

STUDY CONCERNING AI USAGE IN SME FROM OLTENIA REGION

Cătălin Mihail BARBU

ORCID: <https://orcid.org/0000-0001-6733-3473>

University of Craiova, Craiova, Romania

Email: mihail.barbu@edu.ucv.ro

Valeri Viorel SITNIKOV

ORCID: <https://orcid.org/0009-0005-5522-6095>

University of Craiova, Craiova, Romania

Email: valeriviorel.sitnikov@gmail.com

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Abstract:

The artificial intelligence (AI) wave is making its presence felt in all sectors of the economy. Small and medium-sized enterprises (SMEs) are looking to ride this wave in order to improve their organizational performance and remain competitive. In this paper, we conducted research on the use of AI in SMEs in the Oltenia region. The results of the study show that the use of AI in SME is still in its infancy, being used rather in an informal and personal setting. There are a number of barriers and perceived risks that prevent the widespread use of AI. We show that SMEs need to have a strategic approach to AI in order to be able to capitalize on its potential.

Keywords: *artificial intelligence, small and medium size enterprise, digitalization, organizational capabilities*

1. Introduction

Artificial intelligence is increasingly making its presence felt in the business world. SMEs have the organizational and decision-making flexibility to rapidly implement AI solutions in their activities. AI comes with enhanced operational efficiency, which allows SMEs to automate their processes and increase their competitiveness (Deloitte, 2022). Fast, results-oriented AI solutions increase the speed of decision-making and solution implementation at the organizational level. AI solutions improve the efficiency of organizations by taking over and automating routine tasks, freeing up employees' time and allowing them to focus on activities that generate greater added value (Davenport et al., 2020). However, many companies do not know how to fully take advantage of the AI-capabilities existing on the market, nor to integrate these capabilities in their day-to-day activity. Of course, AI is causing fears and concerns in the economic world about its possible side-effects: jobs destruction, loss of control, fear of unknown, ethical aspects that are not yet fully understood and verified (Grewal et al., 2024). SMEs are aware of these draw-backs, which restrain them from fully engaging with AI apps. The rationale of our study is to assess the degree of AI usage in the SMEs in Oltenia region. To do so, we organize our paper as follows: in the next section we discuss relevant

literature review, in section three we depict the research methodology, in section four we present and discuss the results, and we end the paper with conclusions.

2. Literature review

SMEs are concerned with digitalization and information technology usage. In this respect, using AI is an evolutionary process in computing process, but the scope of this stage will be of grater magnitude (Del Sarto and Piccaluga, 2021). The adoption of AI-based solutions requires an organizational redesign, whereby the new structure is correlated with the requirements of using AI. Not only that, but the adoption of AI implies a restructuring of the business models of SMEs, so that the adoption of AI is perceived as carrying risks by SME managers (Sotamaa et al., 2024). According to the resource-based view, AI can be used in different areas of the enterprise: the production process, financial-accounting, the design and development of new services and products, marketing. Other studies indicate a positive correlation between AI in marketing and financial performance, customer performance and learning and growth performance (Abrokwah-Larbi and Awuku-Larbi, 2024). Through its effects and results, AI has the ability to transform businesses, leading them on the road to efficiency (Al-Surmi et al., 2022; Ahmed, 2024). AI can analyse large data volume in a very short time, enabling fast and reliable decision-making (Soori et al., 2024). By eliminating the need to perform tasks that could be automated, a lot of SMEs' managers time could be free up, allowing them to focus on essential tasks. However human systems and computer systems need to work together to achieve synergetic results (Soori et al., 2024). AI can help business intelligence systems by providing data on markets, competition and customers (Bharadiya, J. P., 2023).

AI allows customization of marketing strategies and better interaction with customers. Personalized services contribute to customer loyalty. To offer personalized services, technology is of great help (Mdoe et al., 2023). Customers' preferences can be recorded, learned and displayed at each interaction (Cheung et al., 2021). AI has the potential to disrupt the relationship between the firm and the customer, impacting customer engagement (Hollebeek and Macky, 2019). Artificial intelligence can be used to segment customers and propose them relevant products and services. Artificial intelligence and data science can be used to figure out and predict customer intentions, emotions, preferences and their forecasted requests to access services (Cao et al., 2021). Besides that, SMEs have the opportunity to generate automated email marketing campaigns, to create new content and to schedule social media posts (Mdoe et al., 2023).

SMEs often do not have the expertise to configurate, implement, and adapt state-of-the-art AI technologies. Another challenge is to integrate AI solutions within existing business systems, because of advanced IT infrastructure requested (Carayannis et al., 2025). Investing in AI can be costly for a small firm and these investments need to be well-calibrated. AI usage is increasing in SMEs as AI apps become easy to use, have affordable prices, and SMEs can receive technical support from providers. AI solutions' providers look to strengthen the collaboration with SMEs, and to develop strong customer relationship management capabilities (Migdadi, 2021).

3. Research methodology

The SMEs category includes micro, small or medium-sized enterprises that have fewer than 250 employees and a net turnover of less than 50 million euros or total assets of less than 43 million euros. They make up the largest part of the economic system, having the most employees. While large enterprises have the resources to implement AI applications, SMEs have the operational flexibility that allows them to test and implement these solutions. In addition, SMEs should act to maintain and increase their competitiveness, and for this they must adopt AI-based applications (Hansen and Bøgh, 2021).

The objectives of the research were:

- to identify in what areas of business AI is used;
- to identify the AI solutions and the reasons behind the decisions to use these solutions;
- to identify the barriers that prevent AI implementation;
- to identify the perceived risks in adopting AI.

For our study we selected a sample of 143 SMEs from the Oltenia region, using the convenient sample method. Oltenia region is located in the South-West of Romania and comprises five counties: Dolj, Gorj, Olt, Mehedinți and Vâlcea. The study was carried out between January and March 2025. As shown in figure 1, 52% of SMEs have a net turnover of less than 2 million euros, 33% of companies have a net turnover of less than 10 million euros and 15% of the companies have a net turnover of less than 50 million euros. The questionnaires were applied through a face-to-face interview with the company manager or the company owner. In this way, we ensured that we obtained pertinent information from the decision-makers in the company.

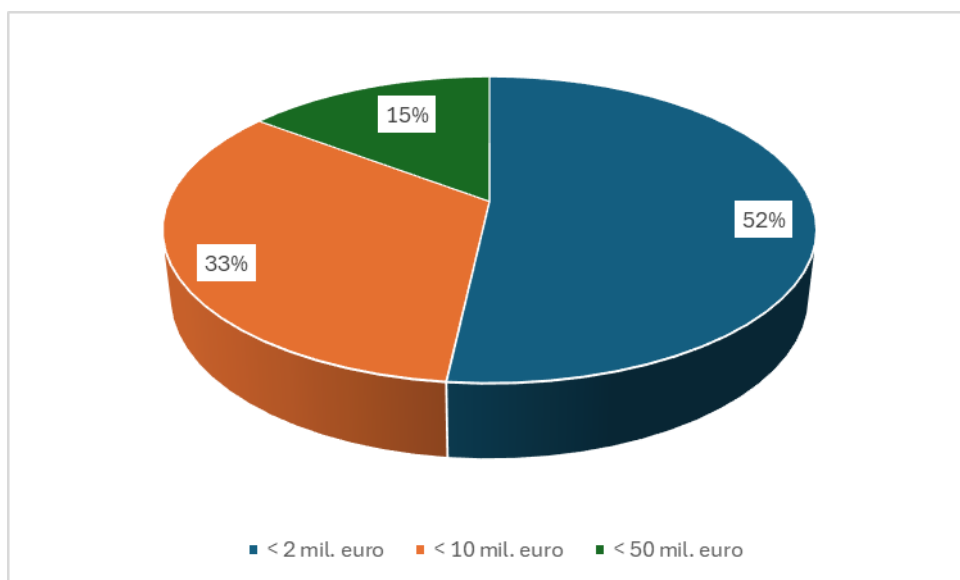


Figure 1. Sample structure according to SMEs net turnover

Based on field of activity, the sample is made up of 59% services companies, 19% trade companies, 11% manufacturing companies, 7% construction companies, and 4% companies that are active in the agriculture sector (figure 2).

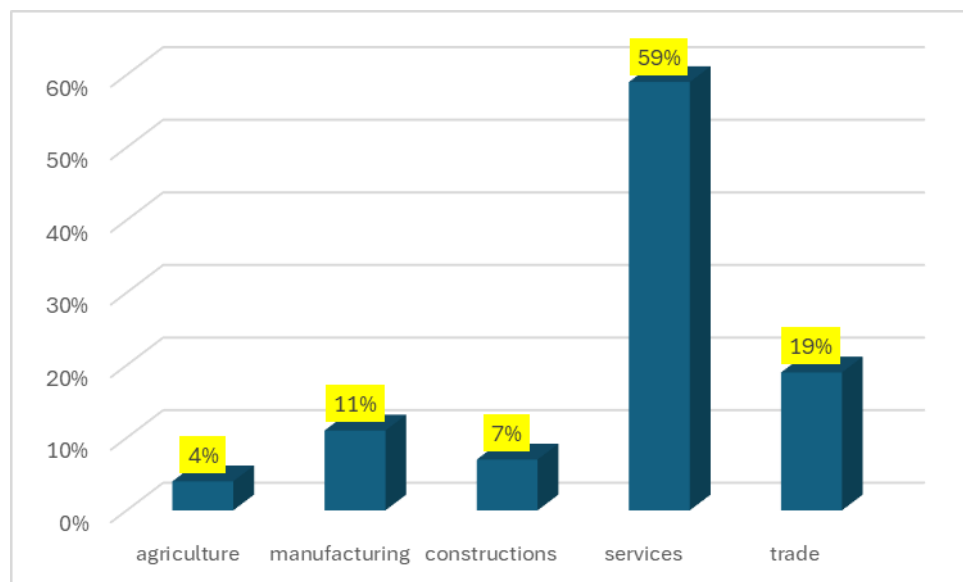


Figure 2. Sample structure according to economic sector

4. Findings and discussions

We identified that all companies use AI in their activity. However, only 3% of companies have a formalized procedure on how to use AI. The other SME are using AI in an informal and decentralized manner, mostly at the initiative of employees trying to optimize their activities and tasks. We appreciate that this lack of formal procedures in using AI can be a potential threat, as AI results are not always reliable. Also, without specific procedures, companies cannot integrate AI into their strategy.

When asked “in which areas of the company do you use AI” we found that 64% of the SMEs surveyed use AI applications for marketing activities, 41% of enterprises use AI to stimulate innovation and product development, 14% used AI in production activities and 7% in accounting (figure 3). For now, due to not so large volume of activity, selected SME did not implement AI on accounting on a large scale. As expected, marketing activities have been realised with generative AI apps like ChatGPT. The low number of SME that implemented AI in accounting can be explained by the fact that a large part of SMEs has externalized accounting services. However, it is estimated that the accounting specialist has to be capable to configure and use AI in his profession (Brabete et al., 2024). We appreciate that there is the need for combined solutions that allows for collaboration and futures updates, since the rate of change in the technological sector is very dynamic.

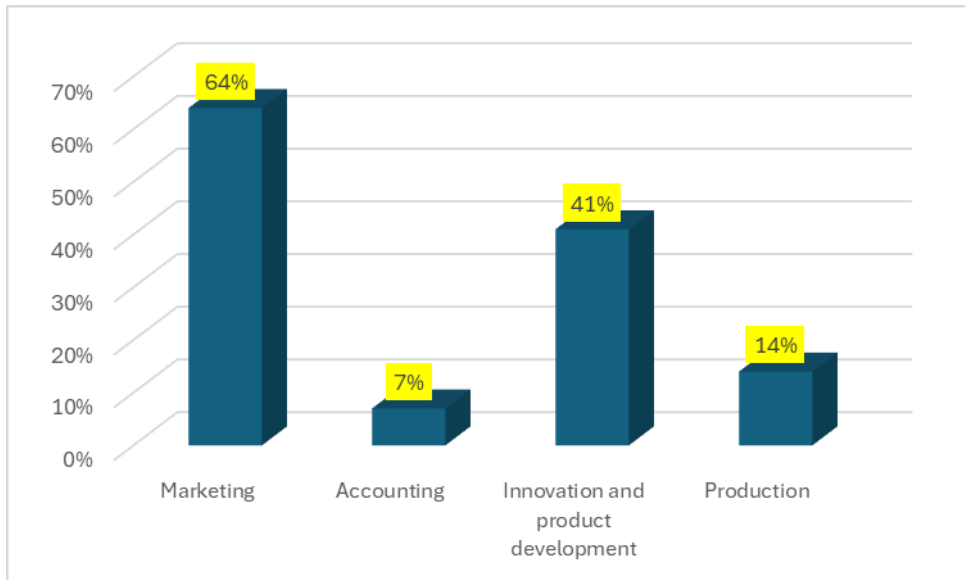


Figure 3. Organizational functions where AI is being used

With regard to AI solutions used by SMEs, we found out that 91% of the SME use generative-AI, such as ChatGPT. These types of AI are easiest to implement, usually for free or for a small amount of money. A percent of 32% of selected SME have used marketing automation solutions and 21% of the SME did use carious AI capabilities embedded in existing software applications, like Microsoft Copilot (figure 4). SME are looking forward to optimize their activity and Chatbots are among the first solutions available on the market, and they are relative easily to implement (Sharma et al., 2024).

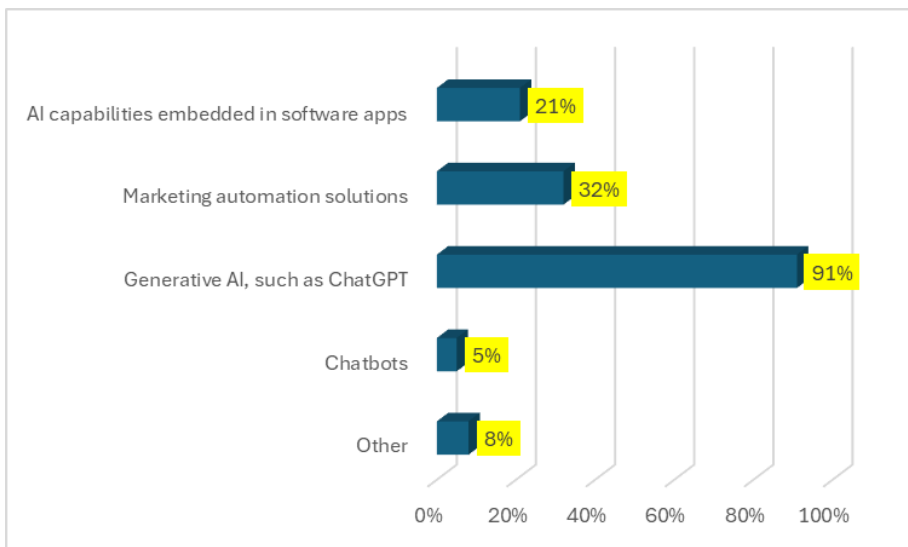


Figure 4. Types of AI solutions used

Next, we wanted to find the reasons behind using AI. 93% of the companies are using AI to improve employee productivity, while 61% of respondents indicate that there are using AI to optimize decision-making (figure 5). These results show that generative AI is being used to immediately raise productivity and ensure a quick and efficient decisional process. 37% of SME use AI to scrutinize entering new markets and only 27% are using it for processes optimization. These results prove that AI is being used only for short-term goals, at individual level, and is not integrated in a long-term orientation of the company.

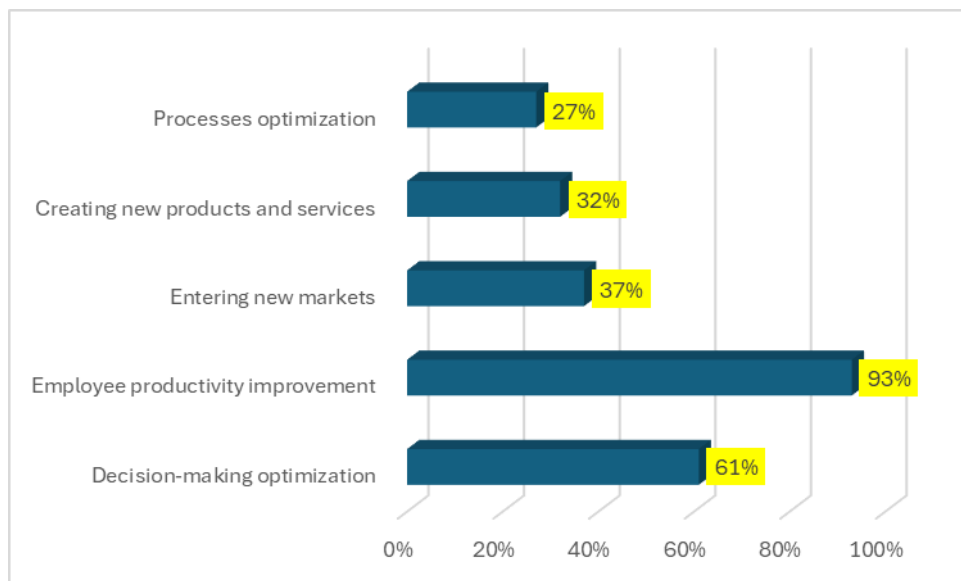


Figure 5. Reasons for using AI

The barriers to AI adoption identified by respondents include resistance to change (57%), high initial costs of AI adoption (63%), practical inability to use AI (48%), and lack of staff experience (65%) (figure 6). Despite their organizational flexibility and agility, SMEs lack the human and financial resources to move to AI adoption on a large scale. Therefore, these barriers exist, which can be overcome through perseverance and continuous learning. Staff lack of experience and resistance to change could be reversed if the SMEs invest in staff training. These trainings and courses can be performed in-house or with help of AI apps suppliers. From the plethora of AI solutions, SME should implement the one that best suits its need and has a direct impact on productivity and results. Initial high-costs of implementing an AI based tool can quickly generate generous return on investments, that compensate for the allocation of money to fund the investment.

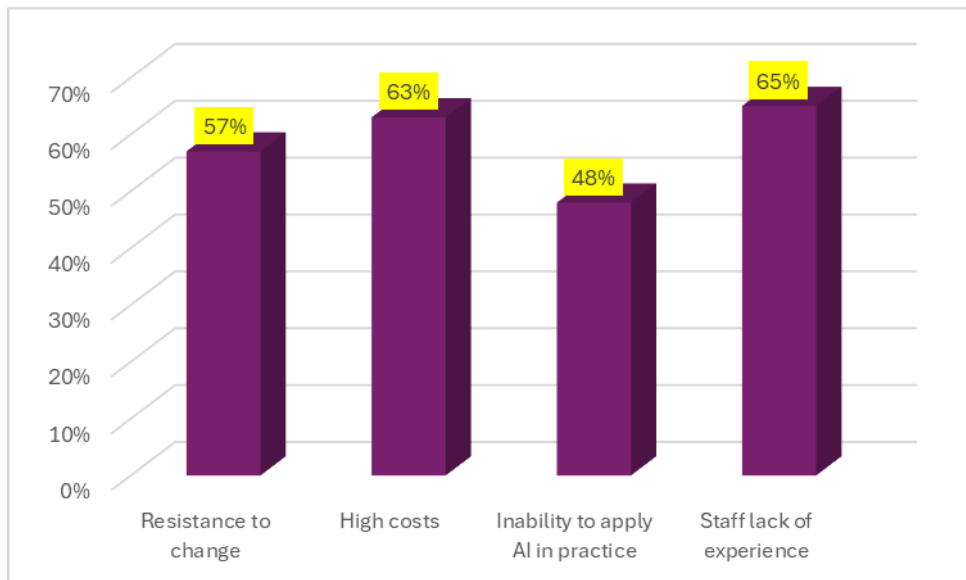


Figure 6. Barriers in adopting AI

Regarding the risks perceived by managers in adopting AI, these refer to fear of losing decision-making control (75%), fear of not implementing original solutions (55%), excessive and irreversible dependence on AI (71%) and possible cybersecurity vulnerabilities (79%) (figure 7). There is a fear within SMEs regarding the use of AI, and this fear can only be overcome through training of managers and staff to enable them to capitalize on the advantages of AI and implement risk mitigation measures.

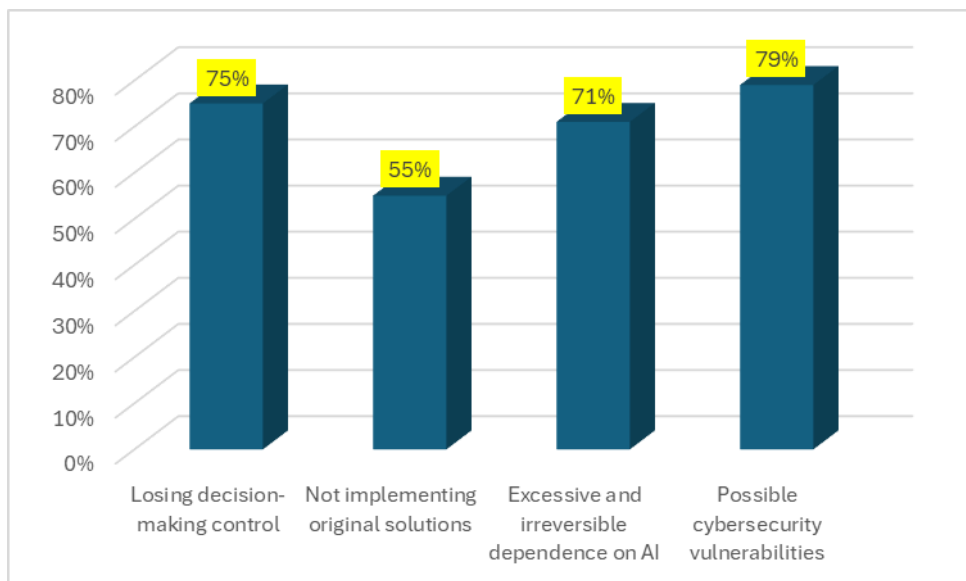


Figure 7. Perceived risks in adopting AI

Step by step AI is becoming a common presence among the operations of SMEs. As AI apps become user-friendly and easy to handle and implement, SMEs rush to take advantage of the AI capabilities. Perceived risks are a barrier in AI adoption, and managers of SMEs should evaluate these risks against potential competitive gains (Indrasari et al., 2024).

5. Conclusions

We found that SMEs have an opportunistic approach to AI adoption, in the sense that applications are used in the short term to solve a pressing problem or optimize a task. What is really important is for SMEs to use AI strategically, that is, to include the use of AI in their future strategy (Carayannis et al., 2025). This consistent approach to AI is what allows the full benefits of AI to be captured and exploited.

To remain competitive, SMEs need to invest in people to use, master, supervise and correct the results of AI (Lemos et al., 2022), where these results do not yet provide the most reliable outcomes. Staff training refers to both technical training, but also to an ethical approach to the process of using AI. In order to be able to capitalize on the potential of AI, it is important that staff in all departments of the organization have knowledge about AI. In this way, staff can also avoid possible job loss.

SMEs can start implementing simple AI solutions, then as they gain confidence in the results obtained, they can increase the complexity of the AI applications used. SMEs must take care not to lose contact with customers when using these applications. Thus, at the same time, they should implement customer education activities, who in turn must become versatile in the use of AI.

It is important that the positive effects of AI are reflected on SMEs, but also on employees and society in general. It is desirable that the impact of AI, however disruptive, not to have negative effects on employment and the competitiveness of enterprises. The use of AI applications is still in its infancy, mostly in an informal manner, rather than a large-scale institutionalized approach. AI embedded-capabilities from various software applications and generative AI are mainly used, rather than AI that optimize and automate processes. Also, the use of AI is used as a complementary way to current tasks, to increase the productivity and efficiency of daily assignments. Therefore, SMEs in the Oltenia region still have a long way to go to widely integrate AI applications into their activity, so as to take full advantage of the potential of these applications.

Our study presents a number of limitations, which do not limit its explanatory potential, such as the limited sample and the small number of investigated aspects. Future research directions could consider other facets of the impact of AI on SMEs: are SMEs ready to embrace digital transformation? Do SMEs have the potential to find the right people to manage AI applications? What are the negative consequences of implementing AI in SMEs? How does the use of AI applications influence the relationship between SMEs and their current and potential customers?

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