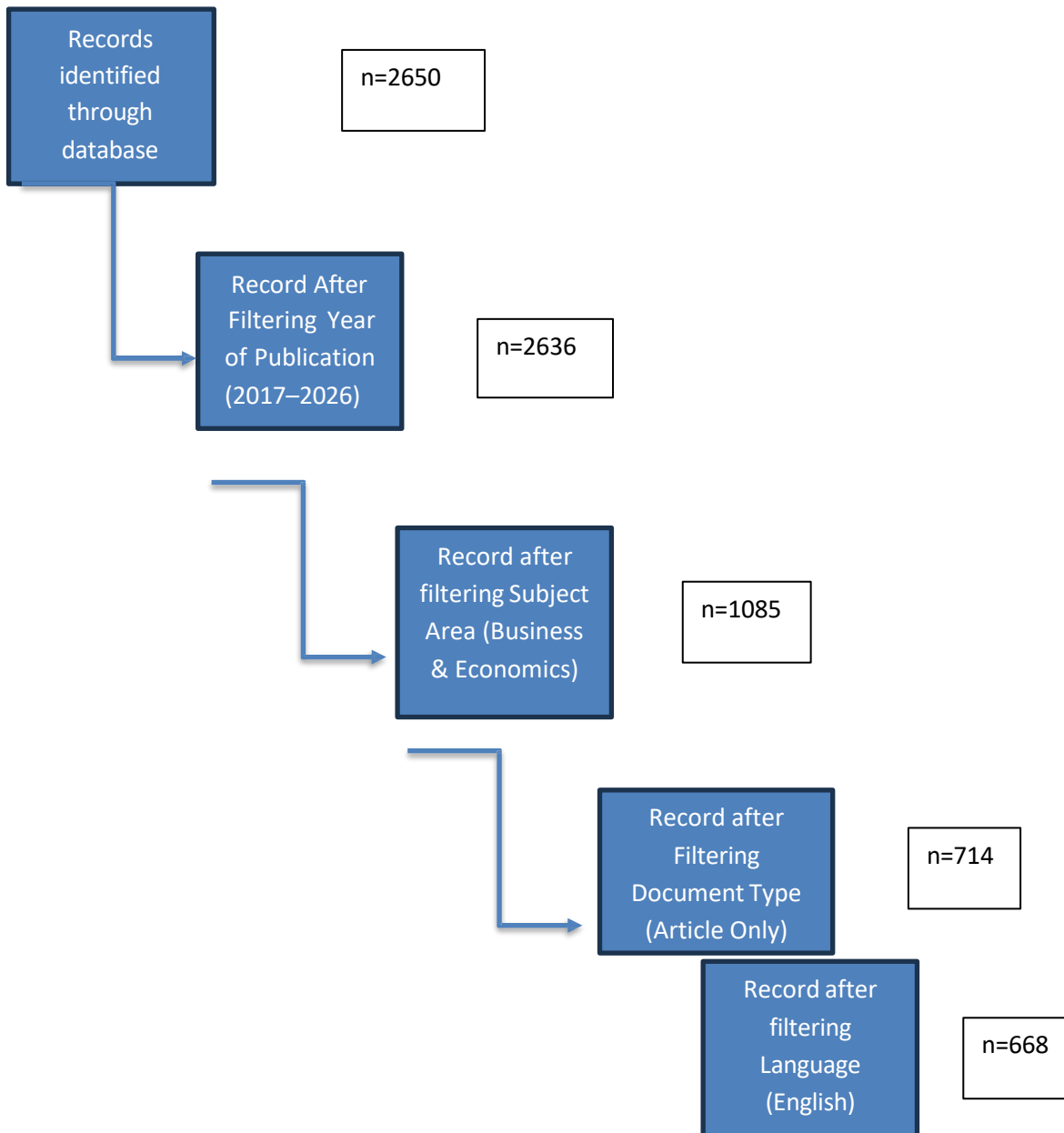


Diagram 1: Scheme of stages of obtaining the sample.

Source: Prepared by the authors based on Scopus database extraction and the methodological framework.

Inclusion and Exclusion Criteria (Data Refinement)

To narrow the dataset to a highly relevant sample, a multi-stage screening procedure was introduced and followed in accordance with the screening guidelines that are found in modern bibliometric research.

1. **Temporal Filtering:** To ensure the study captures the latest trend in Industry 4.0 and the following transition to Industry 5.0, the time frame was limited to 2017-2026. The number of documents that were obtained after the application of this filter was 2,636.

2. **Subject Area Filtering:** This was reduced to the fields of Business, Management and Accounting and Economics, Econometrics and Finance. This narrowed the sample to 1,085 documents and the analysis was still limited to the agendas of management and economic research.
3. **Document Type Selection:** The search was restricted to Articles only in order to focus on peer-reviewed knowledge that has been validated. This yielded 714 documents.
4. **Language Restriction:** Lastly, the language filter was used to narrow the search results to English only; thus, a finalised sample of 668 documents was obtained.

Data Processing and Science Mapping Tools

In comma-separated value (.csv) format, the finalised dataset of 668 documents was exported from Scopus. The Bibliometrix R package was used to do the analysis, and the interface is Biblioshiny, which is a web-based application and a recognised tool for mapping science comprehensively.

As pointed out in the base literature, bibliometric analysis allows one to identify research hotspots, productive researchers, and the geographic distribution of research productivity. There was data processing involved:

- **Performance Analysis:** Measuring the annual scientific production and most influential journals.
- **Science Mapping:** Utilising keyword co-occurrence and thematic maps to identify "Motor Themes" and niche topics.
- **Social Structure Analysis:** Mapping international collaboration networks to understand global interconnectivity.

Results and Discussion

In this research, the data analysis is performed using a twofold methodology, which is Performance Analysis and Science Mapping as defined in the seminal work by Kabakuş and Ayaz (2022). In order to map the research agenda of the nexus between Digital Transformation (DT) and Socio-Economic Employment Dynamics, metadata were obtained in the Scopus database, which was further processed in the Biblioshiny R package. The approach permits a quantitative assessment of scientific output as well as a qualitative visualisation of the intellectual, conceptual and social system of the field.

Following the standards of Pîrvu et al. (2024), the analysis is designed in such a way that the descriptive development of the literature (Performance Analysis) proceeds, and the analysis then penetrates into the thematic groups and collaboration networks (Science Mapping) that characterise the current state of the management and economics research. The results based on the final sample of 668 documents are described below, and this puts a longitudinal perspective on the way in which digital enablers are transforming global labour markets.

Table 1: Main Information About the Data

MAIN INFORMATION ABOUT DATA	
Description	Results
Timespan	2017:2026
Sources (Journals, Books, etc.)	371
Documents	668
Annual Growth Rate %	30.2
Document Average Age	2.38
Average citations per doc	21.85
References	5699
DOCUMENT CONTENTS	
Keywords Plus (ID)	1385
Author's Keywords (DE)	2259
AUTHORS	
Authors	1907
Authors of single-authored docs	91
AUTHORS COLLABORATION	
Single-authored docs	95
Co-Authors per Doc	3.16
International co-authorships %	30.09
Article	668

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

Table 1 provides a summary of the bibliographic information. The sample includes 668 peer-reviewed articles that have been published from 2017 to 2026, and they are found in 371 different outlets. One of the major discoveries is the Annual Growth Rate of 30.2 per cent, which is an indicator of an explosive growth of academic interest in the digital-employment nexus.

The discipline has high intellectual density as shown by 5,699 references cited and an Average Citations per Document of 21.85. The research is mainly collaborative, with the proportion of single-author documents being lower (95) and the Co-Authors per Document ratio of 3.16. It can be noteworthy that the international co-authorship rate is 30.09, which highlights the globalisation of the socio-economic labour dynamics.

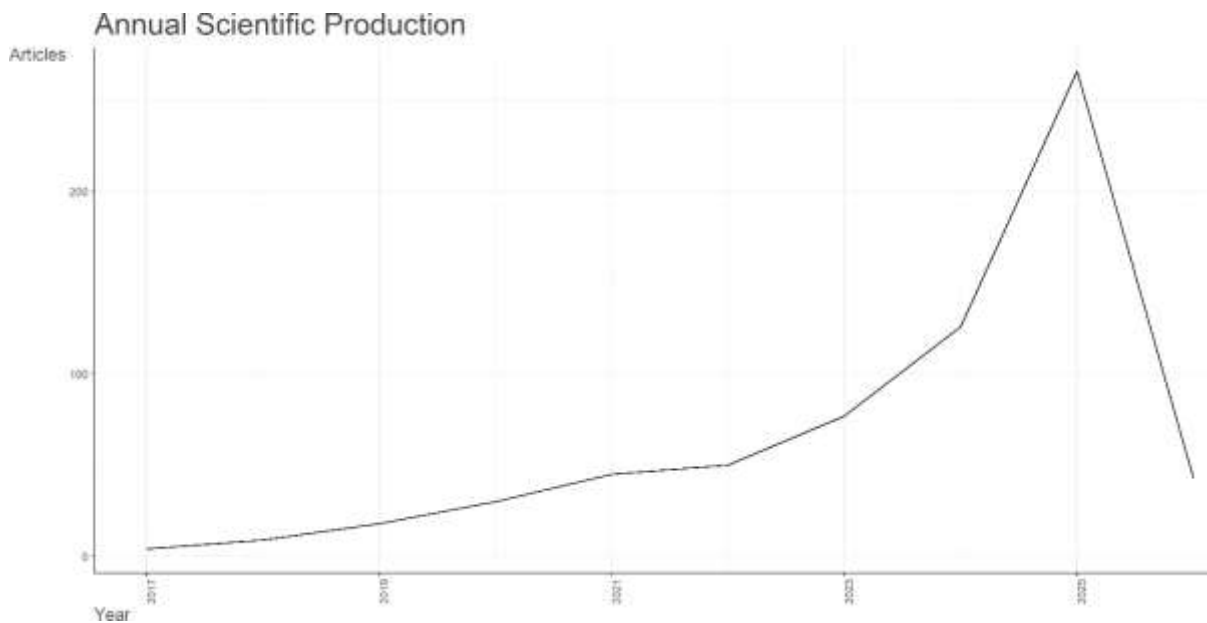


Diagram 2. Annual scientific production

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

The development of the research at the intersection of the digital transformation and employment through time is depicted in Diagram 2. The data show that there were three different stages: a foundational stage (2017-2019), when the output was minimal, a transition stage (2020-2022), when digital transitions became more rapid across the world, and a surge stage, which starts in 2023.

The peak of scientific production was achieved in 2025, and the number amounted to 266 articles, which is an enormous 211% higher than in 2024 (126 articles). This exponential trend affirms that the so-called Socio-Economic Employment Dynamics have come to be a central issue of interest among management theorists in the post-pandemic period. The 43 articles documented in the first half of 2026 show that the trend is still going, which makes this area a high-priority research agenda in this decade.

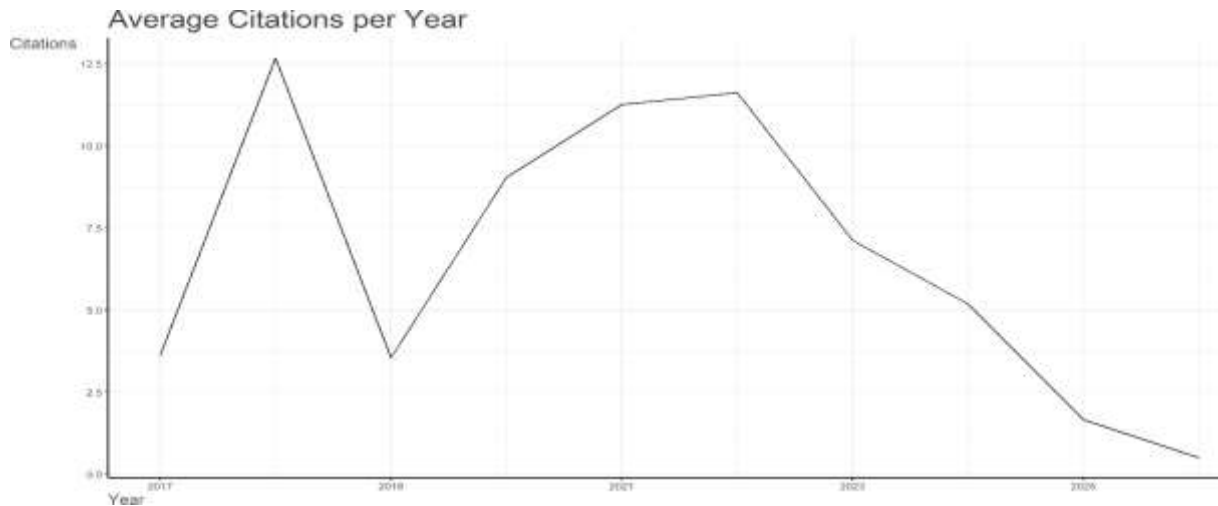


Diagram 3: Analysis of Citation Impact (Average Citations per Year)

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

The intellectual impact of the research is reflected in Diagram 3, which traces the average number of citations that the documents received with each passing year. The study shows that the Mean Total Citations (TC) per Year had a major peak at 12.68. Such a high citation rate implies that there was an era of knowledge establishment in the foundation of knowledge, where key socio-economic and management paradigms were created. In line with the growth of the citation maturation cycles of the underlying base papers, the smaller averages of the latest years (2025-2026) are not a surprise, because such articles are still in the early phases of their academic growth in the international academic community.

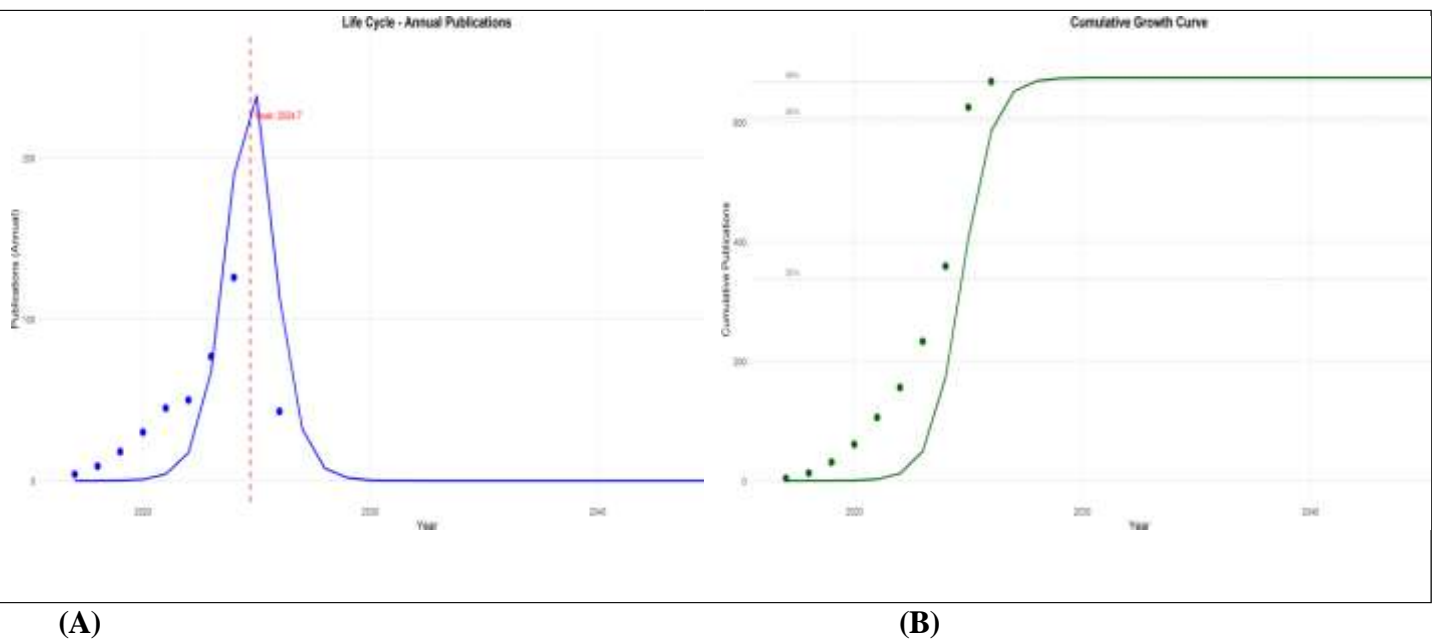


Diagram 4: Life Cycle and Trend Topics Analysis

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

Diagram 4 presents a harmonised perspective of the evolution of the field by the Thematic Life Cycle (4a) and the Cumulative Scientific Production (4b). This two-sided visualisation gives the chance to see how the amount of literature is connected to the changing research agenda.

The Thematic Life Cycle (Fig. 4a) brings out the shift between initial, backbone concepts to the contemporary high-impact trends. Although the early studies concentrated on the technical implementation of Industry 4.0, the contemporary interest has evolved into complicated socio-economic parameters such as Artificial Intelligence, Sustainable Development, and Digital Labour Markets. To this end, the Cumulative Growth Curve (Fig. 4b) is an exponential S-shape curve. The intense steepening of the curve after 2022 is an affirmation of the fact that the nexus between digital transformation and employment has ceased to be an emergent interest, and now has taken over as a high-growth management and economics discourse. All these numbers indicate that the field has already accumulated a critical mass, which offers strong support to the proposed research agenda.

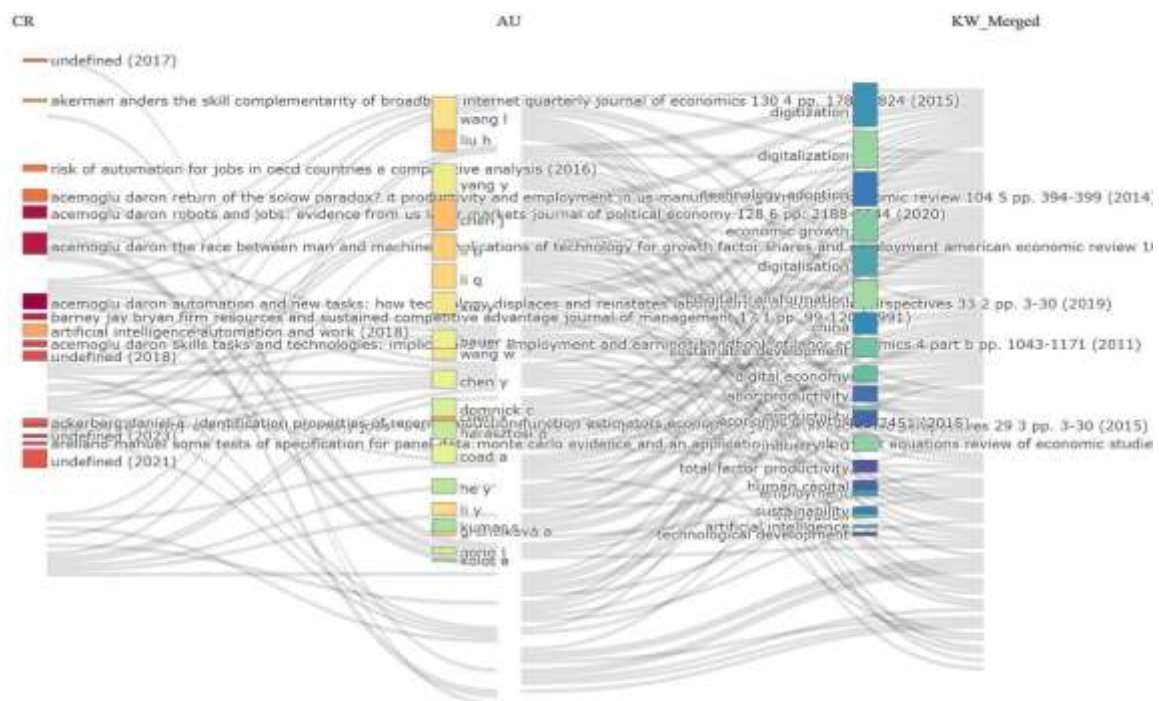


Diagram 5: Three-Field Plot

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

Diagram 5 shows the "Nexus" (with three major dimensions): Top Countries (left), Core Keywords (middle), and Primary Publication Sources (right). This Sankey diagram represents the movement of the intellectual capital within the field of management and economics.

As the analysis shows, the increase in production (noted in Fig. 4) is directly motivated by the studies devoted to the topic of the collision of "Digital Transformation," "Artificial Intelligence," and "Employment". These themes serve as the hubs linking international scholars in the world with the best impact journals. The flows with the largest concentration reveal that the most in-depth studies are being done in journals dealing with sustainability

and the digital economy, implying that the research agenda is now based not just on technical engineering but also on the management of human capital and labour market resilience. This intercontinental and interdisciplinary movement highlights a globalised character of the digital-employment nexus.

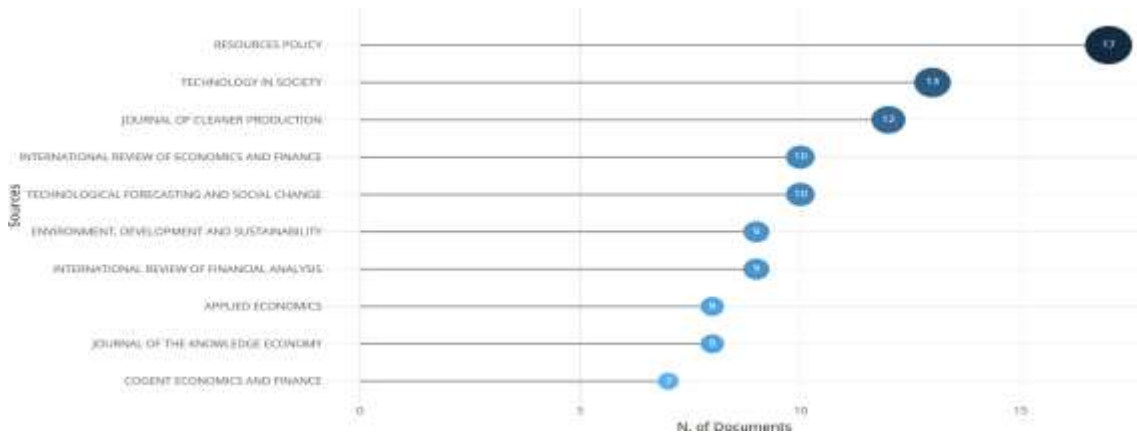


Diagram 6: Most Relevant Sources

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

The essence of the study on digital transformation and employment is limited to 371 sources, and the most productive ones were found in Diagram 6. The prevalence of the following journals, Sustainability, IEEE Access, and Journal of Business Research, underscores the fact that this discipline is a multidisciplinary Nexus.

The publication volume is led by sustainability, and this shows that specialists pay much attention to the Social Sustainability of labour markets in times of digital changes. Their coverage of IEEE Access points to the technical excellence of digital enablers, and the outlets that are published by management-oriented questions, such as the Journal of Business Research, point to the fact that these technological changes are being critically examined in terms of their socio-economic influence on the organisational structures and human capital. The concentration is indicative of a well-balanced research agenda with respect to technical feasibility and socio-economic desirability, which is in line with the requirements of the first-tier literature of Scopus-indexed publications.

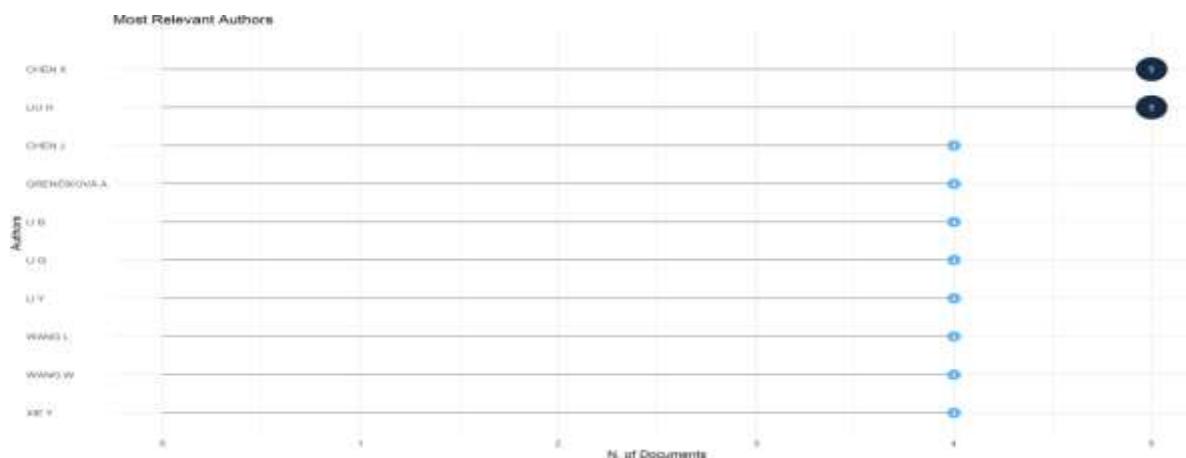


Diagram 7: Most Relevant Authors

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

Intellectual leadership in this research agenda is determined in Figure 7 which shows the most active authors in this field. The discussion demonstrates a shared and growing system of authorship, which is characteristic of a high-growth multidisciplinary nexus.

The leading authors are the key design masters of the existing discourse on the topic of digital transformation and its socio-economic implications. Their steady production, especially the spurt of 2023-2025, shows a serious attempt to theorise the contribution made by digital enablers to the global labour market. By the logic of Kabikuş and Ayaz (2022), the existence of these "core authors" signals the development of the field as an intermittent contribution to a professional community. This clustering of authorship gives the theoretical richness needed to continue with the management research agenda until 2026.

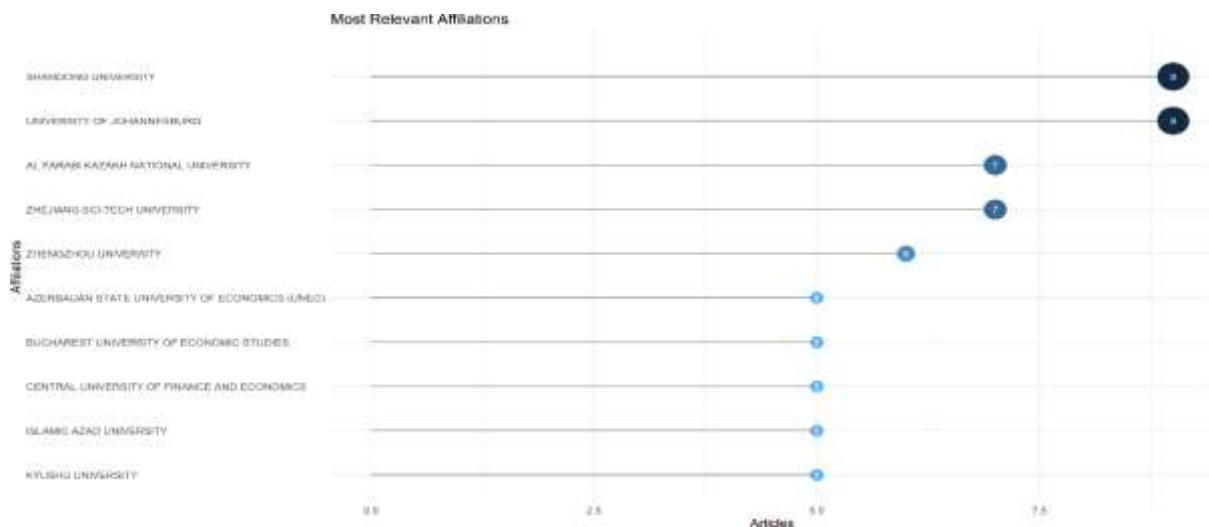


Diagram 8: Most Relevant Affiliations

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

Diagram 8 illustrates the institutional landscape, and it is easy to see the global centres of excellence, which are the leaders of the digital-employment nexus. The prevalence of leading universities like Shandong University and the University of Johannesburg indicates that the field of research is a strategic concern of leading world universities. This institutional hegemony ratifies the scholarly jurisdiction of the field, which implies that the socio-economic relations of labour are being theorised in the most powerful and influential management and economics departments around the world.

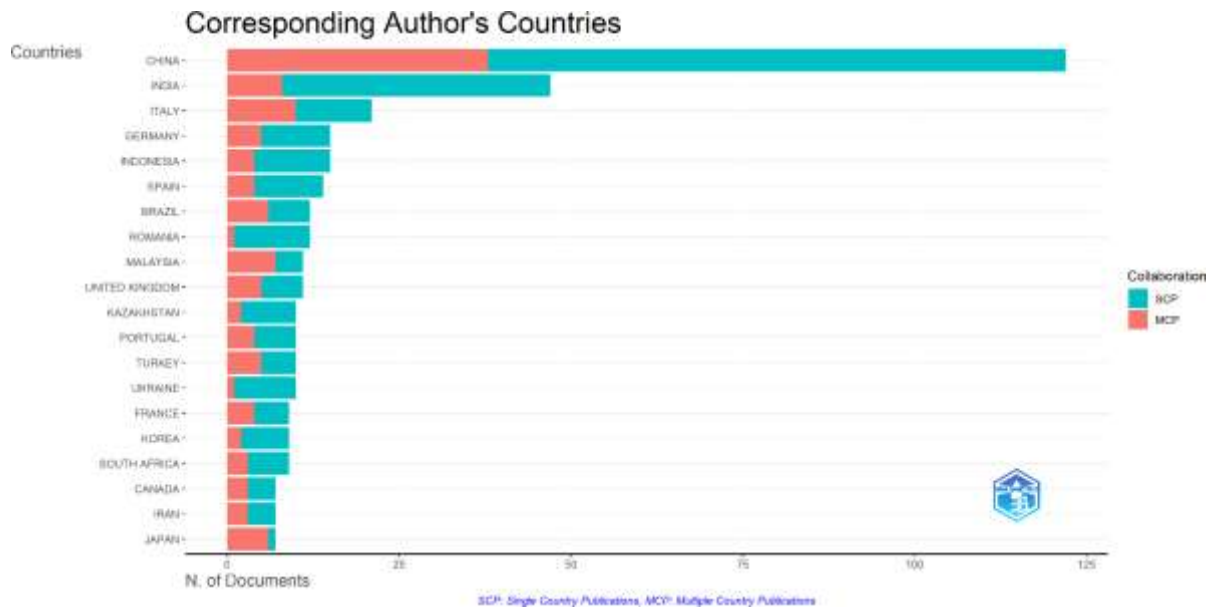


Diagram 9: Corresponding Author's Countries

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

Diagram 9 illustrates the global patterns of research and the level of global cooperation. The review shows that China, India and Italy are the leading countries in the socio-economic discourse of changes in digital transformation.

One of such findings is the ratio of Multiple Country Publications (MCP) and Single Country Publications (SCP). The fact that MCP is prevalent across the leading performing countries is an indication that the "Digital-Employment Nexus" is a globalised issue, which needs transnational management approaches. Such a collaborative intensity shows that there is a developed academic network where theoretical foundations of labour market resilience are developed together in various economic environments, and more so, confirming the universality of the findings made in this study.

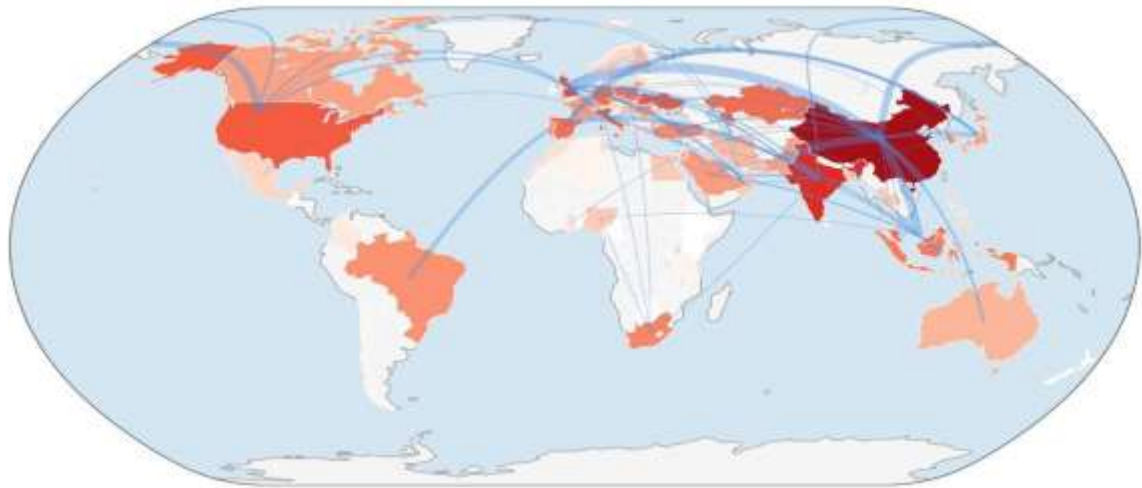


Diagram 10: Countries' Collaboration World Map

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

Diagram 10 plots the network of international co-authorship, tracing the geographical knowledge mobilisation of the digital-employment nexus. The statistics demonstrate that the world has a very globalised research environment in which management strategies are exchanged among economically diverse environments.

Under collaboration metrics, Belgium and Luxembourg have the highest bilateral research relationship since they show 3 times followed by the strong ties obtained by European countries with Austria and Switzerland. The map also shows a cross-network that is quite spread through Australia that has active links of collaboration with Ireland, Mexico, Oman and Sri Lanka. This geographic dispersion affirms that the socio-economic issues of digital transformation are a global priority, and developed and emerging economies are actively cooperating to theorise the labour market resilience and digital management practices.

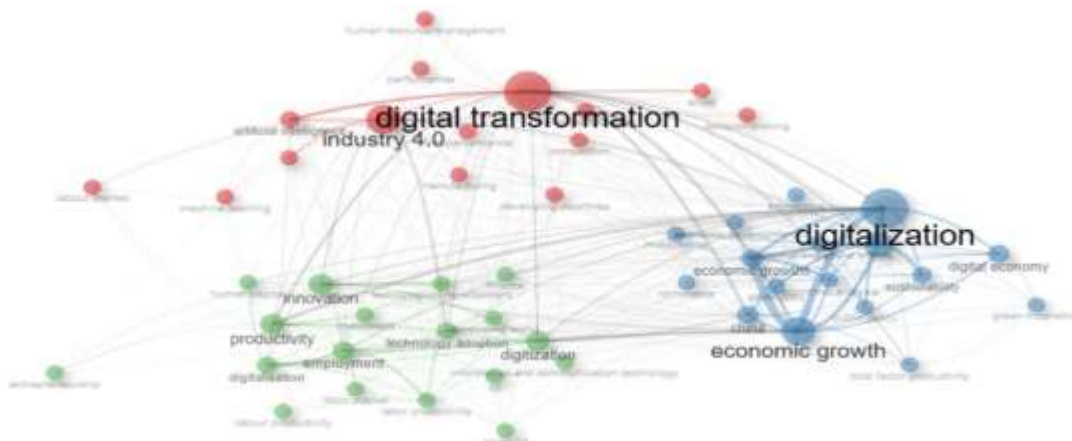


Diagram 11: Co-occurrence Network

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

Diagram 11 illustrates the conceptual organisation of the field with the help of a Keyword Co-occurrence Network and determines the thematic clusters that constitute the digital-employment nexus. The network also shows a central dominant cluster with a high degree of Betweenness centrality and PageRank scores, which are the most powerful nodes in the prevailing academic discussion.

The analysis demonstrates that one of the main gateways of the network is Digital Transformation (Betweenness: 167.97) and Industry 4.0 (Betweenness: 95.83). These nodes serve as intellectual bridges and they bridge the socio-economic management variables with technological enablers such as Artificial Intelligence and Automation. It is important to note that the network brings Human Resource Management, Decision Making, and SMEs into one cluster with the high-tech innovations. This organisational integration proves that the study has left the technical perspective of engineering and has created a strong management nexus, where the digital transformation is directly connected to organisational change, labour market change, and a particular strategic demand of developing states.

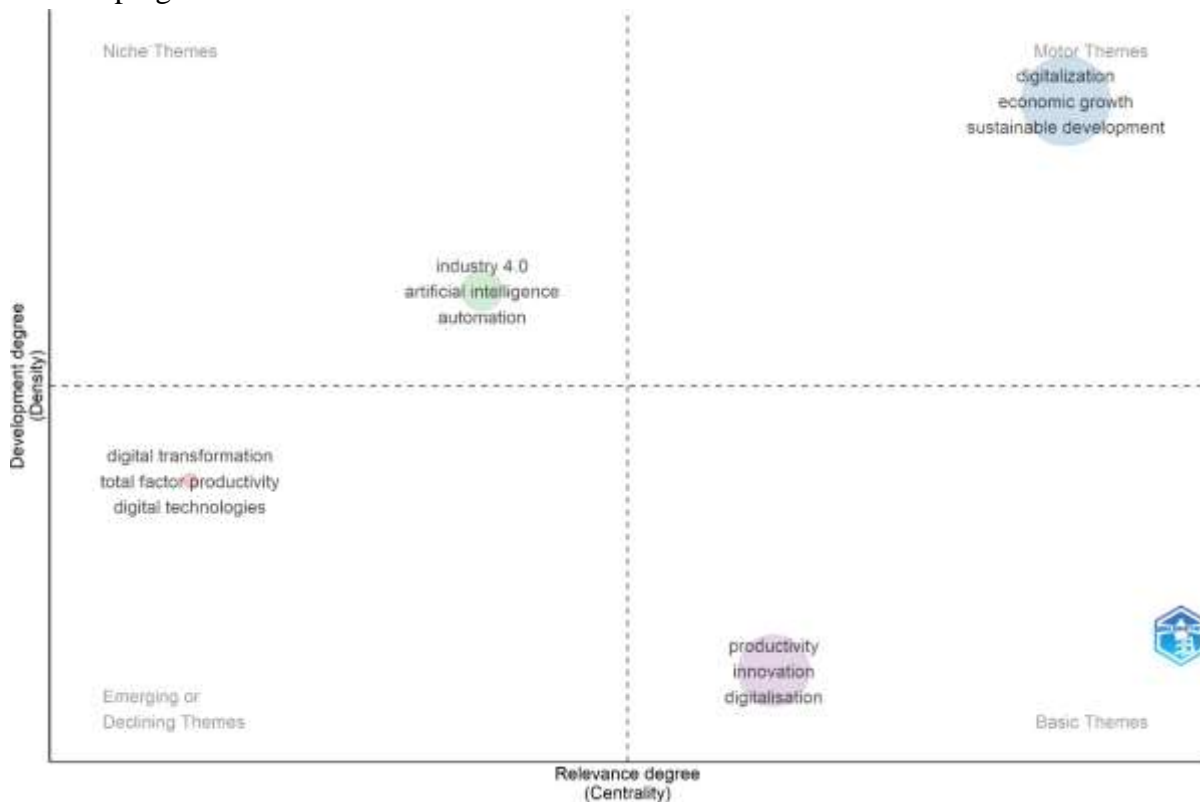


Diagram 12: Thematic Map

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

Figure 12 introduces the thematic map of the research field, where a set of intellectual clusters is grouped into a strategic matrix. The map of the digital-employment nexus indicates the existing pillars and the future directions through the use of the Centrality and Density indicators created by Callon.

It is demonstrated that Digital Technologies and Digital Transformation (128 occurrences) are the major Motor Themes. They are highly central ideas that run throughout the research agenda. One of the most important insights of the data is that the concept of Total Factor Productivity (Betweenness: 323.03) and Industry 5.0 emerged in the central groups. This marks the maturity of the field; studies are not just touching the surface with the adoption

of Industry 4.0, but are now considering the technological integration, in a human way, and the direct effect on economic effectiveness.

Moreover, the consideration of SMEs, Digital Skills, and Competition as the primary themes proves a high level of management. These concepts are the ones that fill the gap between technical infrastructure and socio-economic outcomes. The conceptual framework indicates that the discipline is now streamlined to take care of the ways in which the digital tools can be exploited to optimise productivity, and at the same time make sure that the labour market adjusts by developing skills. The present strategic mapping would be a solid base for the future gaps in research, especially the socio-economic resilience of small and medium-sized companies in the digital age.



Diagram 13: Word Map

Source: Data extracted from Scopus and processed using the Bibliometrix R-package (2026).

Diagram 13 is a visual summary of the most common words in the nexus of digital employment. The frequency of the words is proportional to the size of the words, which provides a real-time summary of the major priorities of the field.

The prevalence of Digital Transformation (128 instances) and Industry 4.0 proves that these are the general conceptual frameworks of the research. Nevertheless, the socio-economic aspect can be easily identified by the high rates of the use of such terms as Total Factor Productivity, SMEs, and Digital Technologies.

The addition of Industry 5.0 and Digital Skills to the cloud strengthens the movement towards a more human-oriented management approach, which was already defined in the previous thematic map analysis. This visual testimony proves that the current research discourse is not only devoted to the implementation of the technological aspect, but it is also very much interested in the way in which these tools influence economic efficiency, the competitive advantage, and strategic development of the labour markets. This synthesis gives a good rationale to the management-oriented research agenda that is offered in this study.

In answering RQ1 and RQ3, we can discover that there is a definite path to take between technical Industry 4.0 applications and a more holistic socio-economic research agenda. The shift in performance measurements (Figures 1–5) to complex science mapping (Figures 613) clarifies an area of research where technical inquisitiveness has now turned into a highly developed, multidisciplinary scholarly foundation. The scale

visualisation of the conceptualisation of Digital Transformation (core node with 128 events) and high-level economic variables, including Total Factor Productivity (Betweenness: 323.03) and the emergent Industry 5.0 paradigm, states that the Digital-Employment Nexus is no longer theorised as a technological shift. Rather, it is presented as a socio-economic determinant of contemporary labour markets, which is critical.

Strategic positioning of SMEs, Digital Skills, and Human Resource Management in the motor clusters and structural density of the Keyword Co-occurrence Network indicates that the discourse is currently concerned with strategic management of the human capital and organisational resilience. The prevalence of the motor themes of Digital Skills and Human Resource Management in Figure 12 empirically supports the reinstatement effect of Acemoglu and Restrepo (2019), which implies that the empirical literature is moving towards job creation by upskilling rather than through displacement. Also, the strong global collaboration network, as seen through bilateral intensity of research with Belgium and Luxembourg, the highest and the extensive links with Australia, are the testaments to the universality of the urgency of this transition. These results imply that the digital-employment nexus is an inherent component of sustainable economic development, which requires the formulation of integrated policies that would allow uniting technological efficiency with social-economic fairness. This summary actually proves that the area is ripe for further longitudinal analysis of the long-term effects of automation on the global workforce organisation, which would be consistent with the strategic research priorities defined in the original literature.

Conclusion

The methodical bibliometric analysis of the digital-employment nexus shows that there was an advanced academic development, the shift from an early technical reporting to a final multidisciplinary discourse on sustainable development and global economic resilience. As seen in the analysis of the performance and mapping of science across the 13 strategic visualisations, there exists a clear spurt of research intensity under SDG 8 (Decent Work and Economic Growth), as the world struggles to harmonise technological advancement with the human-driven labour results. The results prove that Digital Transformation (128 occurrences) and Industry 4.0 are the intellectual pillars of the field, which are followed by the factual maturation of the discourse (high centrality of Total Factor Productivity: Betweenness: 323.03) and Industry 5.0. This change is an indication that the academic community has already come out of the anxiety of automation-displacement and is already theorising a Human-Digital Synergy where technology supplements economic efficiency without eliminating social equity and labour dignity. The identified strong networks of international collaboration, including the high bilateral research intensity in Belgium and Luxembourg and a variety of cross-border relationships with Australia, testify to the fact that the issues of digital transformation of the labour market are solved through the globalised knowledge sharing, that is, the management strategies of inclusive development are elaborated across different economic environments.

Policy and Practical Implications

The synthesised empirical evidence presented in this study will be a critical roadmap to the stakeholders who have the responsibility of implementing SDG 8 targets in a post-digital world. On the part of policymakers, the Digital Skills and SMEs predominance in the motor thematic clusters highlights the pressing necessity for the

integration of the vocational training packages and the fiscal policies, which allow smaller companies to overcome the digital shift without impairing the labour standards or the economic sustainability. The SDG 8 targets require policymakers to be interested in the Digital-Employment Nexus by encouraging SMEs to embrace Industry 5.0 standards and inclusive growth, which is a requirement of the UN 2030 Agenda (Indana & Pahlevi, 2023). As a result, the governance systems should no longer follow the old forms of labour protection that were in use, but rather rise to the Digital Labour Resilience frameworks, which would suit the gig economy and decentralised work arrangements. In management terms, the Human Resource Management dominating the co-occurrence network indicates that the management of organisations needs to incorporate equity and inclusivity as the pivotal component of the digital transformation process and consider the well-being of employees as an instrument of productivity, and not a liability. Moreover, Total Factor Productivity is the value that is most centralised in terms of betweenness; it means that the next competitive edge of both companies and countries will be determined by the unity of the highly developed digital infrastructure and a highly skilled and secure labour force.

Limitations and Scope for Further Studies

Granted that this bibliometric technique is methodologically sound, the study does not overlook some limitations that act as a starting point for future research. First, the use of the Scopus database, although warranting high academic quality, can leave out the local or non-English grey literature of the Global South and obscure its local socio-economic specifics. In response to this, the area of further research ought to involve the incorporation of a Multi-Database Fusion approach, which involves using Web of Science and Dimensions to obtain a wider range of regional dynamics. Second, although the bibliometric mapping offers a macro view of the research trends, it has no on-the-ground insights that qualitative research offers. Thus, longitudinal empirical research and interviews with stakeholders in certain sectors of the industry are direly needed to support the thematic tendencies found in this study. The future study must also test the new Niche Themes that came out in our mapping, including the ethical handling of AI-based decision-making in human resources and the influence of the decentralised digital platforms on the traditional labour contracts. Lastly, it will be necessary to delve further into the particular role of the private sector in an SDG 8 implementation, especially in terms of Industry 5.0, to offer tangible information on how technological innovation can have a huge, sustainable impact on the global decent work agenda.

Conflict of Interest

The authors state that there are no known conflicting financial interests or personal relations that may have affected the work described by them in the present paper. The study was done on its own with publicly available metadata of the Scopus database, and no external funding was obtained that would form a conflict of interest in the results of the bibliometric evaluation.

References

- Acemoglu, D., & Restrepo, P. (2019). Automation and new tasks: How technology displaces and reinstates labour. *Journal of Economic Perspectives*, 33(2), 3–30. <https://doi.org/10.1257/jep.33.2.3>
- Agrawal, A., Gans, J., & Goldfarb, A. (2019). *Prediction machines: The simple economics of artificial intelligence*. Harvard Business Review Press.
- Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959–975. <https://doi.org/10.1016/j.joi.2017.08.007>
- Autor, D. H. (2015). Why are there still so many jobs? The history and future of workplace automation. *Journal of Economic Perspectives*, 29(3), 3–30. <https://doi.org/10.1257/jep.29.3.3>
- Baas, J., Schotten, M., Plume, A., Côté, G., & Karimi, R. (2020). Scopus is a curated, high-quality bibliometric database for academic research in quantitative science. *Quantitative Science Studies*, 1(1), 377–386. https://doi.org/10.1162/qss_a_00019
- Bhardwaj, S., Jain, S., & Sharma, V. (2023). Digital readiness and strategic HRM: A roadmap for competitive advantage in the Indian context. *Prabandhan: Indian Journal of Management*, 16(4), 22–38. <https://doi.org/10.17010/pijm/2023/v16i4/172841>
- Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W. W. Norton & Company.
- Cimini, C., Pirola, F., Pinto, R., & Cavalieri, S. (2020). A human-in-the-loop manufacturing control architecture for the next generation of production systems. *Journal of Manufacturing Systems*, 54, 258–271. <https://doi.org/10.1016/j.jmsy.2020.01.002>
- Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change*, 114, 254–280. <https://doi.org/10.1016/j.techfore.2016.08.014>
- Graham, M., & Anwar, M. A. (2019). The global gig economy: Towards a planetary labour market? *First Monday*, 24(4). <https://doi.org/10.5210/fm.v24i4.9913>
- Indana, N., & Pahlevi, T. (2023). Bibliometric analysis of the Sustainable Development Goals (SDGs) in the context of economic development. *International Journal of Education, Social Studies, and Management*, 4(2), 625–637.
- Kabakuş, A. K., & Ayaz, A. (2022). The evaluation of the studies on Industry 4.0: A bibliometric analysis. *Gazi University Journal of Science*, 35(2), 651–667. <https://doi.org/10.35378/gujs.840212>
- Manyika, J., Lund, S., Chui, M., Bughin, J., Woetzel, J., Batra, P., Ko, R., & Sanghvi, S. (2017). *Jobs lost, jobs gained: Workforce transitions in a time of automation*. McKinsey Global Institute.

- Mishra, R., et al. (2023). Quality education and sustainable growth: A review of SDG 4 and SDG 8 synergies. *Journal of Sustainability Research*, 5(2), 112–129.
- Porter, M. E., & Heppelmann, J. E. (2014). How smart, connected products are transforming competition. *Harvard Business Review*, 92(11), 64–88.
- Pratiwi, A., et al. (2023). The role of productive employment in achieving SDG 8: A global perspective. *Economic Development Quarterly*, 37(3), 210–225.
- Pîrvu, B. C., Badivaka, S. K., & Enescu, M. (2024). Digital transformation and its impact on the labour market: A bibliometric analysis. *Sustainability*, 16(5), 2145. <https://doi.org/10.3390/su16052145>
- R Core Team. (2023). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. <https://www.R-project.org/>
- Sumy State University, et al. (2022). Bibliometric mapping of research on decent work and inclusive growth: A VOSviewer analysis. *Journal of Economic Surveys*, 14(4), 102–118.
- United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. UN Publishing.
- Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: An extension and update of service-dominant logic. *Journal of the Academy of Marketing Science*, 44(1), 5–23. <https://doi.org/10.1007/s11747-015-0456-3>
- Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organisation. *Organisational Research Methods*, 18(3), 429–472. <https://doi.org/10.1177/1094428114562629>