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Artificial Intelligence in Business Innovation: A systematic bibliometric review

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Abstract: The last decade has seen an increase in research on Artificial Intelligence (AI) in business innovation reflecting its profound impact across all industries. The application of AI in business innovation enhances business practices by creating new means of collaboration. This technology enhances service delivery, corporate interactions with customers and staff, in formulating strategies and provides new market opportunities. The current bibliometric analysis was based on 1039 publications from the Scopus database (2014-2024) and through the Vosviewer tool, which is specialized in data analysis and visualization it highlighted the most important countries in the production of scientific research related to AI in business innovation.



Keywords: Artificial Intelligence, Business Innovation, new technologies, Entrepreneurship

Introduction

Innovation has always been one of the most important factors in improving living standards and the main aim is the improvement of the efficiency, quality and flexibility of processes that affect the operation of organizations, leading to the enhancement of competitiveness and the value that businesses offer to their customers (Papanikolaou et al, 2025). The term "innovation" is a general term used in almost all sectors and includes the creation of new products and services using new and innovative technologies that can improve efficiency, sustainability and quality (Tsotsas et al, 2025). Conventional technologies are now obsolete, and this proves that the process of innovation can be particularly disruptive (Soni et al, 2020). The emerging technologies now are blockchain, Internet of Things (IoT), big data, cloud computing, data science and Artificial Intelligence (AI). However, due to the evolution of technology in particular, the situation in recent years has changed dramatically and every sector and organization is using these technologies (Soni et al, 2020).

When an organization incorporates new processes, services, goods that positively affect business changes, it is called business innovation. New technologies that are progressively integrated into businesses are considered business innovation. One of the most important new technologies is considered to be Artificial Intelligence (AI) which refers to machines that work to perform wise tasks that have generally been refined by humans (Wang et al, 2021)

The emergence of AI has played a key role in the transformative power of modern businesses as, according to Farayola et al (2023), it has reshaped industries and created new paradigms for how companies operate and compete. In the strategy of modern businesses, the integration of AI is pivotal, offering novel opportunities for innovation, efficiency and competitive advantage (Farayola et al, 2023).

Artificial Intelligence (AI) has been an important part of business research in the last decade. Its priority is the use of smart technologies to enhance efficiency in organizations. AI is applied and addresses everyday business processes such as productivity, predictability and decision making. Many functions of key departments of organizations such as sales, marketing, data analysis, human resource management, decision support, and sustainable development rely on AI for their efficient execution (Patra et al, 2023).

As mentioned above, one of the critical factors of innovation in the business world is AI which creates new business models, enhances automation and strategic decision making. In the last ten years there has been a large production of scientific studies focusing mainly on the individual applications of AI in various fields such as marketing, supply chain, information systems and customer relationship management. However, existing research remains fragmented and often limited to individual cases of countries, companies or industries. Also, the existing literature mainly



emphasises the technological aspects of the application of AI in business innovation. A systematic bibliometric review of the global research output on AI in business innovation is considered necessary in order to highlight the country's leading research in this field and international collaborations. This research gap creates the need for a comprehensive mapping of scientific activity in this field. This study aims to cover this gap with a bibliometric analysis based on data extracted from the Scopus database. At a time when AI has invaded and transformed business, it is necessary to know where scientific knowledge is produced, which countries are leading the innovation and how global collaboration related to AI can be strengthened. Therefore, the aim of this research is to examine the overall research output globally around the topic of AI and its use in business innovation. In this way, this research will provide useful information to researchers, innovators and policy makers. Researchers and organizations can also identify potential international partners and identify which countries and regions are under-represented in a particular field.

Research Aim and Research Questions

The aim of this bibliometric research is to examine the overall global research output on the topic of Artificial Intelligence (AI) and its use in business innovation based on data extracted from the Scopus database. The current research aims to answer the following three research questions:

- Which countries are leading the way in producing research on AI and its application in business innovation?
- What are the co-authorship networks between countries?
- Which countries are marginalized in the research ecosystem in the field of AI in business innovation?

Research Results

The study relied on Vosviewer software to extract the results. Vosviewer is a widely used tool used for bibliometric research by analyzing and visualizing the data. According to Kirby (2023), Vosviewer yields improved results especially in the case of medium and large datasets. It also highlights that it is one of the top choices for performing a scientific mapping analysis.

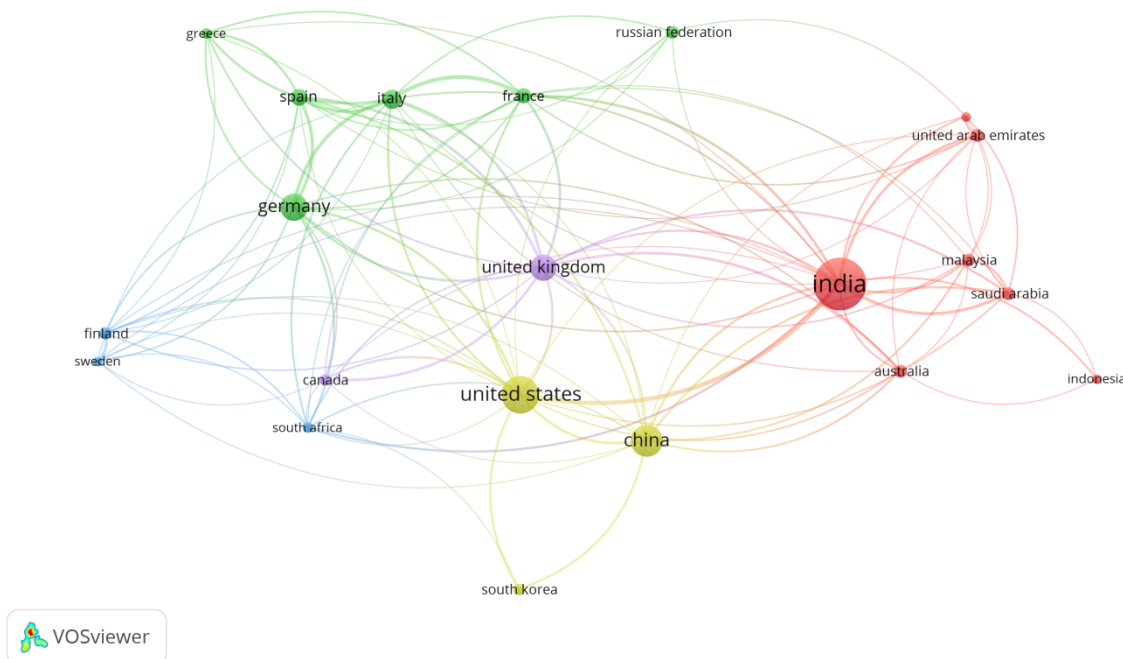
The results of Vosviewer in this research show which countries are leading in AI in Business Innovation research, the collaboration relationships between countries in this field and which countries are in need of strategies, infrastructure and policies around AI as they have a low research presence in this field.

The data was collected from the Scopus database and the results extracted were based on keywords such as "Artificial Intelligence", "Business Innovation" and "Innovation in Business". The articles extracted were 1039 and covered the period from 2014 to 2024. The types of documents included in the survey were "articles", "conference papers" and "reviews". A total of 116 countries have at least one publication related to this field but the first 21 were included in the research as a minimum of 15 publications was set by the authors.

India (211 publications), the United States (129 publications) and China (102 publications) are the leading countries in AI in business innovation research, followed by Germany (82 publications) and the United Kingdom (78 publications) with a significant number of publications. The country with the most collaboration is India (18) but its strongest links are mainly with the United States and Saudi Arabia. This is followed by the United States which collaborates mainly with 17 other countries and has stronger links with China apart from India, followed by the United Kingdom with 15 collaborations and stronger links with France, Italy, Spain and Canada. The collaborations between countries refer to the collaborations between the 21 countries leading the research in this field which means that there may be collaborations with other countries (see Figure 1). Finally, many African, Asian, South American and some not so developed European countries are marginalized in AI research in business innovation. The number of these countries is quite significant as limited resources, lack of national research and innovation policies, insufficient access to international research networks, etc., may have led to their marginalization from research.

Figure 1

Overlay map of co-authorship countries for papers published



Source: Vosviewer Software

Conclusions

From the results of the research there are specific countries that have focused on research around AI in business innovation and possibly many organisations operating in these countries are already implementing AI in their activities. These countries are setting research standards and guidelines for the use and development of the technology, have an advantage in various areas such as



entrepreneurship, attract international investment and enhance innovation and in general the countries that are leading in this research have a significant influence globally. In addition to the strong publication activity of these countries, there is also a strong conservatism among them and with many other countries (see Figure 1). These countries have the potential of sharing knowledge, formulating common research standards, fostering innovation, solving common challenges and through cooperation have wider access to equipment, infrastructure, etc. Finally, countries with low research productivity in the field of AI in business innovation need technological infrastructure, increased funding for research projects, formulation of policies for innovation and digital transition, strengthening cooperation with developed research centres, investment in curricula related to new technologies and entrepreneurship.

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