Agility and Artificial Intelligence Adoption: Small vs. Large Enterprises

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Abstract

This article presents the findings of a survey conducted in Slovenia, encompassing a random sample of 275 enterprises, to analyze the factors influencing the transition to an agile approach, the AI-supported organizational culture, AI-enabled workload reduction, and AI-enabled performance enhancement in small and large enterprises. The study investigates whether there are statistically significant differences between small and large enterprises in Slovenia regarding these aspects. These findings provide valuable insights into the distinct perspectives and priorities of small and large enterprises in Slovenia regarding agility and the adoption of AI technologies. The results highlight areas where small businesses may need additional support or targeted strategies to fully leverage the benefits of agility and AI. Policymakers and industry leaders can utilize these findings to promote tailored approaches that enhance agility and facilitate effective AI integration in both small and large enterprises, ultimately contributing to the growth and competitiveness of the Slovenian business landscape.

Introduction

Agility and artificial intelligence (AI) adoption are crucial in the success of any enterprise, regardless of its size (Wijayati et al., 2022; Hughes et al., 2019). Research results (Prentice et al., 2023) show that AI performance can affect employees' job engagement, service, and performance, all shaping the organization's agility (Wamba, 2022).

However, there are notable differences in how enterprises of different sizes approach and implement these concepts (Hansen & Bøgh, 2021; Bhalerao et al., 2022).There are several differences revealed in the research results in the literature, one being the speed at which smaller and larger enterprises can adopt agility and AI (EESC, 2021), since small enterprises have the advantage of being more agile and flexible, allowing them to quickly adapt to changing market conditions. They can easily integrate AI technologies into their existing systems without significant disruption. On the other hand, large

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enterprises often face challenges due to their complex organizational structures and legacy systems. Implementing agility and AI across various departments may require extensive planning, coordination, and resources. Another contrast lies in the level of investment required for agility and AI adoption (EESC, 2021). Small enterprises typically have limited financial resources compared to their larger counterparts. Therefore, they may opt for cost-effective solutions such as cloud-based AI platforms or outsourcing certain functions to specialized service providers. In contrast, large enterprises have more substantial budgets that allow them to invest in building internal AI capabilities or acquiring cutting-edge technologies.

Despite the expected differences, both small and large enterprises stand to benefit from agility and AI adoption. Agility enables businesses to respond rapidly to customer needs, improve operational efficiency, and gain a competitive edge. Meanwhile, AI offers opportunities for automation, data-driven decision-making, personalized customer experiences, and predictive analytics.

This paper investigates whether there are statistically significant differences between small and large enterprises in Slovenia regarding the factors influencing the transition to an agile approach, the AI-supported organizational culture, AI-enabled workload reduction, and AI-enabled performance enhancement. The concept of AI encompasses a range of technologies, including Machine Learning and Deep Learning. AI is described as a machine's capability to perform operations that typically require human intellect, such as speech recognition, understanding of natural language, and decision-making (Soori et al., 2023). Machine learning is a subset of AI that empowers machines to learn from data and previous experiences autonomously. It enables them to identify patterns and make predictions with minimal human guidance (Kanade, 2022). Machine learning and data processing capabilities in a business context encompass a wide range of technologies and methods that are used to extract insights, make predictions, and automate decision-making processes based on data. These capabilities enable businesses to leverage their data assets to gain insights, improve operational efficiency, enhance customer experiences, and drive innovation. Integrating machine learning and advanced data processing technologies is increasingly becoming competitive in many industries (Lantz, 2021; Kureljusic & Metz, 2023).

The findings in the present research underscore specific areas in which small businesses might require extra assistance or focused strategies to maximize the advantages of agility and AI to their fullest extent. Policymakers and industry leaders can employ these insights to advance customized approaches that boost agility and foster the seamless integration of AI in businesses, whether they are small or large, ultimately fostering growth and competitiveness within the Slovenian business environment.

The structure of the paper is as follows: after the introduction, a literature review chapter with the hypotheses set is presented, followed by the description of the methodology and the empirical research results. This paper ends with a discussion and conclusions.

Literature Review

In today's fast-paced business landscape, the concepts of agility and artificial intelligence (AI) have emerged as critical drivers of success. Enterprises that embrace change, foster agility, and leverage AI technologies have a competitive edge in navigating the complexities of the modern market (Wijayati et al., 2022). However, it is observed that large enterprises tend to be more receptive to these transformative forces than their smaller counterparts (Ribeiro et al., 2021). As companies strive to stay competitive and adapt to rapidly changing market dynamics, there is growing recognition of the importance of agility in organizational strategies (Wamba-Taguimdje et al., 2020). Agility enables companies to swiftly respond to market shifts, customer demands, and emerging opportunities (Petermann et al., 2021). However, the connection between enterprise agility and the introduction of artificial intelligence in enterprise operations holds particular significance (Mani and Mishra, 2020). Artificial intelligence technologies offer unprecedented potential to enhance enterprise performance, streamline processes, and drive innovation (Ribeiro et al., 2021). By leveraging AI, companies can automate routine tasks, gain valuable insights from vast amounts of data, and make data-driven decisions in real-time (Pillai et al., 2020). This integration of AI can profoundly impact an enterprise's ability to be agile, enabling faster and more accurate decision-making, efficient resource allocation, and improved responsiveness to customer needs (Wijayati et al., 2022). The introduction of artificial intelligence in company operations can help unlock new levels of agility by optimizing operational efficiency, accelerating product development cycles, and enabling predictive capabilities (Dabbous et al., 2022). This synergy between agility and AI empowers enterprises to navigate complex and uncertain business environments with greater resilience and adaptability. Understanding the relationship between company agility and the integration of artificial intelligence is crucial for businesses

seeking to harness the full potential of AI-driven transformation (Ajgaonkar et al., 2021; Wamba-Taguimdje et al., 2020). By examining how AI technologies enhance agility, enterprises can strategically align their adoption efforts with agility-focused initiatives, fostering a holistic approach to digital transformation (Peeters et al., 2022; Papadopoulos et al., 2020; Klein & Todesco, 2021).

Small enterprises often grapple with resource constraints and limited budgets, which pose significant challenges when embracing agility and investing in AI technologies (Papadopoulos et al., 2020). With smaller teams and leaner structures, these enterprises often face inherent barriers to change and innovation (Klein & Todesco, 2021). While small enterprises may acknowledge the importance of agility and AI, they frequently encounter difficulties in allocating the necessary resources and overcoming operational hurdles to fully adopt these transformative practices (Hansen & Bøgh, 2021; Papadopoulos et al., 2020). Babber and Mittal (2023) in their research on 411 Indian manufacturing micro, small, and medium enterprises (MSMEs) found out that leanness, agility, and innovation significantly and positively influence the sustainability and overall performance of MSMEs. There are various factors to which companies respond differently when deciding to transition to an agile approach to business. These factors stem from the internal and external environments of the businesses and their strategic priorities. Internally, a company might seek agility to improve operational efficiency, to better manage and utilize human resources, or to foster a culture of continuous improvement and innovation (Attar & Abdul-Kareem, 2020; Denning, 2016; Martinez-Sanchez & Vicente-Oliva, 2023). Externally, the driving factors can include the need to keep up with rapid technological advancements, respond to shifting consumer demands more swiftly, or remain competitive in a market where competitors might adopt more flexible, agile methods (Solheim et al., 2023). The importance of a digital agenda for companies to become more agile lies in facilitating these benefits through technology. Digital tools and platforms can streamline communication, automate workflows, and provide real-time data, all key components of an agile organization (Liu et al., 2023). By adopting a digital agenda, companies can leverage technology to enhance their agility further, allowing for faster adaptation to new technologies, better customer experiences, and more innovative solutions, ensuring long-term sustainability and success in the digital age (Bresciani et al., 2021). Thus, we formulated a hypothesis:

H1: There are statistically significant differences in the factors influencing the transition to an agile approach between small and large enterprises in Slovenia.

A company with a culture that is open to AI fosters an environment of innovation where the potential for AI to transform operations and create new opportunities is actively pursued. This culture is crucial for gaining and maintaining a competitive advantage, as AI can optimize operations, enhance customer experiences, and inform strategic decision-making (Ransbotham et al., 2021). Moreover, such a culture promotes employee skills development, preparing the workforce for the evolving technological landscape and the future of work (English, 2023). Moreover, Isensee et al. (2021) emphasize that attitudes, beliefs, and values within an organization are crucial for accepting and successfully integrating artificial intelligence. The MIT SMR-BCG study (Ransbotham et al., 2021), which included a survey of 2,197 managers and interviews with 18 executives worldwide, reveals a variety of AI-related cultural advantages at both the team and organizational level. For instance, in cases where AI implementations enhanced efficiency and decision-making, an overwhelming majority of over 75% reported simultaneous improvements in team morale, collaboration, and joint learning. The cultural shift by AI use goes beyond the narrow view of AI as a tool for relieving workers from monotonous tasks. Malik et al. (2021) in their research on data collected from 32 working professionals who had experience in working on projects in multinational firms, found out that Nearly half of the respondents in a study indicated that job automation is a positive innovation, underscoring the digital workspace as a new paradigm that allows employees to work in both physical and cyberspace. This dual capability facilitates increased productivity, as employees save time on commuting, gain more flexibility, and can work without time and place constraints. AI has been found to provide information transparency, leading to more free time, an improved work-life balance, and greater flexibility for employees. This contributes to overall satisfaction, collaboration, career progression, and commitment. AI enhances employee intelligence by aiding in decision-making and bolsters creative skills. It supports essential management tasks, solves functional challenges, and streamlines processes, improving job performance and enabling employees to focus on innovation and customer interaction (Malik et al., 2021; Mer, 2023). Also, the findings from the McKinsey Global Institute (2023) indicate that together with other technologies, the current capabilities of generative AI have the theoretical potential to automate work activities, such as drafting emails or responding to customer inquiries, that currently occupy 60% to 70% of the time employees spend working. According to this, the following two hypotheses are proposed:

H2: There are statistically significant differences in AI-supported organizational culture between small and large enterprises in Slovenia.

H3: There are statistically significant differences in AI-Enabled Workload Reduction between small and large enterprises in Slovenia.

The MIT SMR-BCG study (Ransbotham et al., 2021), which included a survey of 2,197 managers and interviews with 18 executives worldwide, indicated that AI has enabled some leaders to pinpoint new key performance indicators, leading to revised goals, success metrics, and behavior patterns, as well as updated areas of responsibility. It has also allowed organizations to adjust behaviors and enhance competitiveness. Cultivating a culture that champions AI-driven innovation directly impacts competitive positioning. This study indicated that those who deploy AI to discover novel value-creation methods greatly improve their competitive abilities with AI, compared to those who simply use AI to refine existing operations. Respondents who leverage AI to innovate were found to be 2.7 times more likely to gain a competitive edge. Moreover, the latest research from the McKinsey Global Institute (2023) on generative AI and productivity suggests that generative AI could significantly boost global corporate profits by an estimated $2.6 trillion to $4.4 trillion annually. The study identified 63 use cases where generative AI could enhance productivity. This includes facilitating customer support interactions, generating creative content for marketing and sales, and drafting software code from natural-language prompts, among other applications. Such advancements are expected to enhance productivity derived from AI and analytics by 15% to 40%, potentially doubling as generative AI becomes more widely adopted in workplaces globally. Therefore, the following hypothesis is proposed:

H4: There are statistically significant differences in AI-Enabled Performance Enhancement between small and large enterprises in Slovenia.

By examining these hypotheses, this study aims to shed light on the distinctive characteristics and challenges faced by small and large enterprises in Slovenia when embracing agility and leveraging AI technologies. Understanding the differences in agility and AI adoption between small and large enterprises is crucial for practitioners and researchers. It sheds light on small enterprises' unique challenges and offers insights into strategies that can help overcome these barriers. Additionally, it highlights the potential benefits that large enterprises can leverage by further enhancing their agility and deepening their integration of AI. By delving into the disparities between small and large enterprises regarding agility and AI adoption, this article aims to provide valuable insights for decision-makers, entrepreneurs, and researchers seeking to foster organizational agility and drive AI-driven innovation across diverse business environments. The findings will contribute to a better understanding of the dynamics involved and provide valuable insights for organizations seeking to enhance their agility and maximize the benefits of AI integration, regardless of their size.

Methodology

A survey encompassing a random sample of 275 enterprises in Slovenia was conducted to gather data for this study. The sample consisted of 43.3% small enterprises and 56.7% large enterprises. Small-sized companies are defined as those that meet at least two of the following criteria: (1) there are no more than 50 employees in average in a business year, (2) NET revenues from sales do not surpass 8.000.000 EUR, and (3) the value of assets does not surpass 4.000.000 EUR (ZGD-1, 2006). Large companies are those companies that fulfill the following criteria: (1) the average number of employees in the business year exceeds 250, (2) net sales revenue exceeds 40.000.000 EUR, and (3) the value of assets exceeds 20.000.000 EUR (ZGD-1, 2006). Data were collected from April 2022 to the end of June 2022. We used the Computer-Assisted Web Interviewing (CAWI) method for data collection. This approach was chosen due to its efficiency, ability to reach a wide audience, and the convenience it offers to respondents, allowing them to participate at a time that best suits them.

The main survey involved a random selection of 275 Slovenian enterprises from the AJPES (Slovenian Business Register) database of business subjects based on the standard classification of company activities. This random selection totaled 2,000 representing the proportion of all small and large enterprises in Slovenia. Therefore, the response rate of companies willing to participate and completed the survey in this study was 14%.

The study participants included each enterprise's owners or managers (senior managers). The survey covered various sectors, including information and communication activities (29.8%), financial and insurance activities (25.1%), professional, scientific, and technical activities (19.3%), real estate activities (14.2%), manufacturing (6.4%), wholesale and retail trade, repair of motor

vehicles, and motorcycles (3.3%), and administrative and support service activities (1.9%).

For data collection, a closed-type questionnaire was utilized. The questionnaire was designed to incorporate statements related to specific concepts, and participants were asked to indicate their level of agreement using a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The items for the construct *factors for the transition to an agile approach* were adopted from Ajgaonkar et al. (2021), items for the construct *AI-supported organizational culture* were adopted from Dabbous et al. (2022), items for the construct *AI-enabled workload reduction* were adopted from Qiu et al. (2022), and items for the construct *AI-enabled performance enhancement* were adopted from Wijayati et al. (2022).

Descriptive statistics and a non-parametric Mann-Whitney U test were employed to analyze the statistically significant differences between small and large enterprises. The Mann-Whitney U test compares differences between two independent groups when the dependent variable is ordinal or continuous but not normally distributed (Hollander, 2013). The Mann-Whitney U test was employed to determine statistically significant differences between small and large enterprises regarding various constructs, including factors for the transition to an agile approach, AI-supported organizational culture, AI-enabled workload reduction, and AI-enabled performance enhancement.

Results

The results presented in Table 1 demonstrate that, on average, large enterprises exhibit higher levels of agreement with all statements of the factors influencing the transition to an agile approach. This suggests that large companies are more inclined towards embracing agility in their operations.

The findings also indicate that both large and small enterprises agree that agility within their organizations is crucial for driving the digital agenda. Additionally, both groups acknowledge the importance of agility for swiftly adapting to market changes, continuously improving customer satisfaction, enhancing transparency, and effectively managing priorities. Small enterprises, on average, express partial agreement regarding the necessity of agility for improving team productivity. This suggests that small companies may perceive a less pronounced connection between agility and team

Table 1

Descriptive statistics and Mann-Whitney test for the construct factors for the transition to an agile approach

Factors for the transition to an agile approach	Mann-Whitney U	Asymp. Sig. (2-tailed)	Small enterprises			Large enterprises		
			Mean	Median	Std. Deviation	Mean	Median	Std. Deviation
Agility in our enterprise is necessary for the digital agenda.	21189.500	0.065	3.84	4.00	1.268	4.16	4.00	0.875
Agility in our enterprise is necessary for the fast and continuous improvement of customer satisfaction.	21534.500	0.118	3.79	4.00	1.272	4.07	4.00	0.922
Agility in our enterprise is necessary for faster product delivery adjusted to changing customer needs.	20845.000	0.036	3.59	4.00	1.302	3.91	4.00	0.992
Agility in our enterprise is necessary for swiftly adapting to market changes.	21339.000	0.082	3.82	4.00	1.309	4.10	4.00	0.832
Agility in our enterprise is necessary for improving transparency and managing priorities in the company.	20883.000	0.038	3.64	4.00	1.374	4.03	4.00	0.899
Agility in our enterprise is necessary for increased flexibility.	20658.000	0.023	3.69	4.00	1.237	4.02	4.00	0.906
Agility in our enterprise is necessary for improving team productivity.	20934.500	0.045	3.33	4.00	1.281	3.87	4.00	1.125

Source: Authors

productivity than their larger counterparts. These results shed light on small and large enterprises' distinct perspectives and priorities regarding the significance of agility in their operations. While both small and large companies recognize the importance of agility for various aspects of their business, the variations in agreement levels highlight potential areas where smaller companies may need additional support or targeted strategies to fully leverage the benefits of agility. Based on the results of the Mann-Whitney U test, the authors confirm hypothesis H1: There are statistically significant differences in the factors influencing the transition to an agile approach between small and large enterprises in Slovenia.

In the following, Table 2 presents descriptive statistics and Mann-Whitney Test for constructing AI-supported organizational culture.

The results in Table 2 indicate that large companies possess an organizational culture supporting AI integration. On average, these companies agree more with all statements about an AI-supported organizational culture than small companies. Particularly, large companies exhibit the highest level of agreement when it comes to seamlessly integrating AI technologies into their workflows and operations. They also recognize the importance of clear communication channels to educate and inform employees about AI initiatives and actively encourage their employees to embrace and adopt AI technologies to enhance work processes. Furthermore, on average, large enterprises show a higher level of agreement than small enterprises in promoting a culture that values and rewards innovation and experimentation with AI. Based on the results of the Mann-Whitney U test, the authors confirm the hypothesis H2: There are statistically significant differences in AI-supported organizational culture between small and large enterprises in Slovenia.

Table 3 presents descriptive statistics and Mann-Whitney Test for the construct of AI-enabled workload reduction.

The results presented in Table 3 indicate that, on average, large companies demonstrate a higher level of agreement with all statements related to AI-enabled workload reduction. Among these statements, the highest average agreement within large companies pertains to reducing workload through using artificial intelligence. Specifically, there is strong consensus that the AI technology implemented in their enterprise can effectively communicate with users/customers, consequently reducing the workload for employees. Based on the Mann-Whitney U test results, the authors

Table 2

Descriptive statistics and Mann-Whitney test for the construct AI-supported organizational culture

AI-supported organizational culture	Mann-Whitney U	Asymp. Sig. (2-tailed)	Small enterprises			Large enterprises		
			Mean	Median	Std. Deviation	Mean	Median	Std. Deviation
AI technologies are integrated seamlessly into our organization's workflows and operations.	20032.500	0.006	3.51	4.00	1.201	4.11	4.00	0.955
Our organization promotes a culture that values and rewards innovation and experimentation with AI.	19256.000	0.001	3.57	4.00	1.405	4.05	4.00	1.120
Employees in our organization are encouraged to embrace and adopt AI technologies to improve work processes.	20787.500	0.031	3.53	4.00	1.035	4.06	4.00	0.981
There is a strong belief in our organization that AI can enhance decision-making and problem-solving.	20708.500	0.028	3.49	4.00	1.351	3.83	4.00	1.110
Our organization has clear communication channels to educate and inform employees about AI initiatives.	18473.500	0.000	3.52	4.00	1.260	4.08	4.00	0.981

Source: Authors

confirm hypothesis H3: There are statistically significant differences in AI-enabled workload reduction between small and large enterprises in Slovenia.

Table 4 presents descriptive statistics and Mann-Whitney Test for the construct of AI-enabled performance enhancement.

The findings in Table 4 demonstrate that large companies exhibit a higher average agreement with all statements about the AI-enabled performance enhancement construct than small companies. This suggests that large companies utilize artificial intelligence technologies more, leading to improved performance outcomes. On average, large companies strongly agree that

Table 3

Descriptive statistics and Mann-Whitney test for the construct AI-enabled workload reduction

AI-Enabled Workload Reduction	Mann-Whitney U	Asymp. Sig. (2-tailed)	Small enterprises			Large enterprises		
			Mean	Median	Std. Deviation	Mean	Median	Std. Deviation
The AI technology applied in our enterprise can communicate with users/customers which reduces the workload of employees.	18086.000	0.001	3.62	4.00	1.354	4.07	4.00	1.111
The AI technology applied in our enterprise can search and analyse information which reduces the workload of employees.	18614.500	0.004	3.64	4.00	1.328	4.02	4.00	1.188
Artificial intelligence can help in getting the job done which saves employees work time	17237.000	0.000	3.52	4.00	1.437	3.98	4.00	1.137

Source: Authors

Table 4

Descriptive statistics and Mann-Whitney test for the construct AI-enabled performance enhancement

AI-enabled performance enhancement	Mann-Whitney U	Asymp. Sig. (2-tailed)	Small enterprises			Large enterprises		
			Mean	Median	Std. Deviation	Mean	Median	Std. Deviation
Through AI the chance of employees error at work is less.	18790.000	0.008	3.29	4.00	1.388	3.81	4.00	1.136
AI accelerates making quick and better decisions to achieve successful results.	20089.000	0.110	3.48	4.00	1.392	3.85	4.00	1.131
AI provides accurate data and information.	20016.500	0.093	3.62	4.00	1.315	3.89	4.00	1.186
Products or services meet the expectations of customers.	19444.000	0.032	3.51	4.00	1.389	3.84	4.00	1.066
The delivery of goods or services is conducted in a timely fashion.	19293.500	0.024	3.16	4.00	1.450	3.73	4.00	1.224
Compared to our key competitors, our enterprise is growing faster.	19183.000	0.017	3.45	4.00	1.437	4.06	4.00	0.967
Compared to our key competitors, our enterprise is more profitable.	19578.000	0.041	3.43	4.00	1.421	4.01	4.00	1.076
Compared to our key competitors, our enterprise is more innovative.	19346.500	0.026	3.39	4.00	1.514	3.90	4.00	0.993

Source: Authors

their organization experiences faster growth, higher profitability, and increased innovation. This is followed that AI plays a crucial role in providing accurate data and information, facilitating quick and informed decision-making, and ultimately leading to successful outcomes where products or services meet customer expectations. Based on the Mann-Whitney U test results, the authors confirm hypothesis H4: There are statistically significant differences in AI-Enabled Performance Enhancement between small and large enterprises in Slovenia.

Discussion and Conclusion

The study results provide valuable insights into the differences between small and large enterprises in Slovenia regarding adopting agility and AI technologies. Our study found that large enterprises agree more with the factors influencing the transition to an agile approach than small enterprises. This aligns with previous research by Attar and Abdul-Kareem (2020) and Denning (2016), which suggested that larger organizations are more likely to adopt agile practices due to their scale and resources. Results of our study suggests that larger enterprises are more inclined to embrace agility in their operations, potentially due to their scale, resources, and organizational structure. Both large and small enterprises in Slovenia unanimously agree on the crucial role of agility in driving the digital agenda within their organizations. They recognize that agility is vital for adapting swiftly to market changes, continuously improving customer satisfaction, enhancing transparency, and effectively managing priorities. However, on average, small enterprises express partial agreement regarding the connection between agility and team productivity. This implies that smaller companies may perceive a weaker association between agility and team productivity than their larger counterparts, potentially due to different operational contexts and resource limitations. These results shed light on small and large enterprises' distinct perspectives and priorities concerning the significance of agility in their operations. Although both small and large companies acknowledge the importance of agility for various aspects of their business, the variations in agreement levels highlight potential areas where smaller companies may need additional support or targeted strategies to fully leverage the benefits of agility. The study also reveals statistically significant differences in the factors influencing the transition to an agile approach between small and large enterprises in Slovenia. This underscores the need for tailored approaches and support mechanisms to facilitate the adoption of agile practices, particularly among smaller enterprises.

Large companies tend to exhibit higher levels of agreement in various aspects related to AI-supported organizational culture, AI-enabled workload reduction, and AI-enabled performance enhancement. In conclusion, the results highlight significant differences between small and large enterprises in Slovenia regarding their perspectives and adoption of agility and AI technologies. In line with the findings from Hughes et al. (2019) and Wijayati et al. (2022), our study indicates that larger companies not only express a higher agreement with statements related to AI-supported organizational culture but also report more significant AI-enabled workload reduction and performance enhancement. This suggests that while there is a general acknowledgment of the importance of agility and AI across the board, the level of adoption and the perceived impact of these technologies vary significantly between small and large enterprises. Large companies demonstrate a stronger inclination towards embracing agility, possess a more supportive AI-enabled organizational culture, experience more significant workload reduction through AI, and achieve enhanced performance outcomes with the help of AI technologies. These findings suggest that smaller enterprises may benefit from targeted strategies and support to fully leverage the benefits of agility and AI. The results indicate that large companies possess an organizational culture that supports the implementation of AI to a greater extent than small companies. On average, large enterprises demonstrate higher levels of agreement with statements related to AI-supported organizational culture, emphasizing the seamless integration of AI technologies into their workflows and operations. These companies also recognize the importance of clear communication channels to educate and inform employees about AI initiatives and actively encourage their workforce to embrace and adopt AI technologies to enhance work processes. Our results indicate that large companies possess a more supportive organizational culture for AI integration than small companies. This is consistent with findings from Dabbous et al. (2022), highlighting the importance of organizational culture in AI adoption. Additionally, large enterprises exhibit a higher level of agreement compared to small enterprises when it comes to fostering a culture that values and rewards innovation and experimentation with AI. The study shows that large companies agree more with statements related to AI-enabled workload reduction. This supports the narrative from Malik et al. (2021) that AI can reduce workload and improve efficiency, particularly in larger enterprises. In terms of AI-enabled performance

enhancement, large companies exhibit a higher average agreement with all related statements than small companies. This suggests that large enterprises utilize AI technologies to a greater extent, leading to improved performance outcomes. On average, large companies strongly agree that their organization experiences faster growth, higher profitability, and increased innovation as a result of AI adoption. They also acknowledge the crucial role of AI in providing accurate data and information, facilitating quick and informed decision-making, and ultimately leading to successful outcomes where products or services meet customer expectations. The findings underline the need for tailored strategies and support mechanisms to facilitate the adoption of agility and AI technologies, particularly among smaller enterprises. By addressing small businesses' specific needs and challenges, policymakers and industry leaders can promote a more inclusive and effective utilization of agility and AI, ultimately contributing to the growth and competitiveness of the Slovenian business landscape.

A survey by Statistical Office of the Republic of Slovenia (2022) revealed that in 2021, among enterprises with a workforce of 10 or more, including self-employed individuals, 12% have adopted AI technologies. This adoption is broken down into 9% of small enterprises, 20% of medium-sized enterprises, and 36% of large enterprises. Looking at industry-specific usage, 9% of manufacturing enterprises and 14% of service-oriented enterprises employ AI technologies. The most commonly deployed AI technologies are those used for identifying objects or individuals, such as computer vision, machine vision, and video analytics. These technologies, which can recognize products, fingerprints, faces, or objects from images, are employed by 8% of enterprises. Additionally, 3% of enterprises utilize machine learning for data analysis and predictive modeling, and an equal percentage use technologies for generating written or spoken language (natural language generation). A further 2% of enterprises apply technologies that automate diverse workflows or support decision-making. Lastly, 1% of enterprises use technologies for written language analysis (text mining), converting spoken language into a machine-readable format (speech recognition), and enabling physical machine movement through autonomous decision-making based on environmental observation, such as autonomous robots, self-driving vehicles, and drones.

While AI can offer numerous advantages, including efficiency improvements and competitive advantages, businesses need to assess their readiness, resource availability, and the relevance of AI to their operations before deciding to increase adoption. The decision to increase AI adoption should be based on carefully evaluating the potential benefits and risks, each enterprise's specific needs and challenges, and the competitive landscape. In 2022, it was found that in Slovenia 35% of enterprises and self-employed individuals with a workforce of 10 or more have a low digital intensity index, that is used to assess the overall digital maturity or readiness of a business. Only 20% have clearly defined the digital skills required for each job role within their systematization. Additionally, in 2021, about 29% of these entities provided training for ICT skill development. Digital transformation, which encompasses adopting new technologies to alter business operations, can lead to cost savings and enhanced productivity. However, 58% of such enterprises and self-employed individuals encountered obstacles in their digital transformation efforts (a slight decrease from 60% in 2021). This challenge varied by size, with 56% of small enterprises, 67% of medium enterprises, and 79% of large enterprises facing hurdles. Staffing issues or a lack of necessary knowledge impeded 36% of enterprises (34% small, 45% medium, and 55% large), while 31% were constrained by financial limitations (31% small, 32% medium, and 36% large). Notably, 26% reported no issues with digital transformation, and 43% did not view it as vital for success (down from 46% in 2021). Lastly, most enterprises with at least 10 employees had a low (35%) or very low (32%) digital intensity index in 2022, with 28% having a high and 5% a very high index. Specifically, 37% of small enterprises had a very low index, while 44% of medium and 47% of large enterprises had a high digital intensity index (Statistical Office of the Republic of Slovenia, 2022).

Moreover, we suggest some recommendations on how small businesses can increase their agility and utilize AI effectively. Small enterprises should prioritize creating an organizational culture that values and promotes agility. This can be achieved by encouraging open communication, embracing experimentation, and empowering employees to make decisions and take ownership of their work. Promote a growth mindset that values learning and continuous improvement. Small enterprises should provide training and resources to employees to develop their skills in agile practices and AI technologies. This can include workshops, online courses, or mentorship programs. Upskilling employees will enable them to effectively utilize AI tools and leverage their benefits within the business operations. Also, small enterprises can benefit from partnering with technology companies or consultants specializing in AI. These partnerships can provide access to expertise, guidance, and customized AI solutions tailored to small enterprises' specific needs and limitations. Furthermore, small enterprises can take

advantage of cloud-based AI platforms, which offer accessible and affordable AI solutions. These platforms provide pre-built AI models and tools that can be easily integrated into existing systems without requiring extensive technical expertise or large upfront investments. AI technologies are rapidly evolving, so small businesses need to stay updated with the latest advancements and trends. Regularly monitor industry news, attend conferences or webinars, and network with experts to ensure the business remains aware of new AI tools and applications that can benefit its operations. Small enterprises should regularly monitor and evaluate the impact of AI implementation on the business. Also, small enterprises should analyze key performance indicators and gather feedback from employees and customers to assess their effectiveness and identify areas for improvement. Adjust AI strategies and initiatives based on these insights to maximize the value derived from AI technologies.

While this study offers valuable insights into the adoption and impact of agility and artificial intelligence (AI) technologies in small and large enterprises in Slovenia, it also opens several avenues for future research. We propose the following directions for further investigation to build upon our findings. Future research could explore how adopting agility and AI technologies in enterprises varies across countries and cultural contexts. Such studies would provide a global perspective and help understand the role of regional dynamics in technology adoption. Long-term studies could be conducted to assess the sustained impact of agility and AI on organizational performance. Tracking changes over time would provide deeper insights into these technologies' long-term benefits and challenges. Moreover, our findings suggest that organizational culture plays a significant role in adopting AI. Future studies could explore how various aspects of organizational culture, such as leadership, communication, and employee engagement, influence AI adoption and implementation. By addressing these areas, future research can further enrich our understanding of agility and AI in the business context and contribute to the development of more effective strategies for technology adoption and utilization.

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Agilnost in sprejemanje umetne inteligence: mala in velika podjetja

Izvleček

V članku so predstavljene ugotovitve raziskave, izvedene v Sloveniji na naključnem vzorcu 275 podjetij, v kateri so bili analizirani dejavniki, ki vplivajo na prehod na agilni pristop, organizacijsko kulturo, podprto z umetno inteligenco (UI), zmanjšanje delovne obremenitve z umetno inteligenco in povečanje učinkovitosti z umetno inteligenco v malih in velikih podjetjih. Študija raziskuje ali obstajajo statistično pomembne razlike med malimi in velikimi podjetji v Sloveniji glede navedenih vidikov. Njene ugotovitve zagotavljajo dragocen vpogled v različne perspektive in prednostne naloge malih in velikih podjetij v Sloveniji glede agilnosti in uvajanja tehnologij umetne inteligence. Rezultati opozarjajo na področja, na katerih bodo mala podjetja morda potrebovala dodatno podporo ali ciljno usmerjene strategije, da bi v celoti izkoristila prednosti agilnosti in umetne inteligence. Oblikovalci politik in vodilni v industriji lahko te ugotovitve uporabijo za spodbujanje prilagojenih pristopov, ki povečujejo agilnost in omogočajo učinkovito vključevanje UI tako v malih kot velikih podjetjih, kar na koncu prispeva k rasti in konkurenčnosti slovenskega poslovnega prostora.

Ključne besede: uspešnost podjetja, upravljanje IT, agilnost, umetna inteligenca, Slovenija