IS ARTIFICIAL INTELLIGENCE A THREAT OR A DRIVER FOR EUROPEAN ENTREPRENEURSHIP?

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Abstract:

The main purpose of the article is to try to answer the question – whether artificial intelligence is a threat or a driver for European (EU) entrepreneurship. The subject of the study is the relationship of artificial intelligence – European (EU) entrepreneurship. In order to fulfil a research goal, the method of description, the historical method and the system-structural method are used. Descriptive statistics is also used. It can be concluded that it cannot be said categorically whether artificial intelligence is a threat or a driver for European (EU) entrepreneurship. There are both positive and negative aspects and neither aspect predominates.

Keywords: artificial intelligence, entrepreneurship, European (EU) entrepreneurship, European Union

Introduction

Our article is structured within two very broad and very complex theoretical and practical fields – Artificial intelligence (AI) and European entrepreneurship. In this regard, it is necessary to give a general description of each of these two fields.

At the beginning of the 21st century, man's millennial dream of creating a machine (an artificial creation) that would replace him in mental and physical activity and make his life much easier began to come true. This machine is nowadays personified by artificial intelligence. About two centuries ago, two main directions were formed theoretically regarding the essence and characteristics of this same smart machine, which we can classify as a positive direction (the machine will help man) and a negative direction (the machine will harm man). The main directions envisaged also have not only theoretical, but also practical and even purely artistic dimensions. In the world of literature and art, for example, AI is presented as something good – the loving robot Robbie

from Isaac Asimov's story „Robbie"[1], but also as something evil – the monster Frankenstein from James Whale's film from 1931 based on the novel by Mary Shelley.[2] In the world of ideas (science) good and evil are also presented, but under a completely different terminology and from a radically different perspective. However, the essence, somewhat paradoxically, is the same.

Today, it can be confidently asserted that the turning point in the birth of artificial intelligence, understood in the modern sense, was the famous test of Alan Turing (1912-1954), proposed by him in 1950 in his article „Computing Machinery and Intelligence", which in 2025 is assessed as a true scientific classic.[3] According to Turing, the question „Can a machine think?" is somewhat absurd, as he proposes a completely different formulation of the problem. The researcher is firmly convinced that we must move beyond speculative and even meaningless reasoning about the possibilities of AI, moving directly to its experimental study with the widespread use of computers. This is exactly what he subsequently did.

Juliana Hadjichoneva accurately notes that even in early research from the beginning of the 18th century, entrepreneurship was associated with economic activity and risk-taking (Richard Cantillon) and with organization and leadership in the economy (Jean-Baptiste Say).[4]

According to the authoritative researcher of entrepreneurship Kiril Todorov (1948-2019), both as a subject of research and as a practice, entrepreneurship is a mega-activity that leads, generates other activities in its wake and significantly influences them.[5] It helps solve a number of problems, including those specific to countries in transition such as: changes in the economic and corporate structure, development of an entrepreneurial-oriented business culture and creation of a strong middle class. Entrepreneurial activity is a complex set of processes, phenomena, and behaviours, which is realized by people with potential in an increasingly dynamic and increasingly competitive business environment. The globalization of the economy, its multicultural dimensions, the development of knowledge as a powerful catalyst for success, and integration processes in Europe are the key factors that have a decisive influence on modern entrepreneurship.

Methodology

It is undeniable that the scientific problem of whether artificial intelligence is a threat or a driver for European (EU) entrepreneurship is too extensive and

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[1] Asimov, I. (1950), *I, Robot*, New York, Gnome Press.

[2] Shelley, M. (1818), *Frankenstein; or, The Modern Prometheus, Vol. 1, London,* Lackington, Hughes, Harding, Mavor & Jones.

[3] Turing, A. (1950), *Computing Machinery and Intelligence*, Mind 49, LIX/236, pp. 433-460.

[4] Хаджичонева, Ю. (2022), *Предприемачество, иновации и изкуствен интелект в България - динамика и управление, София*, Издателски комплекс - УНСС.

[5] Тодоров, К. (2010), *Българското предприемачество по време на кризата и като двигател на следкризисното развитие*, Годишник на УНСС 2010 г., София, УНСС, стр. 5-25.

too heterogeneous. In the limited scope of this article, however, we can describe, analyse, and interpret only a small part of the same problem. In this regard, we focus only on some of the most important aspects of the interaction artificial intelligence – European (EU) entrepreneurship. Otherwise, even a multi-volume scientific series could be published on the issue.

The main purpose of the article is to try to answer the question – whether artificial intelligence is a threat or a driver for European (EU) entrepreneurship. The subject of the study is the relationship of artificial intelligence – European (EU) entrepreneurship. In order to fulfil our research goal, we use the method of description, the historical method and the system-structural method. We also use descriptive statistics. To our opinion all the listed methods are applicable to the subject of the study and the research objective.

Results and Discussion

It is important to note that there are many unresolved academic issues in the relationship between artificial intelligence and European entrepreneurship.

First of all, what exactly is entrepreneurship – is it a type of management or something else? Also – what is management and is there a universal management? In this regard, we can cite the point of view of Marcus Pudelko and Anne-Wil Harzing (2007), who in the study „How European is Management in Europe?" analyse the past, present and future of management practices on the old continent. Researchers are firmly convinced that until the end of the 1980s, management practices in Europe were rather different, and they were strongly influenced by different national traditions and institutional variations. However, from the 1990s to the present, in the context of globalization, convergent trends have begun to prevail. Perhaps the most important conclusion that Markus Pudelko and Anne-Wil Harzing make is that there is no typical European model of business governance, and that the European model is actually an American model. The researchers also predict that in the future, the world will become increasingly distinctly multipolar and the virtual monopoly of the United States in setting the standards for good governance practices will weaken.[6]

The statement of Pudelko and Harzing, in our opinion, is exaggerated, although in general it is true. It is exceedingly difficult, if not impossible, to predict the future development of good practices in management and entrepreneurship, and on a global scale. It seems to us that the only certain thing is that the first half of the 21st century will be dominated by the economic and entrepreneurial rivalry between the United States of America and the People's Republic of China, which may well develop into a military clash. We assume that the European Union will play the role not of a global, but of a secondary (regional) economic and entrepreneurial power.

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[6] Pudelko, M., Harzing, A-W. (2007), *How European is management in Europe? An analysis of past, present and future management practices in Europe,* European Journal of International Management, Vol. 1, No 3, p. 207.

We can conclude that entrepreneurship is a type of management, but a special, specific management.[7] In it, in a somewhat bizarre way, objective (characteristics of the environment) and subjective (characteristics of the entrepreneur's personality) elements are intertwined.

Second, there is no general (universal) theory of artificial intelligence. According to Pei Wang (2012), the main obstacle to progress in AI research is „theoretical nihilism".[8] In this case, the research community as a whole has not made enough effort to solve this task, namely – to create a general theory of AI. Instead, this community either follows some other developed theories on certain related, although very different problems in relation to artificial intelligence, or carries out research based on intuition or practical considerations, in the hope that the theoretical problems can eventually be solved or avoided with the help of various technical tricks. Pei Wang specifies that artificial intelligence is indeed a very difficult scientific problem, and it is unlikely that a perfect (or even satisfactory) general theory will be obtained very soon for the same problem. However, even the existence of an imperfect theory is a better alternative than no theory at all. Also, a theory developed in another scientific field does not necessarily retain its authority in the field of artificial intelligence, no matter how successful it is in its original domain. Given the special situation in the field, a general theory of artificial intelligence must be descriptive with respect to the human mind and normative with respect to computer systems. To achieve this goal, a general theory of artificial intelligence must build a notion of general intelligence that does not depend on the details of the biological brain or the characteristics of the electrical computer.

Let us now turn to descriptive statistics regarding artificial intelligence in the context of European (EU) entrepreneurship.

First, let us compare enterprises using at least one AI technology among EU countries in 2021, 2023 and 2024 (as shown in Table 1). The statistical order shows that the using at least one AI technology among EU countries is constantly growing, and significantly so, for the period from 2021 to 2024. Data for 2024 indicate that the share of enterprises using AI ranged between 3.07% (Romania) and 28.89% (Slovenia). The highest share for 2024 was recorded in Slovenia (28.89%), followed by Denmark (27.58), Sweden (25.09%), Belgium (24.71%) and Finland (24.37), while the lowest shares were recorded in Romania (3.07%), Poland (5.90%), Bulgaria (6.47%), Hungary (7.41) and Portugal (8.63%). The general conclusion can be drawn is that the percentage of the enterprises using at least one AI technology among EU (27 countries) in 2024 is not particularly high – 13.48%. However, the percentage is constantly increasing from year to year.

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[7] Цанов, И. (2024), *Изкуствен интелект и предприемачество*, Е-книга (CD), София, БАК.

[8] Wang, P. (2012), *Theories of Artificial Intelligence - Meta-Theoretical considerations.* Wang, P., Goertzel, B., (eds), Theoretical Foundations of Artificial General Intelligence, Atlantis Thinking Machines, Vol 4., Paris, Atlantis Press, pp. 305-323.

Table 1. Entreprises in EU use at least one of the AI Technologies

EU Country	2021	2023	2024
Belgium	10.32	13.81	24.71
Bulgaria	3.29	3.62	6.47
Czechia	4.46	5.90	11.26
Denmark	23.89	15.17	27.58
Germany	10.56	11.55	19.75
Estonia	2.77	5.19	13.89
Ireland	7.88	8.01	14.90
Greece	2.61	3.98	9.81
Spain	7.67	9.18	11.31
France	6.67	5.88 (b)	9.91
Croatia	8.74	7.89	11.76
Italy	6.17	5.05	8.20
Cyprus	2.59	4.67	7.90
Latvia	3.72	4.53	8.83
Lithuania	4.45	4.86	8.76
Luxembourg	13.00	14.45	23.73
Hungary	2.98	3.68	7.41
Malta	10.16	13.17	17.30
Netherlands	13.10	13.37	23.06
Austria	8.83	10.79	20.27
Poland	2.86	3.67	5.90
Portugal	7.20	7.86	8.63
Romania	1.38	1.51	3.07
Slovenia	11.73	11.37	28.89
Slovakia	5.19	7.04	10.78
Finland	15.79	15.10	24.37
Sweden	9.92	10.37 (b)	25.09
EU (27 countries)	**7.65**	**8.03**	**13.48**

Observation flag: (b) break in time series
Source of data: Eurostat DOI:10.2908/isoc_eb_ai

Second, as shown in Table 2, large enterprises used AI more than small and medium enterprises. In 2023, 6.38% of small enterprises, 13.04% of medium enterprises and 30.40% of large enterprises used AI. In 2024, 11.21% of small enterprises, 20.97% of medium enterprises and 41.17% of large enterprises used AI. These differences are probably due to many factors, but the most significant are the following:

Financial resources – Large enterprises have bigger budgets for AI investments, including development, deployment, maintenance, and staff training. They can afford expensive cloud computing, software licensing, and building their own machine learning models.

Data access – Large enterprises have large data sets that are critical to the effectiveness of AI. Larger quantities and higher quality of data enable more precise models and analyses for business and development.

Technical expertise and talent – Large enterprises can attract and retain top AI specialists, including software engineers, data analysts, and machine learning specialists. Small and medium enterprises (SMEs) often have limited access to such qualified personnel.

Infrastructure – Large enterprises have their own on-premises or cloud infrastructure to process large volumes of information, while SMEs often rely on more limited resources, which limits their ability to deploy large-scale AI solutions.

Automation capabilities – Large enterprises often deploy AI to optimize logistics, forecast demand, personalize marketing, and automate routine tasks, resulting in significant savings. Small and medium businesses may struggle to find cost-effective applications for AI.

Partnerships and ecosystems – Large enterprises often work with leading technology companies (such as Google, Microsoft, Amazon), which gives them access to the latest AI technologies and solutions. Small and medium businesses typically rely on off-the-shelf SaaS solutions, which may not fully meet their needs and intentions.

We can summarize that while large enterprises are better positioned to implement AI due to their resources, SMEs can take advantage of cloud AI solutions and specialized platforms to reduce costs and optimize their processes.

Table 2. Enterprises using AI technologies by size class in EU, 2023 and 2024 (% of enterprises)

Size class of enterprises	2023	2024
All enterprises	8.03	13.48
Small enterprises	6.38	11.21
Medium enterprises	13.04	20.97
Large enterprises	30.40	41.17

Source of data: Eurostat (online data code: isoc_eb_ai)

Artificial Intelligence has emerged as one of the most transformative technologies of the 21st century, with profound implications for entrepreneurship within the European Union. The debate over whether AI represents a threat or a driver for entrepreneurship is complex, as it encompasses economic, political, social, psychological and ethical dimensions. Our analysis explores both perspectives, drawing on academic research and empirical evidence to provide a balanced view.

AI as a Driver for Entrepreneurship.

1. Innovation and New Business Opportunities. AI enables the creation of innovative products, services, and business models, fostering entrepreneurship across various sectors and fields.[9] Startups leveraging AI technologies, such as machine learning, natural language processing, and computer vision, are disrupting traditional industries and creating new markets. For example, AI-driven healthcare startups are revolutionizing diagnostics and personalized medicine, while fintech companies are enhancing financial services through predictive analytics and automation.
2. Access to Global Markets. AI-powered platforms, such as e-commerce and digital marketing tools, enable entrepreneurs to reach global audiences with minimal investment.[10] This democratization of access to international markets empowers EU startups to compete on a global scale, driving economic growth and innovation. However, it is unclear what will happen to global markets as a result of the radical political and economic changes on a global scale.
3. Increased Efficiency and Productivity. AI tools can streamline operations, reduce costs, and improve decision-making, allowing entrepreneurs to scale their businesses more effectively.[11] Automation of repetitive tasks frees up human resources for more creative and strategic activities, enhancing overall productivity. This is particularly beneficial for small and medium-sized enterprises, which often face resource constraints.
4. Support from EU Policies and Funding. The EU has recognized the potential of AI and is actively supporting its development through various initiatives. These initiatives provide funding, infrastructure, and regulatory frameworks to encourage AI-driven entrepreneurship (AI innovation package to support Artificial intelligence startups and SMEs). Additionally, the EU's focus on ethical AI ensures that innovation aligns with societal values, fostering trust and adoption (AI Act).

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[9] Barley, S. R., Bechky, B. A. and Milliken, F. J. (2017), *The changing nature of work: careers, identities, and work lives in the 21st century*, Academy of Management Discoveries, 3 (2), pp. 111-115.

[10] Keupp, M. M. and Gassmann, O. (2009), *The past and the future of international entrepreneurship: a review and suggestions for developing the field*, Journal of Management, 35 (3), pp. 600-633.

[11] Цанов, И. (2018), *Управленско решение: Теория и практика*, София, БАК.

AI as a Threat to Entrepreneurship.

1. Job Displacement and Economic Inequality. The automation of tasks through AI could lead to job displacement, particularly in sectors reliant on routine and manual labour. This may exacerbate economic inequality and reduce consumer purchasing power, indirectly affecting entrepreneurial ventures that depend on domestic demand. Moreover, the concentration of AI capabilities in large corporations could marginalize smaller players, creating barriers to entry for new entrepreneurs. This threat also has strong political dimensions.
2. High Costs and Technical Barriers. Developing and implementing AI technologies requires significant investment in infrastructure, talent, and research. For many startups, these costs may be prohibitive, limiting their ability to compete with established firms that have greater resources. This could lead to a consolidation of market power among tech giants, stifling competition and innovation.
3. Ethical and Regulatory Challenges. The ethical implications of AI, such as data privacy, algorithmic bias, and accountability, pose significant challenges for entrepreneurs. Navigating the complex regulatory landscape in the EU, including the General Data Protection Regulation (GDPR) and AI Act, can be daunting for startups. Non-compliance risks fines and reputational damage, which could deter entrepreneurial activity.[12]
4. Dependence on External Technologies. The EU's reliance on non-European AI technologies, particularly from the US and China, raises concerns about technological sovereignty. This dependence could limit the competitiveness of EU startups and SMEs and expose them to geopolitical risks, such as trade restrictions or supply chain disruptions.

Ultimately the impact of AI on entrepreneurship in the EU is not inherently positive (Driver) or negative (Threat); rather, it depends on how the technology is governed and integrated into the economy. To maximize the benefits and mitigate the risks, the following measures are essential:

1. Investment in Education and Skills Development. Equipping the workforce with AI-related skills through education and training programs will ensure that entrepreneurs and employees can adapt to technological changes regarding Artificial-Driven Management.[13] This will also foster a culture of innovation and lifelong learning without which it is no longer possible to achieve results.
2. Support for SMEs and Startups. Providing financial incentives, technical assistance, and access to AI infrastructure will enable smaller businesses

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[12] Цанов, И. (2023), *Управление на риска в корпоративната сигурност*, Е-книга (CD), София, БАК.

[13] Schrettenbrunnner, M. B. (2020), *Artificial-Intelligence-Driven Management*, IEEE Engineering Management Review, 48 (2) (2020), pp. 15-19.

to compete with larger corporations and new aggressive players. Public-private partnerships and innovation hubs can play a crucial role in this regard.

3. Ethical and Inclusive AI Frameworks. The EU must continue to lead in the world in developing ethical AI standards that promote transparency, fairness, and accountability. This will build public trust and create a level playing field for entrepreneurs and SMEs.
4. Promotion of EU Technological Sovereignty. Encouraging the development of homegrown AI technologies and reducing dependence on external providers will enhance the EU's competitiveness and resilience.

Conclusion

Artificial Intelligence is reshaping the global economic landscape, prompting significant transformations in entrepreneurial activity and development. AI is a completely new phenomenon, unprecedented in human history, which makes it particularly difficult to study. Within the European Union, AI presents both opportunities and challenges, raising the critical question of whether it acts as a driver of entrepreneurship or poses a fundamental threat. On one hand, AI serves as a catalyst for entrepreneurial growth by enhancing efficiency, reducing operational costs, and fostering innovation. Conversely, AI also presents substantial challenges, particularly concerning employment displacement, market concentration, and regulatory constraints.

In the article fulfilling its research objective, we briefly described, analysed and interpreted the positive and negative aspects of the creation of artificial intelligence in European (EU) entrepreneurship. Finally, we can conclude that it cannot be said categorically whether artificial intelligence is a threat or an engine for European (EU) entrepreneurship. There are both positive and negative aspects. There is also great uncertainty related to geopolitical and geoeconomic elements that strongly influence European entrepreneurship and business politics in general. We cannot give a definitive prediction of what the future will be exactly and which of the two aspects (Threat or Driver) may prevail.

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