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**Article**

## Innovative application of artificial intelligence in business impacting socio-economic progress

Amfiteatru Economic Journal

**Provided in Cooperation with:**

The Bucharest University of Economic Studies

*Suggested Citation:* Dinu, Vasile (2024) : Innovative application of artificial intelligence in business impacting socio-economic progress, Amfiteatru Economic Journal, ISSN 2247-9104, The Bucharest University of Economic Studies, Bucharest, Vol. 26, Iss. 66, pp. 398-401, <https://doi.org/10.24818/EA/2024/66/398>

This Version is available at:

<https://hdl.handle.net/10419/300600>

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# Innovative Application of Artificial Intelligence in Business Impacting Socio-Economic Progress

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Please cite this article as:

Dinu, V., 2024. Innovative Application of Artificial Intelligence in Business Impacting Socio-Economic Progress. *Amfiteatru Economic*, 26(66), pp. 398-401.

DOI: <https://doi.org/10.24818/EA/2024/66/398>

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Artificial Intelligence (AI) is becoming increasingly prominent in modern societies, impacting all activities, from space research to daily people routines. From an economic perspective, AI is seen as a source of increased growth and progress. It can boost innovations, contribute to economic processes acceleration and optimization, provide solutions for better satisfying consumer needs, and expand business opportunities. In the meantime, AI has the potential to be extremely threatening to socio-economic development. For example, there are concerns about the possible establishment of dominance and control by large technology corporations, and the emergence of new forms of social division. While both hopes and fears about AI are plausible and legitimate, the expansion of its use requires at each new stage and for each new application a better understanding of the implications and foreseeable consequences, responsible and prudent action. Well-crafted regulation accompanied by real enforcement capacity might encourage harnessing the benefits of AI whilst limiting its adverse implications.

Businesses have an important role to play in the development and exploitation of AI. Rapid progress in digitization, widespread use of computer-assisted systems, connectivity, and data migration to the cloud have enabled accumulation of large amounts of significant information to be compiled and shared. AI technologies provide the only solution for enterprises to capitalize on these vast data resources. Enterprises need to implement AI technologies for better understanding and serving their customers, for accelerating new products development, for freeing staff from routine work and augmenting people's productive capacity, for reducing errors and improving quality conformity, for enhancing cybersecurity, for business model innovation and expansion. Despite the documented advantages of implementing AI solutions in enterprises, and a certain enthusiasm on the part of companies' management in adopting AI projects, there are still many unknowns regarding the expansion and increase in complexity of AI systems used in enterprises. Business leaders need a better understanding of the conditions under which the adoption of AI systems may actually lead to an increase in the overall performance of the company. Business researchers' community can provide an important contribution in systematically addressing knowledge gaps and challenges related to the adoption of AI applications by enterprises.

The papers in this issue of *Amfiteatru Economic* cover specific business experiences, applications and problems of artificial intelligence related to business functions as well as sector-specific issues of implementing AI-based solutions.

As markets become increasingly dynamic, a growing requirement for businesses is to maintain greater process agility in order to adapt quickly to external challenges. With this in mind, the paper, *Implications of artificial intelligence implementation on organizational*

*agility: a PLS-sem and PLS-pos approach*, aims to analyze the role of artificial intelligence in leveraging the digital capabilities of the organization as a means of amplifying organizational agility to improve internal and external processes. The main results indicated that the more digitally enabled organizations are, the more agile they become in relation to internal processes and changes in the external environment, a relationship facilitated by the use of artificial intelligence tools.

The originality of the paper is supported by the extension of the PLS-SEM results by segmenting respondents through FIMIX-PLS and PLS-POS, but also in focusing the area of impact of AI technologies at the level of organizational agility, a research direction less addressed in the literature. The study outlines a number of possible directions for managerial intervention, both in the area of improving public policies addressed to the field and in the area of optimizing business processes through the use of AI.

Due to the increasing use of technology, the complexity of business, IT-based technologies, artificial intelligence is increasingly used in various business areas such as recruitment, selection and interviewing, talent acquisition, hiring processes as well as training and communication. Starting from this aspect, the paper, *The perceptions of employees from Romanian companies on adoption of artificial intelligence in recruitment and selection processes*, aimed to investigate the perception of employees in Romanian companies to adopt and use artificial intelligence in recruitment and selection processes, being analyzed the factors that influence this intention of acceptance. Using the Technology Acceptance Model (TAM) which is based on two factors, namely perceived usefulness and perceived ease of use, the study aimed to determine the benefits of accepting artificial intelligence in recruitment and selection processes. The results obtained showed that almost all the variables proposed for the model positively influenced the intention to accept and use artificial intelligence, given the benefits it brings.

The article, *Artificial Intelligence and Smart Manufacturing: an Analysis of Strategic and Performance Narratives*, examines how notions of artificial intelligence and smart manufacturing are integrated into the business strategies and performance narratives of the 20 largest publicly traded global industrial companies in the US. Through this methodical analysis of the association between smart technologies and elements of industrial company strategy present in the investor interface represented by annual reports, the article contributes to a better understanding of how technological development has shaped this economic sector. Overall, the investigation of the annual reports in the study highlights the profound impact of technology in shaping strategic objectives, performance targets and operational approaches within the industrial sector. Observations on correlations highlight the critical links between smart manufacturing, strategy development and the achievement of operational excellence. This research makes significant contributions through qualitative evidence on the evolution of the digital environment and technological developments in industrial practices.

The main objective of the proposed study, *How does artificial intelligence influence the socio-economic performance of companies in the European Union?* is to analyse how the implementation of artificial intelligence systems can influence the socio-economic performance of firms in different sectors of activity in the European Union. To this end, data on firms in the 27 Member States of the European Union, operating in nine main sectors of activity, namely: manufacturing, trade, transport, construction, accommodation, food, water supply, waste management and information and communication technology, were selected and processed. The authors assessed the impact of artificial intelligence on

the number of employees, hours worked per employee, net turnover and value added of firms in the 27 EU Member States operating in nine main sectors, thus providing a comprehensive picture of how artificial intelligence affects different industries and economic areas and allowing the identification of specific trends and patterns for each sector. In this way, the article contributes to guiding technological and economic decisions to support innovation and competitiveness of European businesses in specific industries.

The central objective of the study, *The Impact of Artificial Intelligence Applied in Enterprises on Economic Growth, Welfare and Social Disparities*, is to analyse the effects of artificial intelligence in enterprises on economic growth, welfare and social disparities in income and unemployment, by developing empirical research at the European Union level. The paper aims to address a subject that is somewhat less explored and insufficiently clarified in the literature, contributing to this in several ways: (i) it empirically studies from a static and spatial perspective the situation of a conglomerate of countries represented by the EU Member States at the intersection between the field of artificial intelligence in enterprises and socio-economic development, (ii) the study is based on endogenous economic growth theory in which innovation, R&D and human capital are considered as catalysts of economic growth, (iii) the study addresses a gaping niche in the literature on the social implications of artificial intelligence. The research presents managerial and public policy implications, whose relevance in the current context is defining for the future transparent, reliable, secure and sustainable configuration of artificial intelligence in enterprises.

The paper, *Socioeconomic and Cultural Determinants of the Development of Artificial Intelligence*, addresses the effect of socioeconomic and cultural factors likely to have an effect on the development of artificial intelligence. This technology is assessed both overall and by component: skilled users, technical capabilities, regulations, societal support, academic support, algorithms and platforms, government support and private economic initiatives. The socio-economic determinants are economic growth and growth rate, education and R&D funding, high-tech exports, urbanisation, population size and labour force, and the cultural determinants are Hofstede's aggregated national indicators. allowing technologies to respect and reflect the cultural values and preferences of each society. The study aims to achieve two main research objectives (i) To identify and analyse some behavioural patterns of the world's countries regarding the level of development and structure of artificial intelligence activities and (ii) To highlight the main determinants of the development of artificial intelligence at national level.

Awareness of the whole complex of factors can guide the process of regulating artificial intelligence, addressing risks and social impacts, promoting responsible and ethically sound development as a priority.

Generative Artificial Intelligence (GenAI) has the potential to create a competitive crisis between technologically advanced and less developed companies. In addition, it can give rise to legal, moral and ethical issues such as copyright infringement and the production of false information. It is therefore essential for organisations to ensure that the productivity of artificial intelligence is maximised in order to increase its benefits and reduce any potential harm.

The purpose of this study, *Innovative applications in business: an evaluation on generative artificial intelligence*, is to provide suggestions on the use and potential of GenAI technologies in the corporate sector and to highlight potential areas of future

research in this area. The paper examines the benefits and drawbacks of using GenAI tools in individual companies and departments and highlights potential risks and dangers.

Artificial intelligence has become an important technology for business in recent years, with a significant impact on increasing efficiency, decision-making and the quality of the customer experience. Artificial intelligence can automate routine tasks, analyse large amounts of data and provide insights that help businesses make informed decisions. It can also reduce labour costs and improve operational efficiency, leading to a competitive advantage over businesses that have not adopted artificial intelligence. Overall, in business processes, its integration has proven to be a valuable tool for companies looking to improve their operations and become more competitive.

**Editor-in-chief**  
**Vasile Dinu**